

# LilyPond

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Das Notensatzprogramm

## Snippets

Das LilyPond-Entwicklerteam

This document shows a selected set of LilyPond snippets from the LilyPond Snippet Repository (<https://lsr.di.unimi.it>) (LSR). It is in the public domain.

We would like to address many thanks to Sebastiano Vigna for maintaining LSR web site and database, and the University of Milano for hosting LSR.

Please note that this document is not an exact subset of LSR: some snippets come from input/new LilyPond sources directory, and snippets from LSR are converted through convert-ly, as LSR is based on a stable LilyPond version, and this document is for version 2.25.12.

Snippets are grouped by tags; tags listed in the table of contents match a section of LilyPond notation manual. Snippets may have several tags, and not all LSR tags may appear in this document.

In the HTML version of this document, you can click on the file name or figure for each example to see the corresponding input file.

Zu mehr Information, wie dieses Handbuch unter den anderen Handbüchern positioniert, oder um dieses Handbuch in einem anderen Format zu lesen, besuchen Sie bitte Abschnitt “Handbücher” in *Allgemeine Information*.

Wenn Ihnen Handbücher fehlen, finden Sie die gesamte Dokumentation unter <https://lilypond.org/>.

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Für LilyPond Version 2.25.12

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# Pitches

Abschnitt “Pitches” in *Notationsreferenz*

## Ambitus pro Stimme hinzufügen

Ambitus können pro Stimme gesetzt werden. In diesem Fall müssen sie manuell verschoben werden, um Zusammenstöße zu verhindern.

```
\new Staff <<
  \new Voice \with {
    \consists "Ambitus_engraver"
  } \relative c' {
    \override Ambitus.X-offset = 2.0
    \voiceOne
    c4 a d e
    f1
  }
  \new Voice \with {
    \consists "Ambitus_engraver"
  } \relative c' {
    \voiceTwo
    es4 f g as
    b1
  }
}>>
```



## Adding an ottava marking to a single voice

If you have more than one voice on the staff, setting octavation in one voice transposes the position of notes in all voices for the duration of the ottava bracket. If the octavation is only intended to apply to one voice, the *Ottava\_spanner\_engraver* should be moved to Voice context.

```
\layout {
  \context {
    \Staff
    \remove Ottava_spanner_engraver
  }
  \context {
    \Voice
    \consists Ottava_spanner_engraver
  }
}

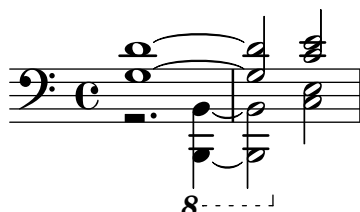
{
  \clef bass
  << { <g d'>1~ q2 <c' e'> }
  \\
  {
    r2.
  }
}
```



```

\ottava -1
<b,,, b,,>4 ~ |
q2
\ottava 0
<c e>2
}
>>
}

```



## Aiken head thin variant noteheads

Aiken head white notes get harder to read at smaller staff sizes, especially with ledger lines. Losing interior white space makes them appear as quarter notes.

```

\score {
{
\aikenHeads
c''2 a' c' a

% Switch to thin-variant noteheads
\set shapeNoteStyles = ##(doThin reThin miThin
                        faThin sol laThin tiThin)
c'' a' c' a
}
}

```



## Altering the length of beamed stems

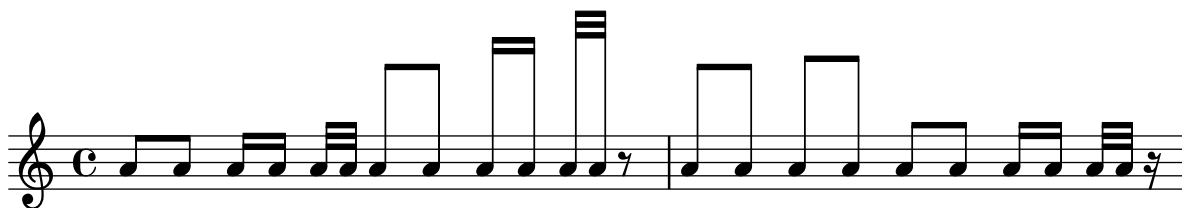
Stem lengths on beamed notes can be varied by overriding the beamed-lengths property of the details of the Stem. If a single value is used as an argument, the length applies to all stems. When multiple arguments are used, the first applies to eighth notes, the second to sixteenth notes and so on. The final argument also applies to all notes shorter than the note length of the final argument. Non-integer arguments may also be used.

```

\relative c'' {
\override Stem.details.beamed-lengths = #'(2)
a8[ a] a16[ a] a32[ a]
\override Stem.details.beamed-lengths = #'(8 10 12)
a8[ a] a16[ a] a32[ a] r8
\override Stem.details.beamed-lengths = #'(8)
a8[ a]
\override Stem.details.beamed-lengths = #'(8.5)
a8[ a]
\revert Stem.details.beamed-lengths
}

```

```
a8[ a] a16[ a] a32[ a] r16
}
```



## Ambitus

Ambitus indicate pitch ranges for voices.

Accidentals only show up if they are not part of the key signature. `AmbitusNoteHead` grobs also have ledger lines.

```
\layout {
  \context {
    \Voice
    \consists "Ambitus_engraver"
  }
}
```

```
<<
\new Staff {
  \relative c' {
    \time 2/4
    c4 f'
  }
}
\new Staff {
  \relative c' {
    \time 2/4
    \key d \major
    cis4 as'
  }
}
>>
```



## Ambitus after key signature

By default, ambitus are positioned at the left of the clef. The `\ambitusAfter` function allows for changing this placement. Syntax is `\ambitusAfter grob-interface` (see Graphical Object Interfaces (<http://lilypond.org/doc/v2.22/Documentation/internals/graphical-object-interfaces>) for a list of possible values for `grob-interface`.)

A common use case is printing the ambitus between key signature and time signature.

```
\new Staff \with {
```

```

\consists Ambitus_engraver
} \relative {
  \ambitusAfter key-signature
  \key d \major
  es'8 g bes cis d2
}

```



## Ambitus mit vielen Stimmen

Indem man den `Ambitus_engraver` im Staff-Kontext hinzufügt, erhält man einen einzigen Ambitus pro System, auch in dem Fall, dass mehrere Stimmen sich im gleichen System befinden.

```

\new Staff \with {
  \consists "Ambitus_engraver"
}
<<
  \new Voice \relative c'' {
    \voiceOne
    c4 a d e
    f1
  }
  \new Voice \relative c' {
    \voiceTwo
    es4 f g as
    b1
  }
>>

```



## Notenkopfstile basierend auf der Tonleiterstufe erstellen

Die `shapeNoteStyles`-(`NotenFormenStile`)-Eigenschaft kann benutzt werden, um verschiedene Notenstile für jeden Schritt der Tonleiter zu definieren (vorgegeben von der Tonart oder der „tonic“ (Tonika)-Eigenschaft. Diese Eigenschaft braucht eine Anzahl von Symbolen, welche beliebig sein können (geometrische Ausdrücke wie `triangle` (Dreieck), `cross` (Kreuz) und `xcircle` (X-Kreis) sind erlaubt) oder basierend auf einer alten amerikanischen Notensatztradition (einige lateinische Notenbezeichnungen sind auch erlaubt).

Um alte amerikanische Liederbücher zu imitieren, gibt es einige vordefinierte Notenstile wie etwa `\aikenHeads` (im Stil von Aiken) oder `\sacredHarpHeads` (im Stil der Sacred Harp-Tradition).

Dieses Beispiel zeigt, wie man unterschiedlich geformte Noten erhält und eine Melodie transponieren kann, ohne dass das Verhältnis zwischen den harmonischen Funktionen und dem Notenstil verloren geht.

```

fragment = {
  \key c \major
  c2 d

```

```

e2 f
g2 a
b2 c
}

\new Staff {
  \transpose c d
  \relative c' {
    \set shapeNoteStyles = ##(do re mi fa
                          #f la ti)

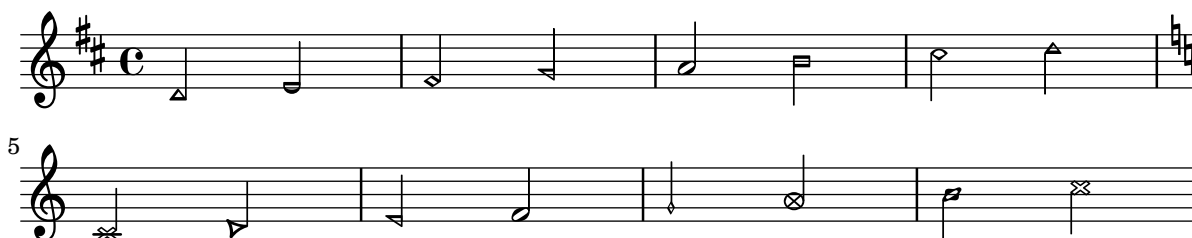
    \fragment
  }

  \break

  \relative c' {
    \set shapeNoteStyles = ##(cross triangle fa #f
                          mensural xcircle diamond)

    \fragment
  }
}

```



## Automatically changing the stem direction of the middle note based on the melody

LilyPond can alter the stem direction of the middle note on a staff so that it follows the melody, by adding the `Melody_engraver` to the `Voice` context.

The context property `suspendMelodyDecisions` may be used to turn off this behavior locally.

```

\relative c' {
  \time 3/4
  a8 b g f b g |
  \set suspendMelodyDecisions = ##t
  a b g f b g |
  \unset suspendMelodyDecisions
  c b d c b c |
}

\layout {
  \context {
    \Voice
    \consists "Melody_engraver"
    \autoBeamOff
  }
}

```



## Changing ottava text

Internally, `\ottava` sets the properties `ottavation` (for example, to `8va` or `8vb`) and `middleCPosition`. To override the text of the bracket, set `ottavation` after invoking `\ottava`.

Short text is especially useful when a brief ottava is used.

```
{
  c'2
  \ottava 1
  \set Staff.ottavation = "8"
  c''2
  \ottava 0
  c'1
  \ottava 1
  \set Staff.ottavation = "Text"
  c''1
}
```



## Changing the ambitus gap

It is possible to change the default gap between the ambitus noteheads and the line joining them.

```
\layout {
  \context {
    \Voice
    \consists "Ambitus_engraver"
  }
}
```

```
\new Staff {
  \time 2/4
  % Default setting
  c'4 g''
}
```

```
\new Staff {
  \time 2/4
  \override AmbitusLine.gap = 0
  c'4 g''
}
```

```
\new Staff {
  \time 2/4
  \override AmbitusLine.gap = 1
  c'4 g''
}
```

```

}

\new Staff {
  \time 2/4
  \override AmbitusLine.gap = 1.5
  c'4 g'
}

\paper { tagline = ##f }

```



## Changing the interval of lines on the staff

`staffLineLayoutFunction` is used to change the position of notes. This snippet shows setting its value to `ly:pitch-semitones` in order to produce a chromatic scale with the distance between each space and line of the staff equal to one semitone.

```

scale = \relative c' {
  a4 ais b c
  cis4 d dis e
  f4 fis g gis
  a1
}

\new Staff \with {
  \remove "Accidental_engraver"
  staffLineLayoutFunction = #ly:pitch-semitones
}
{
  <<
    \scale
    \context NoteNames {
      \set printOctaveNames = ##f
      \scale
    }
  >>
}

```



## Clefs can be transposed by arbitrary amounts

Clefs can be transposed by arbitrary amounts, not just by octaves.

```
\relative c' {
  \clef treble
  c4 c c c
  \clef "treble_8"
  c4 c c c
  \clef "treble_5"
  c4 c c c
  \clef "treble^3"
  c4 c c c
}
```



## Coloring notes depending on their pitch

It is possible to color note heads depending on their pitch and/or their names: the function used in this example even makes it possible to distinguish enharmonics.

*%Association list of pitches to colors.*

```
#(define color-mapping
  (list
    (cons (ly:make-pitch 0 0 NATURAL) (x11-color 'red))
    (cons (ly:make-pitch 0 0 SHARP) (x11-color 'green))
    (cons (ly:make-pitch 0 1 FLAT) (x11-color 'green))
    (cons (ly:make-pitch 0 2 NATURAL) (x11-color 'red))
    (cons (ly:make-pitch 0 2 SHARP) (x11-color 'green))
    (cons (ly:make-pitch 0 3 FLAT) (x11-color 'red))
    (cons (ly:make-pitch 0 3 NATURAL) (x11-color 'green))
    (cons (ly:make-pitch 0 4 SHARP) (x11-color 'red))
    (cons (ly:make-pitch 0 5 NATURAL) (x11-color 'green))
    (cons (ly:make-pitch 0 5 FLAT) (x11-color 'red))
    (cons (ly:make-pitch 0 6 SHARP) (x11-color 'red))
    (cons (ly:make-pitch 0 1 NATURAL) (x11-color 'blue))
    (cons (ly:make-pitch 0 3 SHARP) (x11-color 'blue))
    (cons (ly:make-pitch 0 4 FLAT) (x11-color 'blue))
    (cons (ly:make-pitch 0 5 SHARP) (x11-color 'blue))
    (cons (ly:make-pitch 0 6 FLAT) (x11-color 'blue))))
```

*%Compare pitch and alteration (not octave).*

```
#(define (pitch-equals? p1 p2)
  (and
    (= (ly:pitch-alteration p1) (ly:pitch-alteration p2))
    (= (ly:pitch-notename p1) (ly:pitch-notename p2))))
```

```

#(define (pitch-to-color pitch)
  (let ((color (assoc pitch color-mapping pitch-equals?)))
    (if color
        (cdr color))))

#(define (color-notehead grob)
  (pitch-to-color
   (ly:event-property (event-cause grob) 'pitch)))

\score {
  \new Staff \relative c' {
    \override NoteHead.color = #color-notehead
    c8 b d dis ees f g aes
  }
}

```



## Creating a sequence of notes on various pitches

In music that contains many occurrences of the same sequence of notes at different pitches, the following music function may prove useful. It takes a note, of which only the pitch is used.

This example creates the rhythm used throughout *Mars*, from Gustav Holst's *The Planets*.

```

rhythm =
#(define-music-function (p) (ly:pitch?)
  "Make the rhythm in Mars (the Planets) at the given pitch"
  #{ \tuplet 3/2 { $p 8 8 8 } 4 4 8 8 4 #})

\new Staff {
  \time 5/4
  \rhythm c'
  \rhythm c''
  \rhythm g
}

```



## Creating custom key signatures

LilyPond supports custom key signatures. In this example, print for D minor with an extended range of printed flats.

```

\new Staff \with {
  \override StaffSymbol.line-count = #8
  \override KeySignature.flat-positions = #'((-7 . 6))
  \override KeyCancellation.flat-positions = #'((-7 . 6))
  % presumably sharps are also printed in both octaves
  \override KeySignature.sharp-positions = #'((-6 . 7))
}

```



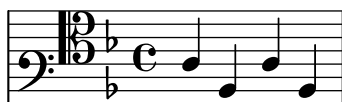
```

\override KeyCancellation.sharp-positions = #'((-6 . 7))

\override Clef.stencil = #
(lambda (grob)(grob-interpret-markup grob
#{ \markup\combine
  \musicglyph "clefs.C"
  \translate #'(-3 . -2)
  \musicglyph "clefs.F"
#})))
clefPosition = #3
middleCPosition = #3
middleCClefPosition = #3
}

{
  \key d\minor
  f bes, f bes,
}

```



## Direction of merged 'fa' shape note heads

Using property `NoteCollision.fa-merge-direction`, the direction of „fa“ shape note heads („fa“, „faThin“, etc.) can be controlled independently of the stem direction if two voices with the same pitch and different stem directions are merged. If this property is not set, the „down“ glyph variant is used.

```

{
  \clef bass

  << { \aikenHeads
    f2
    \override Staff.NoteCollision.fa-merge-direction = #UP
    f2 }
  \\ { \aikenHeads
    f2
    f2 }
  >>
}

```



## Force a cancellation natural before accidentals

The following example shows how to force a natural sign before an accidental.

```

\relative c' {
  \key es \major
  bes c des
  \tweak Accidental.restore-first ##t
}

```

```
eis
}
```



## Forcing a clef symbol to be displayed

When a clef sign has already been displayed and it has not been changed to a different clef, then repeating the `\clef` command will be ignored by LilyPond, since it is not a change of clef. It is possible to force the clef to be redisplayed using the command `\set Staff.forceClef = ##t`.

```
\relative c' {
  \clef treble
  c1
  \clef treble
  c1
  \set Staff.forceClef = ##t
  c1
  \clef treble
  c1
}
```



## Generating random notes

This Scheme-based snippet generates random notes. Use as

```
\randomNotes n from to dur
```

to generate *n* random notes between pitches *from* and *to*, with duration *dur*.

```
randomNotes =
#(define-music-function (n from to dur)
  (integer? ly:pitch? ly:pitch? ly:duration?)
  (let ((from-step (ly:pitch-steps from))
        (to-step (ly:pitch-steps to)))
    (make-sequential-music
     (map (lambda (_)
           (let* ((step (+ from-step
                           (random (- to-step from-step))))
                 (pitch (ly:make-pitch 0 step 0)))
             #{ $pitch $dur #}))
          (iota n))))))
```

```
\randomNotes 24 c' g' 8
```

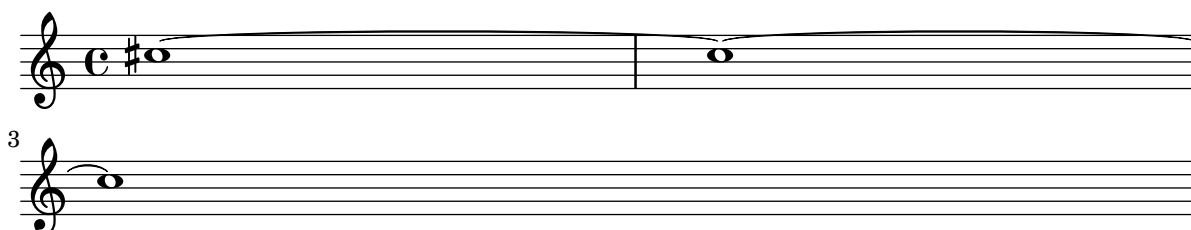


## Hiding accidentals on tied notes at the start of a new system

This shows how to hide accidentals on tied notes at the start of a new system.

```
\relative c' {
  \override Accidental.hide-tied-accidental-after-break = ##t
  cis1~ cis~
  \break
  cis
}
```

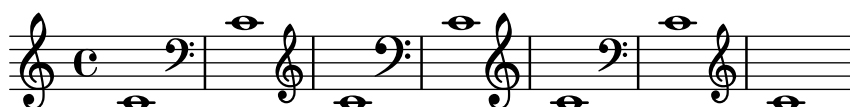
```
\paper { tagline = ##f }
```



## Keep change clefs full sized

When a clef is changed, the clef sign displayed is smaller than the initial clef. This can be overridden with full-size-change.

```
\relative c' {
  \clef "treble"
  c1
  \clef "bass"
  c1
  \clef "treble"
  c1
  \override Staff.Clef.full-size-change = ##t
  \clef "bass"
  c1
  \clef "treble"
  c1
  \revert Staff.Clef.full-size-change
  \clef "bass"
  c1
  \clef "treble"
  c1
}
```



## Makam-Beispiel

Makam ist eine türkische Melodie, in der 1/9-Tonabstände eingesetzt werden. Sehen Sie sich die Initialisierungsdatei `makam.ly` für weitere Information zu Tonhöhenbezeichnungen und Alterationen an (siehe Handbuch zum Lernen 2.25.12, 4.6.3 Weitere Information zu Hinweisen, wo diese Datei gespeichert ist).

```
% Initialize makam settings
```

```
\include "makam.ly"

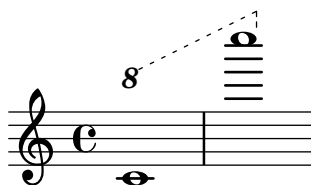
\relative c' {
  \set Staff.keyAlterations = #`((6 . ,(- KOMA)) (3 . ,BAKIYE))
  c4 cc db fk
  gbm4 gfc gfb efk
  fk4 db cc c
}
```



## Modifying the Ottava spanner slope

It is possible to change the slope of the Ottava spanner.

```
\relative c' {
  \override Staff.OttavaBracket.stencil = #ly:line-spanner::print
  \override Staff.OttavaBracket.bound-details =
    #`((left . ((Y . 0)
      (attach-dir . ,LEFT)
      (padding . 0)
      (stencil-align-dir-y . ,CENTER)))
      (right . ((Y . 5.0) ; Change the number here
        (padding . 0)
        (attach-dir . ,RIGHT)
        (text . ,(make-draw-dashed-line-markup
          (cons 0 -1.2))))))
  \override Staff.OttavaBracket.left-bound-info =
    #ly:horizontal-line-spanner::calc-left-bound-info-and-text
  \override Staff.OttavaBracket.right-bound-info =
    #ly:horizontal-line-spanner::calc-right-bound-info
  \ottava 1
  c1
  c''1
}
```



## Untypische Tonarten

Der üblicherweise benutzte \key-Befehl setzt die keySignature-Eigenschaft im Staff-Kontext.

Um untypische Tonartenvorzeichen zu erstellen, muss man diese Eigenschaft direkt setzen. Das Format für den Befehl ist eine Liste: \set Staff.keySignature = #`(((Oktave . Schritt) . Alteration) ((Oktave . Schritt) . Alteration) ...) wobei für jedes Element in der Liste Oktave die Oktave angibt (0 ist die Oktave vom eingestrichenen C bis zum eingestrichenen H), Schritt gibt die Note innerhalb der Oktave an (0 heißt C und 6 heißt H), und Alteration ist ,SHARP ,FLAT ,DOUBLE-SHARP usw. (Beachte das beginnende Komma.)

Alternativ kann auch jedes Element der Liste mit dem allgemeineren Format (Schritt . Alteration) gesetzt werden, wobei dann die Einstellungen für alle Oktaven gelten.

Hier ein Beispiel einer möglichen Tonart für eine Ganztonleiter:

```
\include "arabic.ly"
\relative do' {
  \set Staff.keyAlterations = #`((0 . ,SEMI-FLAT)
    (1 . ,SEMI-FLAT)
    (2 . ,FLAT)
    (5 . ,FLAT)
    (6 . ,SEMI-FLAT))

  %\set Staff.extraNatural = ##f
  re reb \dwn reb resd
  dod dob dosd \dwn dob |
  dobsb dodsd do do |
}
```



## Numbers as easy note heads

Easy notation note heads use the `note-names` property of the `NoteHead` object to determine what appears inside the note head. By overriding this property, it is possible to print numbers representing the scale-degree.

A simple engraver can be created to do this for every note head object it sees.

```

#(define Ez_numbers_engraver
  (make-engraver
    (acknowledgers
      ((note-head-interface engraver grob source-engraver)
        (let* ((context (ly:translator-context engraver))
              (tonic-pitch (ly:context-property context 'tonic))
              (tonic-name (ly:pitch-notename tonic-pitch))
              (grob-pitch
                (ly:event-property (event-cause grob) 'pitch))
              (grob-name (ly:pitch-notename grob-pitch))
              (delta (modulo (- grob-name tonic-name) 7)))
          (note-names
            (make-vector 7 (number->string (1+ delta)))))))
      ((ly:grob-set-property! grob 'note-names note-names))))))

#(set-global-staff-size 26)

\paper { tagline = ##f }

\layout {
  ragged-right = ##t
  \context {
    \Voice
    \consists \Ez_numbers_engraver
  }
}

```

```

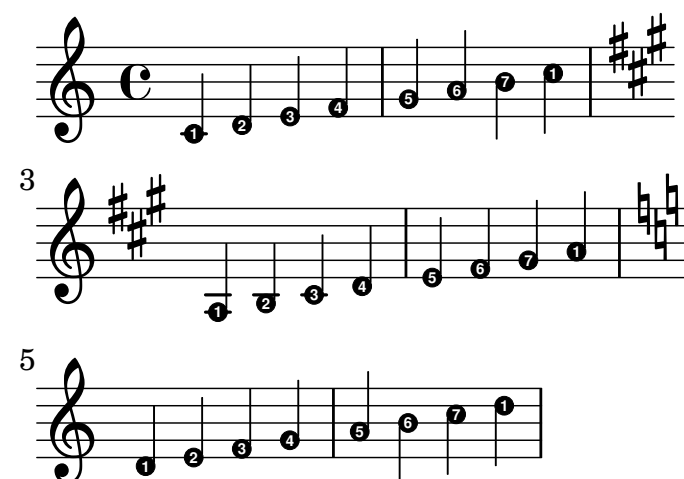
}
}

\relative c' {
  \easyHeadsOn
  c4 d e f
  g4 a b c \break

  \key a \major
  a,4 b cis d
  e4 fis gis a \break

  \key d \dorian
  d,4 e f g
  a4 b c d
}

```



## Orchester, Chor und Klavier

Diese Vorlage zeigt die Benutzung von geschachtelten `StaffGroup`- und `GrandStaff`-Kontexte, um Instrumente in Untergruppen zu unterteilen, und die Benutzung von `\transpose` für transponierende Instrumente. Alle Noten werden in C geschrieben. Noten können in C eingegeben werden, oder auch in der Tonart des Instrumentes: dann müssen sie zuerst nach C transponiert werden, bevor sie einer Variable zugewiesen werden.

```
#(set-global-staff-size 17)
```

```

\paper {
  indent = 3.0\cm % add space for instrumentName
  short-indent = 1.5\cm % add less space for shortInstrumentName
}

```

```
\header { tagline = ##f }
```

```
fluteMusic = \relative c' { \key g \major g'1 b }
```

```

% Pitches as written on a manuscript for Clarinet in A
% are transposed to concert pitch.

```

```

clarinetMusic = \transpose c' a
  \relative c'' { \key bes \major bes1 d }

trumpetMusic = \relative c { \key g \major g'1 b }

% Key signature is often omitted for horns

hornMusic = \transpose c' f
  \relative c { d'1 fis }

percussionMusic = \relative c { \key g \major g1 b }

sopranoMusic = \relative c'' { \key g \major g'1 b }

sopranoLyrics = \lyricmode { Lyr -- ics }

altoIMusic = \relative c' { \key g \major g'1 b }

altoIIMusic = \relative c' { \key g \major g'1 b }

altoILyrics = \sopranoLyrics

altoIIILyrics = \lyricmode { Ah -- ah }

tenorMusic = \relative c' { \clef "treble_8" \key g \major g1 b }

tenorLyrics = \sopranoLyrics

pianoRHMus = \relative c { \key g \major g'1 b }

pianoLHMus = \relative c { \clef bass \key g \major g1 b }

violinIMusic = \relative c' { \key g \major g'1 b }

violinIIMusic = \relative c' { \key g \major g'1 b }

violaMusic = \relative c { \clef alto \key g \major g'1 b }

celloMusic = \relative c { \clef bass \key g \major g1 b }

bassMusic = \relative c { \clef "bass_8" \key g \major g,1 b }

\score {
  <<
    \new StaffGroup = "StaffGroup_woodwinds" <<
      \new Staff = "Staff_flute" \with { instrumentName = "Flute" }
      \fluteMusic

      \new Staff = "Staff_clarinet" \with {
        instrumentName = \markup { \concat { "Clarinet in B" \flat } }
      }
  }

```

```

% Declare that written Middle C in the music
% to follow sounds a concert B flat, for
% output using sounded pitches such as MIDI.
%\transposition bes

% Print music for a B-flat clarinet
\transpose bes c' \clarinetMusic
>>

\new StaffGroup = "StaffGroup_brass" <<
  \new Staff = "Staff_hornI" \with { instrumentName = "Horn in F" }
  % \transposition f
  \transpose f c' \hornMusic

  \new Staff = "Staff_trumpet" \with { instrumentName = "Trumpet in C" }
  \trumpetMusic

>>

\new RhythmicStaff = "RhythmicStaff_percussion"
\with { instrumentName = "Percussion" }
<<
  \percussionMusic
>>

\new PianoStaff \with { instrumentName = "Piano" }
<<
  \new Staff { \pianoRHMusical }
  \new Staff { \pianoLHMusical }
>>

\new ChoirStaff = "ChoirStaff_choir" <<
  \new Staff = "Staff_soprano" \with { instrumentName = "Soprano" }
  \new Voice = "soprano"
  \sopranoMusical

  \new Lyrics \lyricsto "soprano" { \sopranoLyrics }
  \new GrandStaff = "GrandStaff_altoI"
  \with { \accepts Lyrics } <<
    \new Staff = "Staff_altoI" \with { instrumentName = "Alto I" }
    \new Voice = "altoI"
    \altoIMusical

    \new Lyrics \lyricsto "altoI" { \altoILyrics }
    \new Staff = "Staff_altoII" \with { instrumentName = "Alto II" }
    \new Voice = "altoII"
    \altoIIMusical

    \new Lyrics \lyricsto "altoII" { \altoIIILyrics }
  >>

  \new Staff = "Staff_tenor" \with { instrumentName = "Tenor" }
  \new Voice = "tenor"
  \tenorMusical

```



```
\new Lyrics \lyricsto "tenor" { \tenorLyrics }
>>
\new StaffGroup = "StaffGroup_strings" <<
  \new GrandStaff = "GrandStaff_violins" <<
    \new Staff = "Staff_violinI" \with { instrumentName = "Violin I" }
    \violinIMusic

    \new Staff = "Staff_violinII" \with { instrumentName = "Violin II" }
    \violinIIMusic
  >>

  \new Staff = "Staff_viola" \with { instrumentName = "Viola" }
  \violaMusic

  \new Staff = "Staff_cello" \with { instrumentName = "Cello" }
  \celloMusic

  \new Staff = "Staff_bass" \with { instrumentName = "Double Bass" }
  \bassMusic
>>
>>
\layout { }
}
```

Flute

Clarinet in B $\flat$

Horn in F

Trumpet in C

Percussion

Piano

Soprano

Alto I

Alto II

Tenor

Violin I

Violin II

Viola

Cello

Double Bass

Verhindern, dass zusätzliche Auflösungszeichen automatisch

hinzugefügt werden

Den traditionellen Notensatzregeln zufolge wird ein Auflösungszeichen immer dann vor einem Kreuz oder B gesetzt, wenn ein vorheriges Versetzungszeichen der gleichen Note aufgehoben werden soll. Um dieses Verhalten zu ändern, muss die Eigenschaft `extraNatural` im `Staff`-Kontext auf "false" gesetzt werden.

```
\relative c'' {
  aeses4 aes ais a
  \set Staff.extraNatural = ##f
  aeses4 aes ais a
}
```

## Auflösungszeichen nicht setzen, wenn die Tonart wechselt

Wenn die Tonart wechselt, werden automatisch Auflösungszeichen ausgegeben, um Versetzungszeichen der vorherigen Tonart aufzulösen. Das kann verhindert werden, indem die `printKeyCancellation`-Eigenschaft im `Staff`-Kontext auf "false" gesetzt wird.

```
\relative c' {
  \key d \major
  a4 b cis d
  \key g \minor
  a4 bes c d
  \set Staff.printKeyCancellation = ##f
  \key d \major
  a4 b cis d
  \key g \minor
  a4 bes c d
}
```



## Eine Stimme mit Transposition zitieren

Zitate berücksichtigen sowohl die Transposition der Quelle als auch des Zielinstruments. In diesem Beispiel spielen alle Instrumente klingendes C, das Zielinstrument ist in F. Die Noten für das Zielinstrument können mit `\transpose` transponiert werden, in diesem Fall werden alle Noten (auch die zitierten) transponiert.

```
\addQuote clarinet {
  \transposition bes
  \repeat unfold 8 { d'16 d' d'8 }
}
```

```
\addQuote sax {
  \transposition es'
  \repeat unfold 16 { a8 }
}
```

```
quoteTest = {
  % french horn
  \transposition f
  g'4
  << \quoteDuring "clarinet" { \skip 4 } s4^"clar." >>
  << \quoteDuring "sax" { \skip 4 } s4^"sax." >>
  g'4
}
```

```
{
  \new Staff \with {
    instrumentName = \markup { \column { Horn "in F" } }
  }
  \quoteTest
  \transpose c' d' << \quoteTest s4_"up a tone" >>
```

}



## Separating key cancellations from key signature changes

By default, the accidentals used for key cancellations are placed adjacent to those for key signature changes. This behavior can be changed by overriding the `break-align-orders` property of the `BreakAlignment` grob.

The value of `break-align-orders` is a vector of length 3, with quoted lists of breakable items as elements. Each list describes the default order of prefatory matter at the end, in the middle, and at the beginning of a line, respectively. We are only interested in changing the behaviour in the middle of a line.

If you look up the definition of `break-align-orders` in LilyPond's Internal Reference (see the `BreakAlignment` (<https://lilypond.org/doc/v2.22/Documentation/internals/breakalignment>) grob), you get the following order in the second element:

```
...
staff-bar
key-cancellation
key-signature
...
```

We want to change that, moving `key-cancellation` before `staff-bar`. To make this happen we use the `grob-transformer` function, which gives us access to the original vector as the second argument of the lambda function, here called *orig* (we don't need the first argument, *grob*). We return a new vector, with unchanged first and last elements. For the middle element, we first remove `key-cancellation` from the list, then adding it again before `staff-bar`.

```
#(define (insert-before where what lst)
  (cond
    ((null? lst) ; If the list is empty,
     (list what)) ; return a single-element list.
    ((eq? where (car lst)) ; If we find symbol `where`,
     (cons what lst)) ; insert `what` before curr. position.
    (else ; Otherwise keep building the list by
     (cons (car lst) ; adding the current element and
           (insert-before where what (cdr lst))))))

cancellationFirst =
\override Score.BreakAlignment.break-align-orders =
#(grob-transformer
 'break-align-orders
 (lambda (grob orig)
  (let* ((middle (vector-ref orig 1))
         (middle (delq 'key-cancellation middle))
         (middle (insert-before
                        'staff-bar 'key-cancellation middle)))
    (vector
     ;; end of line
     (vector-ref orig 0))
```

```

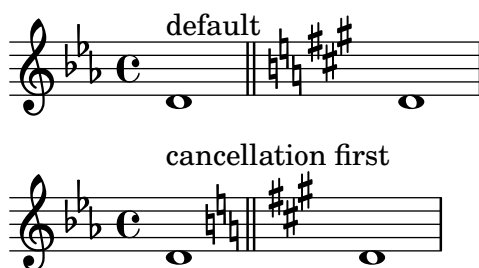
;; middle of line
middle
;; beginning of line
(vector-ref orig 2))))

music = { \key es \major d'1 \bar "||"
          \key a \major d'1 }

{ <>^\markup "default"
  \music }

{ <>^\markup "cancellation first"
  \cancellationFirst
  \music }

\paper { tagline = ##f }
```



## Noten mit minimaler Anzahl an Versetzungszeichen transponieren.

Dieses Beispiel benutzt Scheme-Code, um enharmonische Verwechslungen für Noten zu erzwingen, damit nur eine minimale Anzahl an Versetzungszeichen ausgegeben wird. In diesem Fall gelten die folgenden Regeln:

- Doppelte Versetzungszeichen sollen entfernt werden
- His -> C
- Eis -> F
- Ces -> B
- Fes -> E

Auf diese Art werden am meisten natürliche Tonhöhen als enharmonische Variante gewählt.

```

#(define (naturalize-pitch p)
  (let ((o (ly:pitch-octave p))
        (a (* 4 (ly:pitch-alteration p)))
        ;; alteration, a, in quarter tone steps,
        ;; for historical reasons
        (n (ly:pitch-notename p)))
    (cond
      ((and (> a 1) (or (eqv? n 6) (eqv? n 2)))
       (set! a (- a 2))
       (set! n (+ n 1)))
      ((and (< a -1) (or (eqv? n 0) (eqv? n 3)))
       (set! a (+ a 2))
       (set! n (- n 1))))))
```

```

(cond
  ((> a 2) (set! a (- a 4)) (set! n (+ n 1)))
  ((< a -2) (set! a (+ a 4)) (set! n (- n 1))))
(if (< n 0) (begin (set! o (- o 1)) (set! n (+ n 7))))
(if (> n 6) (begin (set! o (+ o 1)) (set! n (- n 7))))
(ly:make-pitch o n (/ a 4)))

#(define (naturalize music)
  (let ((es (ly:music-property music 'elements))
        (e (ly:music-property music 'element))
        (p (ly:music-property music 'pitch)))
    (if (pair? es)
        (ly:music-set-property!
         music 'elements
         (map naturalize es)))
    (if (ly:music? e)
        (ly:music-set-property!
         music 'element
         (naturalize e)))
    (if (ly:pitch? p)
        (begin
         (set! p (naturalize-pitch p))
         (ly:music-set-property! music 'pitch p)))
    music))

naturalizeMusic =
#(define-music-function (m)
  (ly:music?)
  (naturalize m))

music = \relative c' { c4 d e g }

\score {
  \new Staff {
    \transpose c ais { \music }
    \naturalizeMusic \transpose c ais { \music }
    \transpose c deses { \music }
    \naturalizeMusic \transpose c deses { \music }
  }
  \layout { }
}

```



## Turkish Makam example

This template uses the start of a well-known Turkish Saz Semai that is familiar in the repertoire in order to illustrate some of the elements of Turkish music notation.

`\paper { tagline = ##f }`

```
% Initialize makam settings
\include "turkish-makam.ly"

\header {
  title = "Hüseyni Saz Semaisi"
  composer = "Lavtac1 Andon"
}

\relative {
  \set Staff.extraNatural = ##f
  \set Staff.autoBeaming = ##f

  \key a \huseyni
  \time 10/8

  a'4 g'16 [fb] e8. [d16] d [c d e] c [d c8] bfc |
  a16 [bfc a8] bfc c16 [d c8] d16 [e d8] e4 fb8 |
  d4 a'8 a16 [g fb e] fb8 [g] a8. [b16] a16 [g] |
  g4 g16 [fb] fb8. [e16] e [g fb e] e4 r8 |
}
```

## Hüseyni Saz Semaisi

Lavtac1 Andon



### Eigenschaften des Schlüssels optimieren

Der Befehl `\clef "treble_8"` ist gleichbedeutend mit einem expliziten Setzen der Eigenschaften von `clefGlyph`, `clefPosition` (welche die vertikale Position des Schlüssels bestimmt), `middleCPosition` und `clefTransposition`. Ein Schlüssel wird ausgegeben, wenn eine der Eigenschaften außer `middleCPosition` sich ändert.

Eine Änderung des Schriftzeichens (Glyph), der Schlüsselposition oder der Oktavierung selber ändert noch nicht die Position der darauf folgenden Noten auf dem System: das geschieht nur, wenn auch die Position des eingestrichenen C (`middleCPosition`) angegeben wird. Die Positionsparameter sind relativ zur Mittellinie des Systems, dabei versetzen positive Zahlen die Position nach oben, jeweils eine Zahl für jede Linie plus Zwischenraum. Der `clefTransposition`-Wert ist normalerweise auf 7, -7, 15 oder -15 gesetzt, aber auch andere Werte sind gültig.

Wenn ein Schlüsselwechsel an einem Zeilenwechsel geschieht, wird das neue Symbol sowohl am Ende der alten Zeilen als auch am Anfang der neuen Zeile ausgegeben. Wenn der Warnungs-Schlüssel am Ende der alten Zeile nicht erforderlich ist, kann er unterdrückt werden, indem die `explicitClefVisibility`-Eigenschaft des `Staff`-Kontextes auf den Wert `end-of-line-invisible` gesetzt wird. Das Standardverhalten kann mit `\unset Staff.explicitClefVisibility` wieder hergestellt werden.

Die folgenden Beispiele zeigen die Möglichkeiten, wenn man diese Eigenschaften manuell setzt. Auf der ersten Zeile erhalten die manuellen Änderungen die ursprüngliche relative Positionierung von Schlüssel und Noten, auf der zweiten Zeile nicht.

```

{
  % The default treble clef
  \key f \major
  c'1
  % The standard bass clef
  \set Staff.clefGlyph = "clefs.F"
  \set Staff.clefPosition = 2
  \set Staff.middleCPosition = 6
  \set Staff.middleCClefPosition = 6
  \key g \major
  c'1
  % The baritone clef
  \set Staff.clefGlyph = "clefs.C"
  \set Staff.clefPosition = 4
  \set Staff.middleCPosition = 4
  \set Staff.middleCClefPosition = 4
  \key f \major
  c'1
  % The standard choral tenor clef
  \set Staff.clefGlyph = "clefs.G"
  \set Staff.clefPosition = -2
  \set Staff.clefTransposition = -7
  \set Staff.middleCPosition = 1
  \set Staff.middleCClefPosition = 1
  \key f \major
  c'1
  % A non-standard clef
  \set Staff.clefPosition = 0
  \set Staff.clefTransposition = 0
  \set Staff.middleCPosition = -4
  \set Staff.middleCClefPosition = -4
  \key g \major
  c'1 \break

  % The following clef changes do not preserve
  % the normal relationship between notes, key signatures
  % and clefs:

  \set Staff.clefGlyph = "clefs.F"
  \set Staff.clefPosition = 2
  c'1
  \set Staff.clefGlyph = "clefs.G"
  c'1
  \set Staff.clefGlyph = "clefs.C"
  c'1
  \set Staff.clefTransposition = 7
  c'1
  \set Staff.clefTransposition = 0
  \set Staff.clefPosition = 0
  c'1

  % Return to the normal clef:

```



```
\set Staff.middleCPosition = 0
c'1
}
```

```
\paper { tagline = ##f }
```

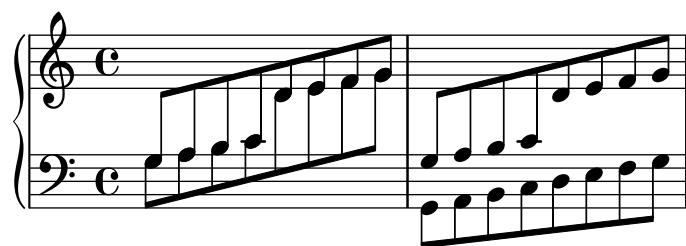


## Using autochange with more than one voice

Using autochange with more than one voice.

```
\score {
  \new PianoStaff
  <<
    \new Staff = "up" {
      <<
        \set Timing.beamExceptions = #'()
        \set Timing.beatStructure = #'(4)
        \new Voice {
          \voiceOne
          \autoChange
          \relative c' {
            g8 a b c d e f g
            g,,8 a b c d e f g
          }
        }

        \new Voice {
          \voiceTwo
          \autoChange
          \relative c' {
            g8 a b c d e f g
            g,,8 a b c d e f g
          }
        }
      >>
    }
  >>
}
```



# Rhythms

Abschnitt “Rhythms” in *Notationsreferenz*

## Adding beams, slurs, ties etc. when using tuplet and non-tuplet rhythms

LilyPond syntax can involve many unusual placements for parentheses, brackets etc., which might sometimes have to be interleaved.

For example, when entering a manual beam, the left square bracket has to be placed *after* the starting note and its duration, not before. Similarly, the right square bracket should directly follow the note which is to be at the end of the requested beaming, even if this note happens to be inside a tuplet section.

This snippet demonstrates how to combine manual beaming, manual slurs, ties and phrasing slurs with tuplet sections (enclosed within curly braces).

```
{
  r16[ g16 \tuplet 3/2 { r16 e'8] }
  g16( a \tuplet 3/2 { b d e' ) }
  g8[( a \tuplet 3/2 { b d' ) e'] ~ }
  \time 2/4
  \tuplet 5/4 { e'32\ ( a b d' e' } a'4.\ )
}
```



## Adding drum parts

Using the powerful pre-configured tools such as the `\drummode` function and the `DrumStaff` context, inputting drum parts is quite easy: drums are placed at their own staff positions (with a special clef symbol) and have note heads according to the drum. Attaching an extra symbol to the drum or restricting the number of lines is possible.

```
drh = \drummode {
  cymc4.^"crash" hhc16^"h.h." hh hhc8 hho hhc8 hh16 hh
  hhc4 r4 r2
}
drl = \drummode {
  bd4 sn8 bd bd4 << bd ss >>
  bd8 tommh tommh bd toml toml bd tomfh16 tomfh
}
timb = \drummode {
  timh4 ssh timl8 ssh r timh r4
  ssh8 timl r4 cb8 cb
}

\score {
  <<
  \new DrumStaff \with {
    instrumentName = "timbales"
```

```

    drumStyleTable = #timbales-style
    \override StaffSymbol.line-count = #2
    \override BarLine.bar-extent = #'(-1 . 1)
  }
  <<
    \timb
  >>
  \new DrumStaff \with { instrumentName = "drums" }
  <<
    \new DrumVoice { \stemUp \drh }
    \new DrumVoice { \stemDown \drl }
  >>
  >>
  \layout { }
  \midi { \tempo 4 = 120 }
}

```

## Adjusting grace note spacing

The space given to grace notes can be adjusted using the spacing-increment property of `Score.GraceSpacing`.

```

graceNotes = {
  \grace { c4 c8 c16 c32 }
  c8
}

\relative c' {
  c8
  \graceNotes
  \override Score.GraceSpacing.spacing-increment = #2.0
  \graceNotes
  \revert Score.GraceSpacing.spacing-increment
  \graceNotes
}

```

## Taktnummern ausrichten

Taktnummern sind standardmäßig links an ihrem Ursprungsobjekt ausgerichtet. Das ist normalerweise die linke Ecke einer Linie oder, wenn die Nummern innerhalb einer Zeile gesetzt werden, auf der linken Seite eines Taktstrichs. Die Nummern können auch direkt über dem Taktstrich positioniert werden oder rechts vom Taktstrich gesetzt werden.

```

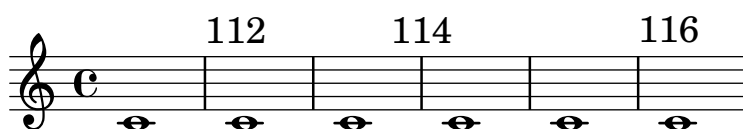
\relative c' {

```

```

\set Score.currentBarNumber = 111
\override Score.BarNumber.break-visibility = #all-visible
% Increase the size of the bar number by 2
\override Score.BarNumber.font-size = 2
% Print a bar number every second measure
\set Score.barNumberVisibility = #(every-nth-bar-number-visible 2)
c1 | c1
% Center-align bar numbers
\override Score.BarNumber.self-alignment-X = #CENTER
c1 | c1
% Left-align bar numbers
\override Score.BarNumber.self-alignment-X = #LEFT
c1 | c1
}

```



## Alternative breve notes

Breve notes are also available with two vertical lines on each side of the notehead instead of one line and in baroque style.

```

\relative c'' {
  \time 4/2
  c\breve |
  \override Staff.NoteHead.style = #'altdefault
  b\breve
  \override Staff.NoteHead.style = #'baroque
  b\breve
  \revert Staff.NoteHead.style
  a\breve
}

```



## Appoggiatura or grace note before a bar line

By default, appoggiaturas and grace notes that occur on the first beat of a measure are printed after the bar line. They can however be printed before, simply by adding an invisible BarLine and then the visible one, as demonstrated here.

```

{
  R1
  %% default
  \appoggiatura d''8 c''4 r2.
  %% cheated
  \appoggiatura { \bar "" d''8 \bar "|" } c''4 r2.
}

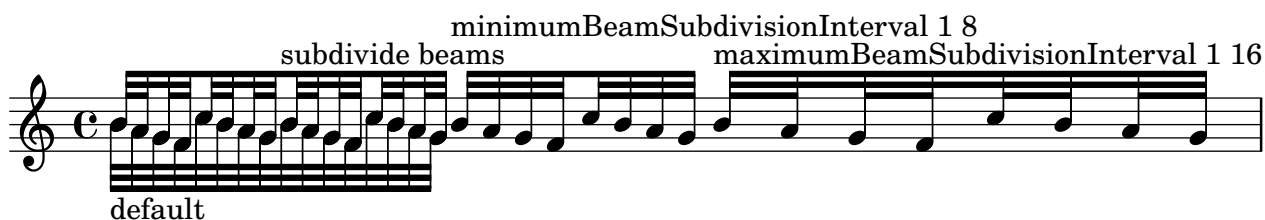
```



## Automatic beam subdivisions

Beams can be subdivided automatically. By setting the property `subdivideBeams`, beams are subdivided whenever possible. The intervals and depth of subdivision can be limited with properties `minimumBeamSubdivisionInterval` and `maximumBeamSubdivisionInterval` respectively.

```
\new Staff {
  \relative c'' {
    <<
    {
      \voiceOne
      \set subdivideBeams = ##t
      b32[ a g f c' b a g
      b32^"subdivide beams" a g f c' b a g]
    }
    \new Voice {
      \voiceTwo
      b32_"default"[ a g f c' b a g
      b32 a g f c' b a g]
    }
    >>
    \oneVoice
    \once \set minimumBeamSubdivisionInterval = \musicLength 8
    b32^"minimumBeamSubdivisionInterval 1 8"[ a g f c' b a g]
    \once \set maximumBeamSubdivisionInterval = \musicLength 16
    b32^"maximumBeamSubdivisionInterval 1 16"[ a g f c' b a g]
  }
}
```



## Automatically change durations

`shiftDurations` can be used to change the note lengths of a piece of music.

It takes two arguments – the scaling factor as a power of two, and the number of dots to be added as a positive integer.

```
\paper {
  indent = 0
  tagline = ##f
}

music = \relative c'' { a1 b2 c4 d8 r }
```

```

\time 4/2
\music
\time 4/4
\shiftDurations 1 0 \music
\time 2/4
\shiftDurations 2 0 \music
\time 4/1
\shiftDurations -1 0 \music
\time 8/1
\shiftDurations -2 0 \music
\time 6/2
\shiftDurations 0 1 \music
\time 7/2
\shiftDurations 0 2 \music
}

```



## Balkenenden auf Score-Ebene

Balkenenderegeln, die im Score-Kontext definiert werden, wirken sich auf alle Systeme aus, können aber auf Staff- und Voice-Ebene neu verändert werden:

```

\relative c'' {
  \time 5/4
  % Set default beaming for all staves
  \set Score.baseMoment = \musicLength 8
  \set Score.beatStructure = 3,4,3
  <<
    \new Staff {
      c8 c c c c c c c c c
    }
    \new Staff {
      % Modify beaming for just this staff
      \set Staff.beatStructure = 6,4
      c8 c c c c c c c c c
    }
    \new Staff {
      % Inherit beaming from Score context
      <<
        {
          \voiceOne
          c8 c c c c c c c c c
        }
      }
  }
}

```

```

% Modify beaming for this voice only
\new Voice {
  \voiceTwo
  \set Voice.beatStructure = 6,4
  a8 a a a a a a a a
}
>>
}
>>
}

```



## Balken über Zeilenumbrüche

Zeilenumbrüche sind normalerweise während Balken verboten. Das kann geändert werden.

```

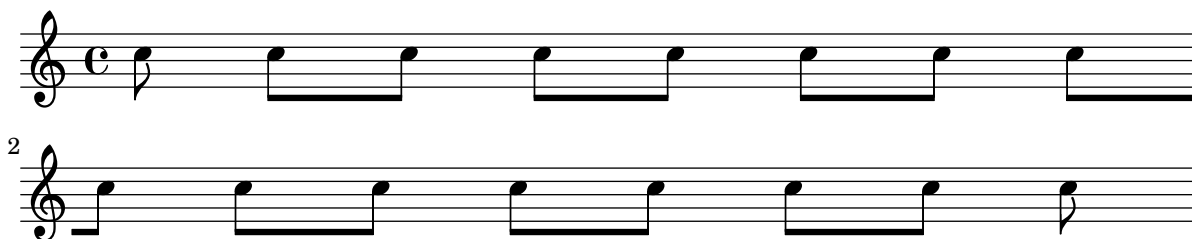
\relative c' {
  \override Beam.breakable = ##t
  c8 c[ c] c[ c] c[ c] c[ \break
  c8] c[ c] c[ c] c[ c] c
}

```

```

\paper { tagline = ##f }

```



## Balken für weit auseinander liegende Noten ändern

Balken mit Hälsen in unterschiedliche Richtungen werden automatisch erstellt, wenn ein großer Sprung zwischen Tonhöhen gefunden wird. Dieses Verhalten kann durch die `auto-knee-gap`-Eigenschaft beeinflusst werden. Ein derartiger Knie-Balken wird erstellt, wenn der Abstand größer ist als der Wert von `auto-knee-gap` plus der Dicke des Balkens (was von der Notendauer und der Neigung des Balkens abhängt). Der Standardwert von `auto-knee-gap` ist 5.5 Notensystemabstände.

```

{
  f8 f''8 f8 f''8
  \override Beam.auto-knee-gap = 6
  f8 f''8 f8 f''8
}

```



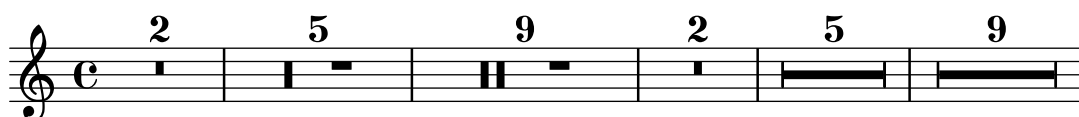
}



## Die Erscheinung von Pausentakten ändern

Wenn zehn oder weniger Pausentakten vorkommen, wird eine Reihe von Longa- und Brevispausen (auch Kirchenpausen genannt) gesetzt, bei mehr Takten wird eine Line mit der Taktanzahl ausgegeben. Der vorgegebene Wert von zehn kann geändert werden, indem man die `expand-limit`-Eigenschaft setzt:

```
\relative c' {
  \compressMMRests {
    R1*2 | R1*5 | R1*9
    \override MultiMeasureRest.expand-limit = 3
    R1*2 | R1*5 | R1*9
  }
}
```



## Changing the number of augmentation dots per note

The number of augmentation dots on a single note can be changed independently of the dots placed after the note.

```
\relative c' {
  c4.. a16 r2 |
  \override Dots.dot-count = 4
  c4.. a16 r2 |
  \override Dots.dot-count = 0
  c4.. a16 r2 |
  \revert Dots.dot-count
  c4.. a16 r2 |
}
```



## Das Tempo ohne Metronom-Angabe verändern

Um das Tempo für die MIDI-Ausgabe zu ändern, ohne eine Tempoangabe in den Noten auszugeben, kann die Metronombezeichnung unsichtbar gemacht werden:

```
\score {
  \new Staff \relative c' {
    \tempo 4 = 160
    c4 e g b
    c4 b d c
    \set Score.tempoHideNote = ##t
  }
}
```

```

\tempo 4 = 96
d,4 fis a cis
d4 cis e d
}
\layout { }
\midi { }
}

```



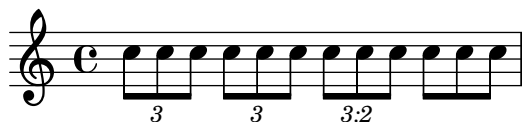
## Die Zahl der N-tolen verändern

Standardmäßig wird nur der Zähler des N-tolen-Bruchs über der Klammer dargestellt, wie er dem `\times`-Befehl übergeben wird. Man kann aber auch Zähler/Nenner ausgeben lassen, oder die Zahl vollständig unterdrücken.

```

\relative c' {
  \tuplet 3/2 { c8 c c }
  \tuplet 3/2 { c8 c c }
  \override TupletNumber.text = #tuplet-number::calc-fraction-text
  \tuplet 3/2 { c8 c c }
  \omit TupletNumber
  \tuplet 3/2 { c8 c c }
}

```



## Changing time signatures inside a polymeric section using `\scaleDurations`

The `measureLength` property, together with `measurePosition`, determines when a bar line is needed. However, when using `\scaleDurations`, the scaling of durations makes it difficult to change time signatures. In this case, `measureLength` should be set manually, using the `ly:make-moment` callback. The second argument must be the same as the second argument of `\scaleDurations`.

```

\layout {
  \context {
    \Score
    \remove "Timing_translator"
  }
  \context {
    \Staff
    \consists "Timing_translator"
  }
}

```

```

<<
\new Staff {

```

```

\scaleDurations 8/5 {
  \time 6/8
  \set Timing.measureLength = \musicLength 1*6/5
  b8 b b b b b
  \time 2/4
  \set Timing.measureLength = \musicLength 1*4/5
  b4 b
}
}
\new Staff {
  \clef bass
  \time 2/4
  c2 d e f
}
>>

```



## Psalmnotation

Diese Form der Notation wird benutzt für die Notation von Psalmen, in denen die Strophen nicht die gleiche Länge haben.

```

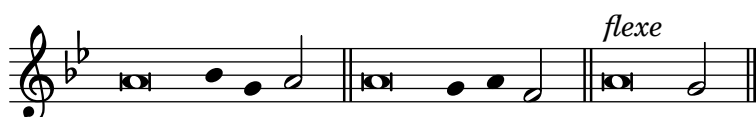
stemOff = \hide Staff.Stem
stemOn  = \undo \stemOff

```

```

\score {
  \new Staff \with { \remove "Time_signature_engraver" }
  {
    \key g \minor
    \cadenzaOn
    \stemOff a'\breve bes'4 g'4
    \stemOn a'2 \section
    \stemOff a'\breve g'4 a'4
    \stemOn f'2 \section
    \stemOff a'\breve^\markup { \italic flexe }
    \stemOn g'2 \fine
  }
}

```



## Zusammengesetzte Taktarten

Ungerade Taktarten werden (wie etwa "5/8") werden oft als zusammengesetzte Taktarten interpretiert (bspw. "3/8 + 2/8"), in welchen zwei oder mehr Teiltakte unterschieden werden.

LilyPond kann derartige Noten produzieren, indem entsprechende Taktarten gesetzt werden und die automatische Bebalkung angepasst wird.

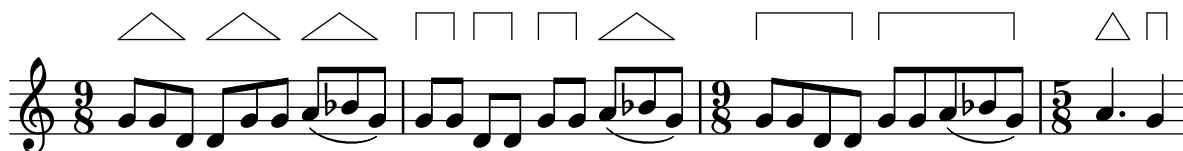
```
\relative c' {
  \compoundMeter #'((2 8) (3 8))
  c8 d e fis gis
  c8 fis, gis e d
  c8 d e4 gis8
}
```



## Dirigierzeichen, Taktgruppenzeichen

Optionen, mit denen die Balken in einem Takt gruppiert werden, sind durch die Scheme-Funktion `set-time-signature` erhältlich, die drei Argumente braucht: Die Zahl der Taktschläge, die Länge des Schlages und die interne gruppieren von Balken in dem Takt. Wenn der `Measure_grouping_engraver` hinzugefügt worden ist, erstellt diese Funktion auch `MeasureGrouping`-(Taktgruppen)-Zeichen. Derartige Zeichen erleichtern das Lesen von rhythmisch komplexer Musik. In dem Beispiel ist der 9/8-Takt in 2, 2, 2 und 3 aufgeteilt. Das wird der `set-time-signature`-Funktion als das dritte Argument mitgegeben: `'(2 2 2 3)`:

```
\score {
  \new Voice \relative c'' {
    \time 9/8
    g8 g d d g g a( bes g) |
    \set Timing.beatStructure = 2,2,2,3
    g8 g d d g g a( bes g) |
    \time 4,5 9/8
    g8 g d d g g a( bes g) |
    \time 5/8
    a4. g4 |
  }
  \layout {
    \context {
      \Staff
      \consists "Measure_grouping_engraver"
    }
  }
}
```



## Consistently left-aligned bar numbers

When left-aligning bar numbers, overlapping problems may occur with staff brackets.

The snippet solves this by keeping the first bar number right-aligned that follows a line break.

```
consistentlyLeftAlignedBarNumbers = {
  \override Score.BarNumber.break-visibility = #end-of-line-invisible
}
```

```

\override Score.BarNumber.self-alignment-X =
  #(lambda (grob)
    (let ((break-dir (ly:item-break-dir grob)))
      (if (= break-dir RIGHT) RIGHT LEFT)))
}

\new ChoirStaff <<
  \new Staff {
    \relative c' {
      \set Score.barNumberVisibility = #(every-nth-bar-number-visible 3)
      \bar ""
      \consistentlyLeftAlignedBarNumbers

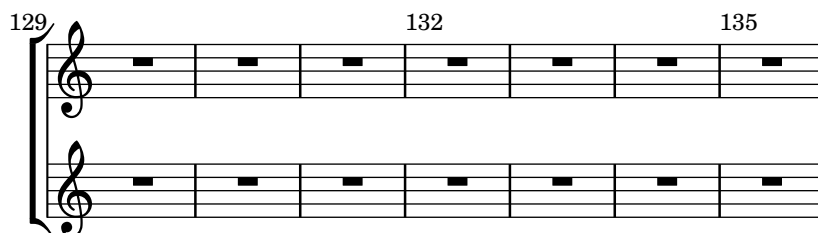
      \set Score.currentBarNumber = #112
      \repeat unfold 8 { R1 }
      \break
      \repeat unfold 9 { R1 }
      \break
      \repeat unfold 7 { R1 }
    }
  }
  \new Staff {
    \relative c' {
      \repeat unfold 24 { R1 }
    }
  }
>>

\layout {
  indent = #0
  ragged-right = ##t
  ragged-last = ##t
}

\paper { tagline = ##f }

```

The image displays two systems of musical notation, each consisting of two staves. The first system is labeled with bar numbers 114 and 117. The second system is labeled with bar numbers 120, 123, and 126. Each staff contains a series of eighth notes, with the notes in the second staff of each system being beamed together. The notation is in common time (C) and the key signature has one sharp (F#).



## Controlling tuplet bracket visibility

The default behavior of tuplet-bracket visibility is to print a bracket unless there is a beam of the same length as the tuplet.

To control the visibility of tuplet brackets, set the property `bracket-visibility` to either `#t` (always print a bracket), `if-no-beam` (only print a bracket if there is no beam) or `#f` (never print a bracket). The latter is in fact equivalent to omitting the `TupletBracket` object altogether from the printed output.

```
music = \relative c'' {
  \tuplet 3/2 { c16[ d e ] f8]
  \tuplet 3/2 { c8 d e }
  \tuplet 3/2 { c4 d e }
}

\new Voice {
  \relative c' {
    \override Score.TextMark.non-musical = ##f
    \textMark "default" \music
    \override TupletBracket.bracket-visibility = #'if-no-beam
    \textMark \markup \typewriter "'if-no-beam" \music
    \override TupletBracket.bracket-visibility = ##t
    \textMark \markup \typewriter "#t" \music
    \override TupletBracket.bracket-visibility = ##f
    \textMark \markup \typewriter "#f" \music
    \omit TupletBracket
    \textMark \markup \typewriter "omit" \music
  }
}
```

`\paper { tagline = ##f }`



## Cow and ride bell example

Two different bells, entered with `'cb'` (cowbell) and `'rb'` (ridebell).

```
\paper { tagline = ##f }
```

```
#(define mydrums '((ridebell default #f 3)
                   (cowbell default #f -2)))

\new DrumStaff \with { instrumentName = #"Different Bells" }

\drummode {
  \set DrumStaff.drumStyleTable = #(alist->hash-table mydrums)
  \set DrumStaff.clefPosition = 0.5
  \override DrumStaff.StaffSymbol.line-positions = #'(-2 3)
  \override Staff.BarLine.bar-extent = #'(-1.0 . 1.5)

  \time 2/4
  rb8 8 cb8 16 rb16-> ~ |
  16 8 16 cb8 8 |
}
```



## Eine Metronombezeichnung als Textbeschriftung erstellen

Neue Metronombezeichnungen können als Textbeschriftung erstellt werden, aber sie ändern nicht das Tempo für die MIDI-Ausgabe.

```
\relative c' {
  \tempo \markup {
    \concat {
      (
        \smaller \general-align #Y #DOWN \note {16.} #1
        " = "
        \smaller \general-align #Y #DOWN \note {8} #1
      )
    }
  }
  c1
  c4 c' c,2
}
```



## Bindebögen manuell setzen

Überbindungen können manuell gesetzt werden, indem man die `tie-configuration`-Eigenschaft des `TieColumn`-Objekts beeinflusst. Die erste Zahl zeigt den Abstand von der Mitte in Notensystemabständen an, die zweite Zahl zeigt die Richtung an (1 = nach oben, -1 = nach unten).

```
\relative c' {
  <>~"default"
  g'1 ^~ g

  <>~"0"
```

```

\once \override Tie.staff-position = 0
g1 ^~ g

<>^"0.0"
\once \override Tie.staff-position = 0.0
g1 ^~ g

<>^"reset"
\revert Tie.staff-position
g1 ^~ g
}

\relative c' {
  \override TextScript.outside-staff-priority = ##f
  \override TextScript.padding = 0

  <>^"default"
  <c e g>1~ <c e g>

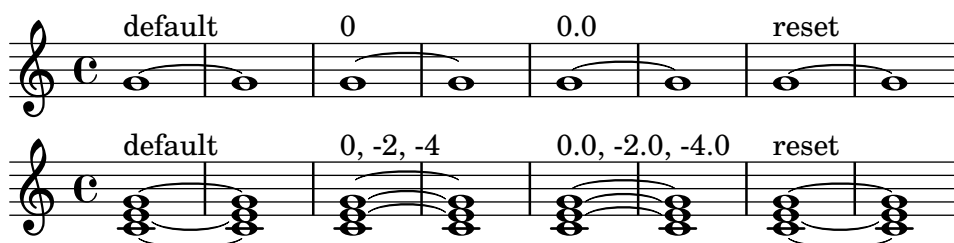
  <>^"0, -2, -4"
  \override TieColumn.tie-configuration =
    #'((0 . 1) (-2 . 1) (-4 . 1))
  <c e g>1~ <c e g>

  <>^"0.0, -2.0, -4.0"
  \override TieColumn.tie-configuration =
    #'((0.0 . 1) (-2.0 . 1) (-4.0 . 1))
  <c e g>1~ <c e g>

  <>^"reset"
  \override TieColumn.tie-configuration = ##f
  <c e g>1~ <c e g>
}

```

```
\paper { tagline = ##f }
```



## Engraving tremolos with floating beams

If a tremolo's total duration is less than a quarter-note, or exactly a half-note, or between a half-note and a whole-note, it is normally typeset with all beams touching the stems. Certain engraving styles typeset some of these beams as centered floating beams that do not touch the stems. The number of floating beams in this type of tremolo is controlled with the 'gap-count property of the Beam object, and the size of the gaps between beams and stems is set with the 'gap property.

```
\relative c' {
```



```

\repeat tremolo 8 { a32 f }
\override Beam.gap-count = #1
\repeat tremolo 8 { a32 f }
\override Beam.gap-count = #2
\repeat tremolo 8 { a32 f }
\override Beam.gap-count = #3
\repeat tremolo 8 { a32 f }

\override Beam.gap-count = #3
\override Beam.gap = #1.33
\repeat tremolo 8 { a32 f }
\override Beam.gap = #1
\repeat tremolo 8 { a32 f }
\override Beam.gap = #0.67
\repeat tremolo 8 { a32 f }
\override Beam.gap = #0.33
\repeat tremolo 8 { a32 f }
}

```



## Entering several tuplets using only one \tuplet command

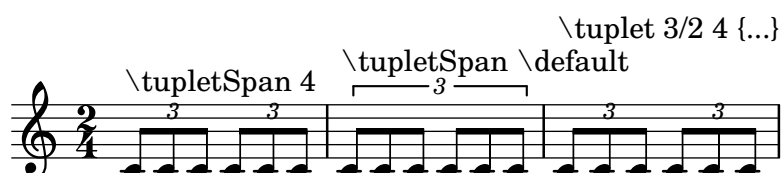
The property `tupletSpannerDuration` sets how long each of the tuplets contained within the brackets after `\tuplet` should last. Many consecutive tuplets can then be placed within a single `\tuplet` expression, thus saving typing.

There are several ways to set `tupletSpannerDuration`. The command `\tupletSpan` sets it to a given duration, and clears it when instead of a duration `\default` is specified. Another way is to use an optional argument with `\tuplet`.

```

\relative c' {
  \time 2/4
  \tupletSpan 4
  \tuplet 3/2 { c8~"\tupletSpan 4" c c c c c }
  \tupletSpan \default
  \tuplet 3/2 { c8~"\tupletSpan \default" c c c c c }
  \tuplet 3/2 4 { c8~"\tuplet 3/2 4 {...}" c c c c c }
}

```



## Gerade Fähnchen und überstehende Balkenenden

Gerade Fähnchen an einzelnen Noten und überstehende Balkenenden bei bebalkten Notengruppen sind möglich mit einer Kombination aus `stemLeftBeamCount`, `stemRightBeamCount` und Paaren von `[]`-Balkenbegrenzungen.

Für gerade Fähnchen, die nach rechts zeigen, kann `[]` eingesetzt werden und `stemLeftBeamCount` auf Null gesetzt werden (wie Bsp. 1).

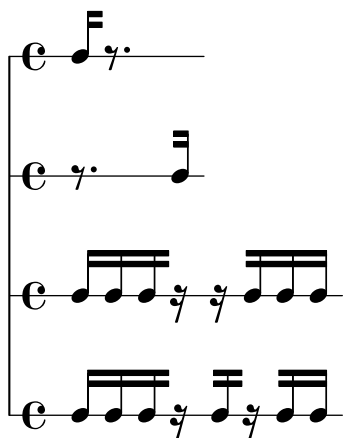
Für gerade Fähnchen, die nach links zeigen, muss `stemRightBeamCount` eingesetzt werden (Bsp. 2).

Für überstehende Balkenenden nach rechts muss `stemRightBeamCount` auf einen positiven Wert gesetzt werden, für Balkenenden, die nach links zeigen benutzt man `stemLeftBeamCount` (Bsp. 3).

Manchmal können einzelne Noten, die von Pausen umgeben sind, auch Balkenenden in beide Richtungen tragen. Das geschieht mit `[]`-Klammern (Bsp. 4).

(`\set stemLeftBeamCount` entspricht immer dem Befehl `\once \set`. Anders gesagt müssen die Einstellungen immer wieder wiederholt werden und die Fähnchen des letzten Sechzehntels im letzten Beispiel haben nichts mit dem `\set`-Befehl zwei Noten vorher zu tun.)

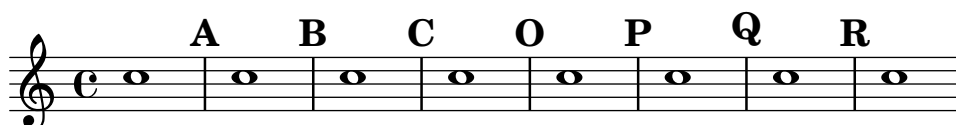
```
\score {
  <<
    % Example 1
    \new RhythmicStaff {
      \set stemLeftBeamCount = 0
      c16[]
      r8.
    }
    % Example 2
    \new RhythmicStaff {
      r8.
      \set stemRightBeamCount = 0
      16[]
    }
    % Example 3
    \new RhythmicStaff {
      16 16
      \set stemRightBeamCount = 2
      16 r r
      \set stemLeftBeamCount = 2
      16 16 16
    }
    % Example 4
    \new RhythmicStaff {
      16 16
      \set stemRightBeamCount = 2
      16 r16
      16[]
      r16
      \set stemLeftBeamCount = 2
      16 16
    }
  >>
}
```



## Forcing rehearsal marks to start from a given letter or number

This snippet demonstrates how to obtain automatic ordered rehearsal marks, but from the letter or number desired.

```
\relative c' {
  c1 \mark \default
  c1 \mark \default
  c1 \mark \default
  c1 \mark #14
  c1 \mark \default
  c1 \mark \default
  c1 \mark \default
  c1
}
```



## Generating custom flags

The stencil property of the Flag grob can be set to a custom scheme function to generate the glyph for the flag.

```
#(define-public (weight-flag grob)
  (let* ((stem-grob (ly:grob-parent grob X))
         (log (- (ly:grob-property stem-grob 'duration-log) 2))
         (is-up? (eqv? (ly:grob-property stem-grob 'direction) UP))
         (yext (if is-up? (cons (* log -0.8) 0) (cons 0 (* log 0.8))))
         (flag-stencil (make-filled-box-stencil '(-0.4 . 0.4) yext))
         (stroke-style (ly:grob-property grob 'stroke-style))
         (stroke-stencil (if (equal? stroke-style "grace")
                              (make-line-stencil 0.2 -0.9 -0.4 0.9 -0.4)
                              empty-stencil)))
    (ly:stencil-add flag-stencil stroke-stencil)))
```

*% Create a flag stencil by looking up the glyph from the font*

```
#(define (inverted-flag grob)
  (let* ((stem-grob (ly:grob-parent grob X))
```

```

      (dir (if (eqv? (ly:grob-property stem-grob 'direction) UP) "d" "u"))
      (flag (retrieve-glyph-flag "" dir "" grob))
      (line-thickness (ly:staff-symbol-line-thickness grob))
      (stem-thickness (ly:grob-property stem-grob 'thickness))
      (stem-width (* line-thickness stem-thickness))
      (stroke-style (ly:grob-property grob 'stroke-style))
      (stencil (if (null? stroke-style)
                    flag
                    (add-stroke-glyph flag stem-grob dir stroke-style "")))
      (rotated-flag (ly:stencil-rotate-absolute stencil 180 0 0))
      (ly:stencil-translate rotated-flag (cons (- (/ stem-width 2)) 0)))

snippetexamplenotes =
{
  \autoBeamOff c'8 d'16 c'32 d'64 \acciaccatura {c'8} d'64
}

{
  \time 1/4
  \textMark "Normal flags"
  \snippetexamplenotes

  \textMark "Custom flag: inverted"
  \override Flag.stencil = #inverted-flag
  \snippetexamplenotes

  \textMark "Custom flag: weight"
  \override Flag.stencil = #weight-flag
  \snippetexamplenotes

  \textMark "Revert to normal"
  \revert Flag.stencil
  \snippetexamplenotes
}

```



## Schlagrhythmus für Gitarren

In Gitarrennotation kann neben Melodie, Akkordbezeichnungen und Bunddiagrammen auch der Schlagrhythmus angegeben werden.

```

\include "predefined-guitar-fretboards.ly"
<<
  \new ChordNames {
    \chordmode {
      c1 | f | g | c
    }
  }
  \new FretBoards {

```

```

\chordmode {
  c1 | f | g | c
}
}
\new Voice \with {
  \consists "Pitch_squash_engraver"
} {
  \relative c'' {
    \improvisationOn
    c4 c8 c c4 c8 c
    f4 f8 f f4 f8 f
    g4 g8 g g4 g8 g
    c4 c8 c c4 c8 c
  }
}
\new Voice = "melody" {
  \relative c'' {
    c2 e4 e4
    f2. r4
    g2. a4
    e4 c2.
  }
}
\new Lyrics {
  \lyricsto "melody" {
    This is my song.
    I like to sing.
  }
}
>>

```

The image shows a musical score for a song. It consists of two staves. The top staff is a guitar accompaniment in C major, with four measures corresponding to the chords C, F, G, and C. Each measure has a guitar chord diagram above it. The bottom staff is a vocal melody in C major, with the lyrics 'This is my song. I like to sing.' written below it. The melody is in 4/4 time, with a tempo of 120. The lyrics are: 'This is my song. I like to sing.'

## Heavily customized polymetric time signatures

Though the polymetric time signature shown was not the most essential item here, it has been included to show the beat of this piece (which is the template of a real Balkan song!).

```

melody = \relative c'' {
  \key g \major
  \compoundMeter #'((3 8) (2 8) (2 8) (3 8) (2 8) (2 8)
    (2 8) (2 8) (3 8) (2 8) (2 8))
  c8 c c d4 c8 c b c b a4 g fis8 e d c b' c d e4-~ fis8 g \break
  c,4. d4 c4 d4. c4 d c2 d4. e4-~ d4
}

```

```

c4. d4 c4 d4. c4 d c2 d4. e4-^ d4 \break
c4. d4 c4 d4. c4 d c2 d4. e4-^ d4
c4. d4 c4 d4. c4 d c2 d4. e4-^ d4 \break
}

drum = \new DrumStaff \drummode {
  \repeat volta 2 {
    bd4.^ \markup { Drums } sn4 bd \bar ";"
    sn4. bd4 sn \bar ";"
    bd sn bd4. sn4 bd
  }
}

\new Staff \with {
  instrumentName = \markup { \concat { "B" \flat " Sop." } }
}

{
  \melody
  \drum
}

\paper { tagline = ##f }

```

The image shows a musical score for Soprano and Drums. The Soprano part is written on a single staff with a key signature of one flat (B-flat) and a time signature of 3/8. The melody consists of a series of eighth notes and quarter notes, with some notes beamed together. The Drums part is written on a single staff with a key signature of one flat (B-flat) and a time signature of 2/8. The drum part consists of a series of eighth notes and quarter notes, with some notes beamed together. The score is divided into four systems, each containing a Soprano staff and a Drums staff. The first system has a key signature change from B-flat to B-natural. The second, third, and fourth systems are marked with a '2', '4', and '6' respectively, indicating a change in the number of measures per bar. The Drums part is marked with a '25' and '8' in the first system, indicating a change in the number of measures per bar.

## High and Low woodblock example

Two Woodblocks, entered with 'wbh' (high woodblock) and 'wbl' (low woodblock). The length of the barline has been altered with an \override command otherwise it would be too short. The positions of the two stafflines also have to be explicitly defined.

```
\paper { tagline = ##f }
```

```

% These lines define the position of the woodblocks in the stave;
% if you like, you can change it or you can use special note heads
% for the woodblocks.

```

```

#(define mydrums '((hiwoodblock default #f 3)
                    (lowoodblock default #f -2)))

woodstaff = {
  % This defines a staff with only two lines.
  % It also defines the positions of the two lines.
  \override Staff.StaffSymbol.line-positions = #'(-2 3)

  % This is necessary; if not entered,
  % the barline would be too short!
  \override Staff.BarLine.bar-extent = #'(-1.0 . 1.5)
  % small correction for the clef:
  \set DrumStaff.clefPosition = 0.5
}

\new DrumStaff {
  % with this you load your new drum style table
  \set DrumStaff.drumStyleTable = #(alist->hash-table mydrums)

  \woodstaff

  \drummode {
    \time 2/4
    wbl8 16 16 8-> 8 |
    wbl8 16 16-> ~ 16 16 r8 |
  }
}

```



## Making an object invisible with the 'transparent property

Setting the transparent property will cause an object to be printed in „invisible ink“: the object is not printed, but all its other behavior is retained. The object still takes up space, it takes part in collisions, and slurs, ties and beams can be attached to it.

This snippet demonstrates how to connect different voices using ties. Normally, ties only connect two notes in the same voice. By introducing a tie in a different voice, and blanking the first up-stem in that voice, the tie appears to cross voices.

```

\relative {
  \time 2/4
  <<
  {
    \once \hide Stem
    \once \override Stem.length = #8
    b'8 ~ 8\noBeam
    \once \hide Stem
    \once \override Stem.length = #8
    g8 ~ 8\noBeam
  }
  \\\
  {

```

```

      b8 g g e
    }
  >>
}

```



## Legatobögen mit kompliziertem Strichelmuster

definieren

Legatobögen können mit einem komplizierten Strichelmuster gesetzt werden, indem die `dash-definition`-Eigenschaft definiert wird. `dash-definition` ist eine Liste bestehend aus `dash-elements`-Elementen. Ein `dash-element` ist eine Liste an Parametern, die das Strichverhalten für einen Abschnitt des Legatobogens definieren.

Der Bogen wird nach dem Bezierparameter `t` definiert, welcher von 0 am linken Ende des Bogens zu 1 am rechten Ende des Bogens reicht. `dash-element` ist eine Liste (`start-t stop-t dash-Unterbrechung dash-Abschnitt`). Die Region des Bogens von `start-t` bis `stop-t` hat eine Unterbrechung von `dash-Unterbrechung` von jedem `dash-Abschnitt-Schwarzabschnitt`. `dash-Abschnitt` ist in Notenlinienzwischenräumen definiert. `dash-Abschnitt` ist auf 1 für einen durchgehenden Bogen gesetzt.

```

\relative c' {
  \once \override
    Slur.dash-definition = #'((0 0.3 0.1 0.75)
                              (0.3 0.6 1 1)
                              (0.65 1.0 0.4 0.75))

  c4( d e f)
  \once \override
    Slur.dash-definition = #'((0 0.25 1 1)
                              (0.3 0.7 0.4 0.75)
                              (0.75 1.0 1 1))

  c4( d e f)
}

```



## Manually controlling beam positions

Beam positions may be controlled manually, by overriding the `positions` setting of the `Beam` grob.

```

\relative c' {
  \time 2/4
  % from upper staff-line (position 2) to center (position 0)
  \override Beam.positions = #'(2 . 0)
  c8 c
  % from center to one above center (position 1)
  \override Beam.positions = #'(0 . 1)
  c8 c
}

```



}

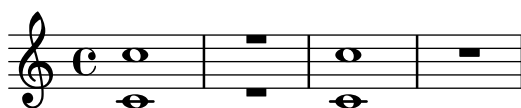


## Merging multi-measure rests in a polyphonic part

When using multi-measure rests in a polyphonic staff, the rests will be placed differently depending on the voice they belong to. However they can be printed on the same staff line, using the following setting.

```
normalPos = \revert MultiMeasureRest.direction
```

```
{
  <<
    {
      c' '1
      R1
      c' '1
      \normalPos
      R1
    }
    \\\
    {
      c' 1
      R1
      c' 1
      \normalPos
      R1
    }
  >>
}
```



## Modifying tuplet bracket length

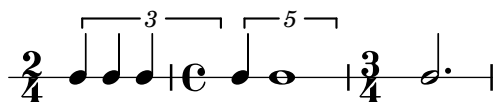
Tuplet brackets can be made to run to prefatory matter or the next note. Default tuplet brackets end at the right edge of the final note of the tuplet; full-length tuplet brackets extend farther to the right, either to cover all the non-rhythmic notation up to the following note, or to cover only the whitespace before the next item of notation, be that a clef, time signature, key signature, or another note. The example shows how to switch tuplets to full length mode and how to modify what material they cover.

```
\new RhythmicStaff {
  % Set tuplets to be extendable...
  \set tupletFullLength = ##t
  % ...to cover all items up to the next note
  \set tupletFullLengthNote = ##t
  \time 2/4
  \tuplet 3/2 { c4 4 4 }
  % ...or to cover just whitespace
```

```

\set tupletFullLengthNote = ##f
\time 4/4
\tuplet 5/4 { 4 1 }
\time 3/4
2.
}

```



## Moving dotted notes in polyphony

When a dotted note in the upper voice is moved to avoid a collision with a note in another voice, the default is to move the upper note to the right. This behaviour can be over-ridden by using the `prefer-dotted-right` property of `NoteCollision`.

```

\new Staff \relative c' <<
{
  f2. f4
  \override Staff.NoteCollision.prefer-dotted-right = ##f
  f2. f4
  \override Staff.NoteCollision.prefer-dotted-right = ##t
  f2. f4
}
\\
{ e4 e e e e e e e e e e }
>>

```



## Multi-measure rest length control

Multi-measure rests have length according to their total duration which is under the control of `MultiMeasureRest.space-increment`. Note that the default value is 2.0.

```

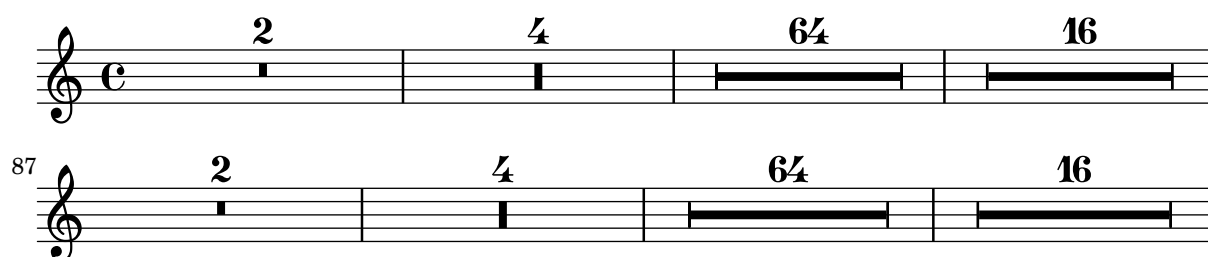
\relative c' {
  \compressEmptyMeasures
  R1*2 R1*4 R1*64 R1*16
  \override Staff.MultiMeasureRest.space-increment = 2.5
  R1*2 R1*4 R1*64 R1*16
}

```

```

\paper { tagline = ##f }

```

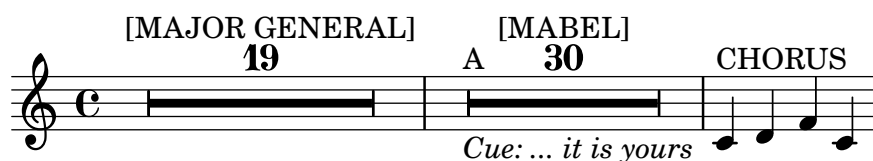


## Textbeschriftung und Mehrtaktpausen

Textbeschriftungen, die an Mehrtaktpausen gehängt wird, wird über oder unter der Pause zentriert. Lange Beschriftungen lassen den Takt nicht breiter werden. Um eine Mehrtaktpause einer Beschriftung anzupassen, muss eine unsichtbare Pause mit der Beschriftung direkt vor der Mehrtaktpause eingesetzt werden.

Man sollte beachten, dass unsichtbare Pausen automatische Taktstriche nach sich ziehen. Text, der an eine unsichtbare Pause gehängt wird, ist links ausgerichtet an der Position, wo die Pause erscheinen würde. Wenn aber die Länge des Taktes durch die Länge des Textes bestimmt wird, sieht es so aus, als ob der Text zentriert gesetzt ist.

```
\relative c' {
  \compressMMRests {
    \textLengthOn
    <>^\markup { [MAJOR GENERAL] }
    R1*19
    <>_\markup { \italic { Cue: ... it is yours } }
    <>^\markup { A }
    R1*30^\markup { [MABEL] }
    \textLengthOff
    c4^\markup { CHORUS } d f c
  }
}
```



## Nicht-standard-N-tolennummern

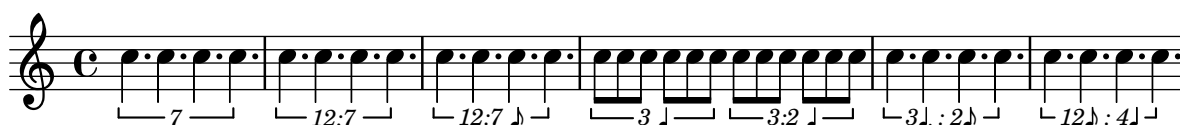
LilyPond stellt auch Formatierungsfunktionen zur Verfügung, mit denen N-tolennummern gesetzt werden können, die sich von dem eigentlichen Bruch unterscheiden. Auch ein Notenwert kann zu Nenner oder Zähler des Bruchs hinzugefügt werden.

```
\relative c' {
  \once \override TupletNumber.text =
    #(tuplet-number::non-default-tuplet-denominator-text 7)
  \tuplet 3/2 { c4. c4. c4. c4. }
  \once \override TupletNumber.text =
    #(tuplet-number::non-default-tuplet-fraction-text 12 7)
  \tuplet 3/2 { c4. c4. c4. c4. }
  \once \override TupletNumber.text =
    #(tuplet-number::append-note-wrapper
      (tuplet-number::non-default-tuplet-fraction-text 12 7)
      (ly:make-duration 3 0))
  \tuplet 3/2 { c4. c4. c4. c4. }
  \once \override TupletNumber.text =
    #(tuplet-number::append-note-wrapper
      tuplet-number::calc-denominator-text
      (ly:make-duration 2 0))
  \tuplet 3/2 { c8 c8 c8 c8 c8 c8 }
  \once \override TupletNumber.text =
    #(tuplet-number::append-note-wrapper
```

```

    tuplet-number::calc-fraction-text
    (ly:make-duration 2 0))
\ tuplet 3/2 { c8 c8 c8 c8 c8 c8 }
\once \override TupletNumber.text =
    #(tuplet-number::fraction-with-notes
    (ly:make-duration 2 1) (ly:make-duration 3 0))
\ tuplet 3/2 { c4. c4. c4. c4. }
\once \override TupletNumber.text =
    #(tuplet-number::non-default-fraction-with-notes 12
    (ly:make-duration 3 0) 4 (ly:make-duration 2 0))
\ tuplet 3/2 { c4. c4. c4. c4. }
}

```



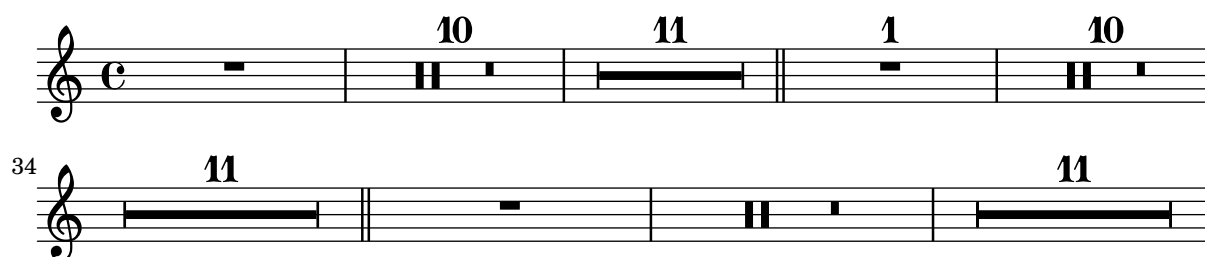
## Numbering single measure rests

Multi measure rests show their length by a number except for single measures. This can be changed by setting `restNumberThreshold`.

```

{
  \compressEmptyMeasures
  R1 R1*10 R1*11 \bar "||"
  \set restNumberThreshold = 0
  R1 R1*10 R1*11 \bar "||"
  \set restNumberThreshold = 10
  R1 R1*10 R1*11
}

```



## PartCombine und autoBeamOff

Die Funktionsweise von `\autoBeamOff`, wenn es zusammen mit `\partCombine` eingesetzt wird, kann schwer zu verstehen sein. Es kann besser sein, anstatt dessen

```
\set Staff.autobeaming = ##f
```

zu benutzen, um sicherzustellen, dass die automatische Bebung für das gesamte System ausgeschaltet ist.

`\partCombine` funktioniert offensichtlich mit 3 Stimme (Hals nach oben einfach, Hals nach unten einfach, Hals nach oben kombiniert).

Ein `\autoBeamOff`-Befehl im ersten Argument von `\partCombine` gilt für die Stimme, die zu dem Zeitpunkt aktiv ist, an dem der Befehl verarbeitet wird, entweder für Hals nach oben, nach unten oder Hals nach oben kombiniert. Ein `\autoBeamOff`-Befehl im zweiten Argument gilt für die Stimme, die mit Hals nach unten einfach ist.

Um `\autoBeamOff` zu benutzen, damit alle automatischen Balken aufhören, wenn man es mit `\partCombine` verwendet, muss `\autoBeamOff` *dreimal* aufgerufen werden.

```
{
  %\set Staff.autoBeaming = ##f % turns off all autobeaming
  \partCombine
  {
    \autoBeamOff % applies to split up stems
    \repeat unfold 4 a'16
    %\autoBeamOff % applies to combined up stems
    \repeat unfold 4 a'8
    \repeat unfold 4 a'16
  }
  {
    \autoBeamOff % applies to down stems
    \repeat unfold 4 f'8
    \repeat unfold 8 f'16 |
  }
}
```



## Percussion example

A short example taken from Stravinsky's *L'histoire du Soldat*.

```
#(define mydrums '((bassdrum   default #f 4)
                   (snare       default #f -4)
                   (tambourine default #f 0)))
```

```
\paper { tagline = ##f }
```

```
global = {
  \time 3/8 s4.
  \time 2/4 s2*2
  \time 3/8 s4.
  \time 2/4 s2
}
```

```
drumsA = {
  \context DrumVoice <<
    { \global }
    { \drummode {
      \autoBeamOff
      \stemDown sn8 \stemUp tamb s8 |
      sn4 \stemDown sn4 |
      \stemUp tamb8 \stemDown sn8 \stemUp sn16 \stemDown sn \stemUp sn8 |
      \stemDown sn8 \stemUp tamb s8 |
      \stemUp sn4 s8 \stemUp tamb
    }
  }
  >>
```

```

}

drumsB = {
  \drummode {
    s4 bd8 s2*2 s4 bd8 s4 bd8 s8
  }
}

\layout {
  indent = 40
  \context {
    \DrumStaff
    drumStyleTable = #(alist->hash-table mydrums)
  }
}

\score {
  \new StaffGroup <<
    \new DrumStaff \with {
      instrumentName = \markup \center-column {
        "Tambourine"
        "et"
        "caisse claire s. timbre"
      }
    }
  }
  \drumsA
  \new DrumStaff \with {
    instrumentName = "Grosse Caisse"
  }
  \drumsB
  >>
}

```

Tambourine  
et  
caisse claire s. timbre

Grosse Caisse

## Zeilenumbrüche bei N-tolen mit Balken erlauben

Dieses künstliche Beispiel zeigt, wie sowohl automatische als auch manuelle Zeilenumbrüche innerhalb einer N-tole mit Balken erlaubt werden können. Diese unregelmäßige Bebalkung muss allerdings manuell gesetzt werden.

```

\paper { tagline = ##f }
\layout {
  \context {
    \Voice
    % Permit line breaks within tuplets
    \remove "Forbid_line_break_engraver"
    % Allow beams to be broken at line breaks

```

```

\override Beam.breakable = ##t
}
}
\relative c' {
  a8
  \repeat unfold 5 { \tuplet 3/2 { c[ b a] } }
  % Insert a manual line break within a tuplet
  \tuplet 3/2 { c[ b \bar "" \break a] }
  \repeat unfold 5 { \tuplet 3/2 { c[ b a] } }
  c8
}

```



## Positioning grace note beams at the height of normal note beams

When notes are placed on ledger lines, their beams are usually centred on the stave. Grace notes beams are shorter and grace notes on ledger lines may well have beams outside the stave. You can override this beaming for grace notes.

```

\relative c {
  f8[ e]
  \grace {
    f8[ e]
    \override Stem.no-stem-extend = ##f
    f8[ e]
    \revert Stem.no-stem-extend
  }
  f8[ e]
}

```



## Positionierung von Verzierungen mit verschiebbarem Platz

Wenn man die Eigenschaft 'strict-grace-spacing aktiviert, werden die Verzierungsnoten "fließend" gemacht, d.h. sie sind von den normalen Noten los gekoppelt: Zuerst werden die normalen Noten platziert, dann erst die Verzierungen links von der Hauptnote gesetzt.

```

\relative c' {
  <<
  \override Score.SpacingSpanner.strict-grace-spacing = ##t
  \new Staff \new Voice {
    \afterGrace c4 { c16[ c8 c16] }
  }
}

```

```

      c8[ \grace { b16 d } c8]
      c4 r
    }
    \new Staff {
      c16 c c c c c c c c4 r
    }
  >>
}

```



## Positionierung von Ganztaktpausen

Anders als bei normalen Pausen gibt es keinen direkten Befehl, um die vertikale Position von Ganztaktpausen zu beeinflussen, indem man sie an eine Tonhöhe anhängt. In polyphoner Notation wird aber dennoch die Position der Pausen von geraden und ungeraden Stimmen voneinander unterschieden. Die Position von Ganztaktpausen kann wie folgt verändert werden:

```

\relative c' {
  % Multi-measure rests by default are set under the fourth line
  R1
  % They can be moved using an override
  \override MultiMeasureRest.staff-position = -2
  R1
  \override MultiMeasureRest.staff-position = 0
  R1
  \override MultiMeasureRest.staff-position = 2
  R1
  \override MultiMeasureRest.staff-position = 3
  R1
  \override MultiMeasureRest.staff-position = 6
  R1
  \revert MultiMeasureRest.staff-position
  \break

  % In two Voices, odd-numbered voices are under the top line
  << { R1 } \ { a1 } >>
  % Even-numbered voices are under the bottom line
  << { a1 } \ { R1 } >>
  % Multi-measure rests in both voices remain separate
  << { R1 } \ { R1 } >>

  % Separating multi-measure rests in more than two voices
  % requires an override
  << { R1 } \ { R1 } \
    \once \override MultiMeasureRest.staff-position = 0
    { R1 }
  >>

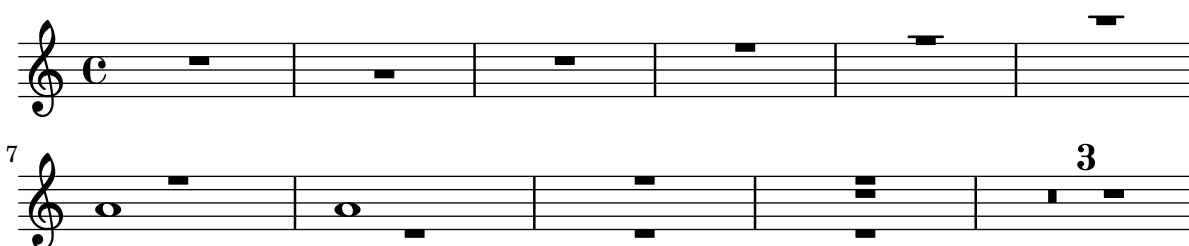
```



```

% Using compressed bars in multiple voices requires another override
% in all voices to avoid multiple instances being printed
\compressMMRests
<<
  \revert MultiMeasureRest.direction
  { R1*3 }
  \\
  \revert MultiMeasureRest.direction
  { R1*3 }
>>
}

```



## Positioning opposing fermatas on a bar line

This snippet demonstrates a command that prints fermatas both above and below a bar line. If there would not otherwise be a bar line, it adds a double bar line. Semantically, the command codes a longer-than-normal caesura, which might be considered misuse depending on the situation.

```

twoWayFermata = {
  \once \set Staff.caesuraType = #'((underlying-bar-line . "||"))
  \once \set Staff.caesuraTypeTransform = ##f
  \caesura ~\fermata _\fermata
}

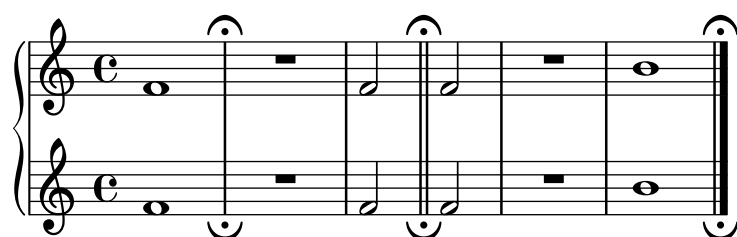
music = {
  f'1 \twoWayFermata
  R1
  f'2 \twoWayFermata f'2
  R1
  b'1 \twoWayFermata \fine
}

```

```

\new GrandStaff <<
  \new Staff \music
  \new Staff \music
>>

```



## Preventing final mark from removing final tuplet

The addition of a final mark can result in the loss of a final tuplet marking. This can be overcome by setting `TupletBracket.full-length-to-extent` to `false`.

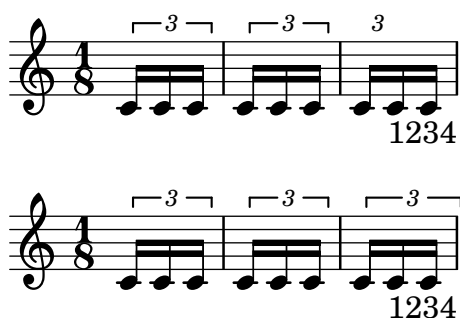
*% due to issue 2362 a long mark such as  
% \textEndMark "Composed Feb 2007 - Feb 2008"  
% cannot be used here.*

```
\paper { tagline = ##f }

\new Staff {
  \set tupletFullLength = ##t
  \time 1/8
  \tuplet 3/2 8 { c'16 c' c' c' c' c' c' c' }
  \tweak direction #DOWN \textEndMark "1234"
}

\new Staff {
  \set tupletFullLength = ##t
  \override TupletBracket.full-length-to-extent = ##f

  \time 1/8
  \tuplet 3/2 8 { c'16 c' c' c' c' c' c' c' }
  \tweak direction #DOWN \textEndMark "1234"
}
```

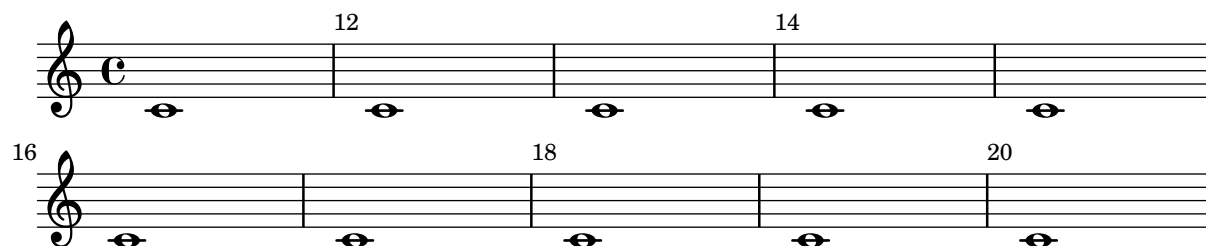


## Setzen der Taktnummern in regelmäßigen Intervallen

Taktnummern können in regelmäßigen Intervallen gesetzt werden, indem man die Eigenschaft `barNumberVisibility` definiert. In diesem Beispiel werden die Taktnummern jeden zweiten Takt gesetzt, außer am Ende einer Zeile.

```
\relative c' {
  \override Score.BarNumber.break-visibility = #end-of-line-invisible
  \set Score.currentBarNumber = 11
  % Print a bar number every second measure
  \set Score.barNumberVisibility = #(every-nth-bar-number-visible 2)
  c1 | c | c | c | c |
  \break
  c1 | c | c | c | c |
}

\paper { tagline = ##f }
```



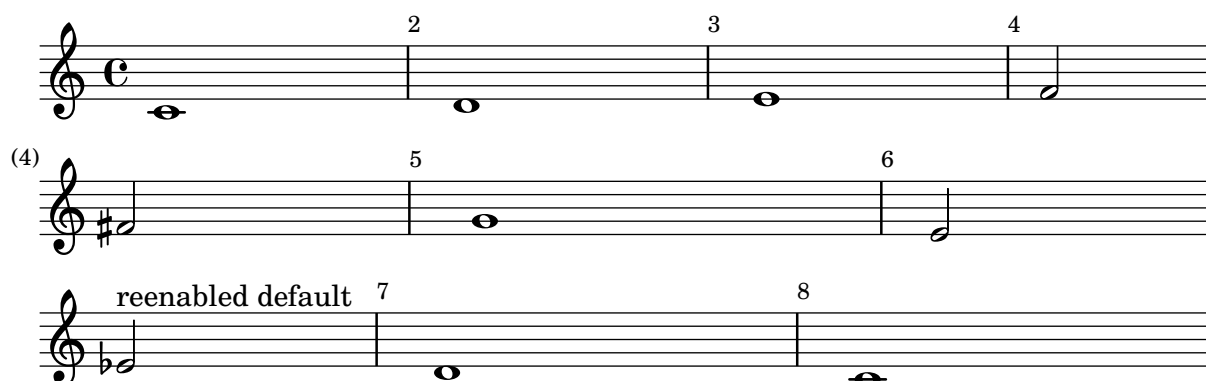
## Printing bar numbers for broken measures

By default a BarNumber of a broken measure is not repeated at the beginning of the new line. Use `first-bar-number-invisible-save-broken-bars` for `barNumberVisibility` to get a parenthesized BarNumber there.

```
\layout {
  \context {
    \Score
    barNumberVisibility = #first-bar-number-invisible-save-broken-bars
    \override BarNumber.break-visibility = ##(#f #t #t)
  }
}
```

```
\relative c' {
  c1 | d | e | f2 \bar "" \break
  fis | g1 | e2 \bar "" \break
  <>^"reenabled default"
  % back to default -
  % \unset Score.barNumberVisibility would do so as well
  \set Score.barNumberVisibility =
    #first-bar-number-invisible-and-no-parenthesized-bar-numbers
  es | d1 | c
}
```

```
\paper { tagline = ##f }
```



## Setzen von Taktnummern in Kästen oder Kreisen

Taktnummern können auch in Boxen oder Kreisen gesetzt werden.

```
\relative c' {
  % Prevent bar numbers at the end of a line and permit them elsewhere
  \override Score.BarNumber.break-visibility = #end-of-line-invisible
  \set Score.barNumberVisibility = #(every-nth-bar-number-visible 4)
```

```

% Increase the size of the bar number by 2
\override Score.BarNumber.font-size = 2

% Draw a box round the following bar number(s)
\override Score.BarNumber.stencil
  = #(make-stencil-boxer 0.1 0.25 ly:text-interface::print)
\repeat unfold 5 { c1 }

% Draw a circle round the following bar number(s)
\override Score.BarNumber.stencil
  = #(make-stencil-circler 0.1 0.25 ly:text-interface::print)
\repeat unfold 4 { c1 } \bar "|."
}

```



## Printing bar numbers using modulo-bar-number-visible

If the remainder of the division of the current BarNumber by the first argument of modulo-bar-number-visible equals its second argument print the BarNumber.

Useful to print the BarNumber at certain distances, p.e.:

- (modulo-bar-number-visible 3 2) -> prints 2,5,8
- (modulo-bar-number-visible 4 2) -> prints 2,6,10
- (modulo-bar-number-visible 3 1) -> prints 3,5,7
- (modulo-bar-number-visible 5 2) -> prints 2,7,12

```

\layout {
  \context {
    \Score
    \override BarNumber.break-visibility = ##(f t t)
    barNumberVisibility = #(modulo-bar-number-visible 3 2)
  }
}

```

```

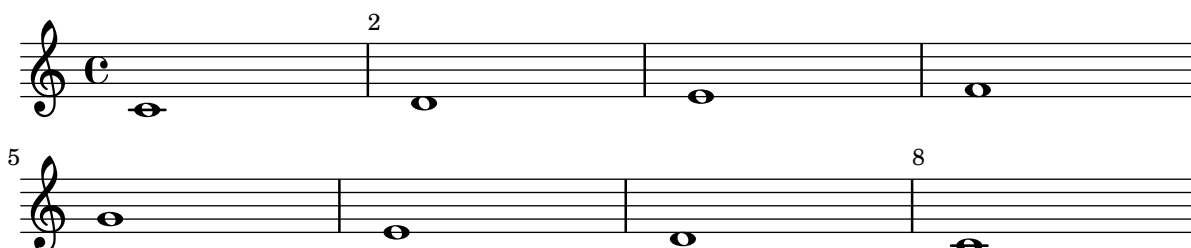
\relative c' {
  c1 | d | e | f \break
  g1 | e | d | c
}

```

```

\paper { tagline = ##f }

```

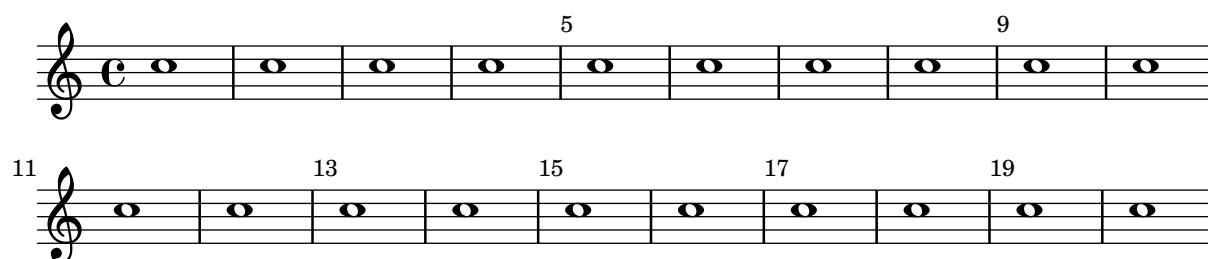


## Printing bar numbers with changing regular intervals

Using the `set-bar-number-visibility` context function, bar number intervals can be changed.

```
\relative c' {
  \override Score.BarNumber.break-visibility = #end-of-line-invisible
  \context Score \applyContext #(set-bar-number-visibility 4)
  \repeat unfold 10 c'1
  \context Score \applyContext #(set-bar-number-visibility 2)
  \repeat unfold 10 c
}
```

```
\paper { tagline = ##f }
```



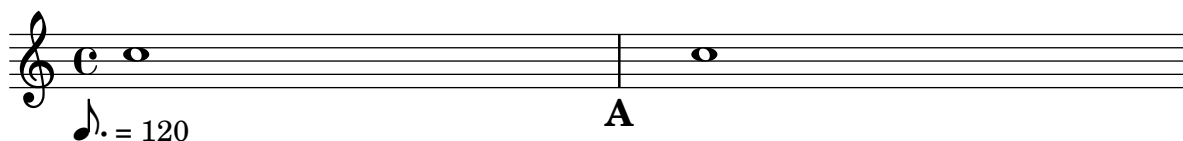
## Metronom- und Übungszeichen unter das System setzen

Normalerweise werden Metronom- und Übungszeichen über dem Notensystem ausgegeben. Um sie unter das System zu setzen, muss die `direction`-Eigenschaft von `MetronomeMark` oder `RehearsalMark` entsprechend verändert werden.

```
\layout {
  indent = 0
  ragged-right = ##f
}

{
  % Metronome marks below the staff
  \override Score.MetronomeMark.direction = #DOWN
  \tempo 8. = 120
  c''1

  % Rehearsal marks below the staff
  \override Score.RehearsalMark.direction = #DOWN
  \mark \default
  c''1
}
```



## Printing music with different time signatures

In the following snippet, two parts have a completely different time signature, yet remain synchronized.

The bar lines can no longer be printed at the Score level; to allow independent bar lines in each part, the `Default_barline_engraver` and `Timing_translator` are moved from the Score context to the Staff context.

If bar numbers are required, the `Bar_number_engraver` should also be moved, since it relies on properties set by the `Timing_translator`; a `\with` block can be used to add bar numbers to the relevant staff.

```
\paper {
  indent = #0
  ragged-right = ##t
  tagline = ##f
}

global = { \time 3/4 { s2.*3 } \bar "" \break { s2.*3 } }

\layout {
  \context {
    \Score
    \remove "Timing_translator"
    \remove "Bar_number_engraver"
    \override SpacingSpanner.uniform-stretching = ##t
    \override SpacingSpanner.strict-note-spacing = ##t
    proportionalNotationDuration = \musicLength 64
  }
  \context {
    \Staff
    \consists "Timing_translator"
  }
  \context {
    \Voice
    \remove "Forbid_line_break_engraver"
    tupletFullLength = ##t
  }
}

Bassklarinette = \new Staff \with {
  \consists "Bar_number_engraver"
  barNumberVisibility = #(every-nth-bar-number-visible 2)
  \override BarNumber.break-visibility = #end-of-line-invisible
} <<
\global {
  \bar "|"
  \clef treble
  \time 3/8
  d''4.

  \bar "|"
  \time 3/4
  r8 des''2( c''8)

  \bar "|"
  \time 7/8
```

```

r4. ees''2 ~

\bar "|"
\time 2/4
\tupletUp
\tuplet 3/2 { ees''4 r4 d''4 ~ }

\bar "|"
\time 3/8
\tupletUp
\tuplet 4/3 { d''4 r4 }

\bar "|"
\time 2/4
e''2

\bar "|"
\time 3/8
es''4.

\bar "|"
\time 3/4
r8 d''2 r8
\bar "|"
}
>>

```

```

Percussion = \new StaffGroup <<
  \new Staff <<
    \global {
      \bar "|"
      \clef percussion
      \time 3/4
      r4 c'2 ~

      \bar "|"
      c'2.

      \bar "|"
      R2.

      \bar "|"
      r2 g'4 ~

      \bar "|"
      g'2. ~

      \bar "|"
      g'2.
    }
  >>
>>
\new Staff <<

```

```

\global {
  \bar "|"
  \clef percussion
  \time 3/4
  R2.

  \bar "|"
  g'2. ~

  \bar "|"
  g'2.

  \bar "|"
  r4 g'2 ~

  \bar "|"
  g'2 r4

  \bar "|"
  g'2.
}
>>
>>

```

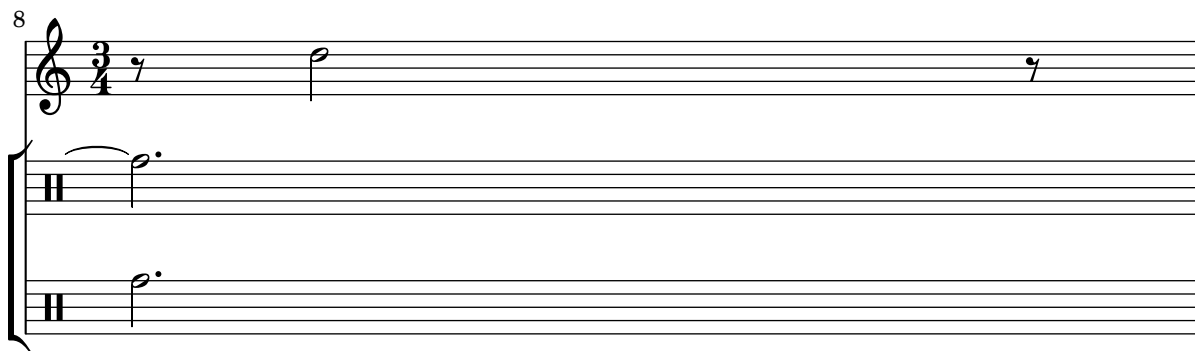
```

\score {
  <<
    \Bassklarinette
    \Perkussion
  >>
}

```

(4)



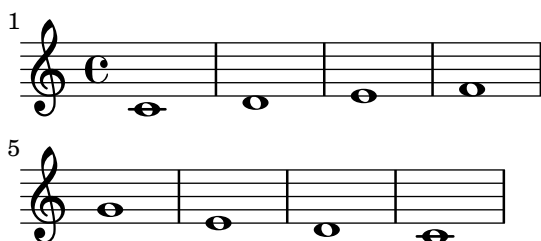


## Setzen der Taktnummer für den ersten Takt

Standardmäßig wird die erste Taktzahl einer Partitur nicht gesetzt, wenn sie weniger oder gleich '1' ist. Indem man `barNumberVisibility` auf `all-bar-numbers-visible` setzt, kann eine beliebige Taktzahl für den ersten und die folgenden Takte gesetzt werden. Eine leere Taktlinie muss jedoch vor der ersten Note eingefügt werden, damit das funktioniert.

```
\layout {
  indent = 0
  ragged-right = ##t
}

\relative c' {
  \set Score.barNumberVisibility = #all-bar-numbers-visible
  c1 | d | e | f \break
  g1 | e | d | c
}
```



## Printing tuplet brackets on the note head side

Whichever option you choose for controlling the tuplet bracket visibility, it will show or hide the tuplet bracket irrespectively of tuplet bracket placement (stem side or note head side). However, when placing the tuplet bracket on the note head side some authors recommend always printing the tuplet bracket. The option `visible-over-note-heads` can be used to achieve this.

```
music = \relative c'' {
  \tupletNeutral \tuplet 3/2 { c16[ d e ] f8]
  \tupletUp \tuplet 3/2 { c8 d e }
}

\new Voice {
  \relative c' {
    \time 2/4
    \override TupletBracket.visible-over-note-heads = ##t
    \override Score.TextMark.non-musical = ##f
    { \textMark \markup "default" \music }
  }
}
```

```

\override TupletBracket.bracket-visibility = #'if-no-beam
{ \textMark \markup \typewriter "'if-no-beam" \music }
}
}

```



## Globale Umdefinition von Verzierungsnoten

Die globalen Standardeinstellungen für Verzierungsnoten werden in den Variablen `startGraceMusic`, `stopGraceMusic`, `startAcciaccaturaMusic`, `stopAcciaccaturaMusic`, `startAppoggiaturaMusic` und `stopAppoggiaturaMusic` gespeichert, die in der Datei `ly/grace-init.ly` definiert sind. Wenn man sie umdefiniert, können andere Effekte erreicht werden.

```

startAcciaccaturaMusic = {
  <>(
    \override Flag.stroke-style = "grace"
    \slurDashed
  )
}

```

```

stopAcciaccaturaMusic = {
  \revert Flag.stroke-style
  \slurSolid
  <>
}

```

```

\relative c' {
  \acciaccatura d8 c1
}

```



## Entfernung von Taktnummern in einer Partitur

Taktnummern können vollkommen aus den Noten entfernt werden, indem man den `Bar_number_engraver` aus dem Score-Kontext entfernt.

```

\layout {
  \context {
    \Score
    \omit BarNumber
    % or:
    %\remove "Bar_number_engraver"
  }
}

```

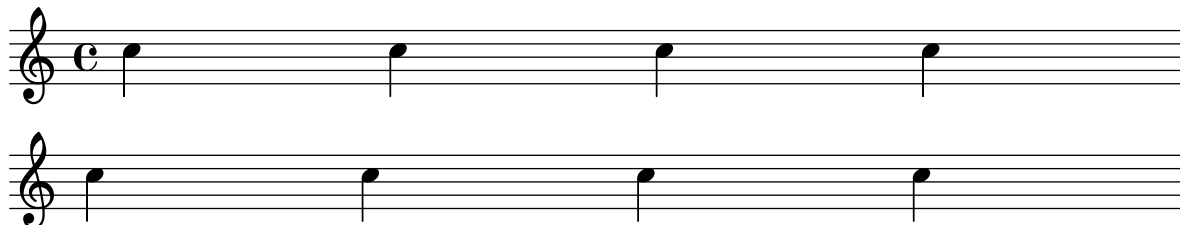
```

\relative c' {
  c4 c c c \break
  c4 c c c
}

```

}

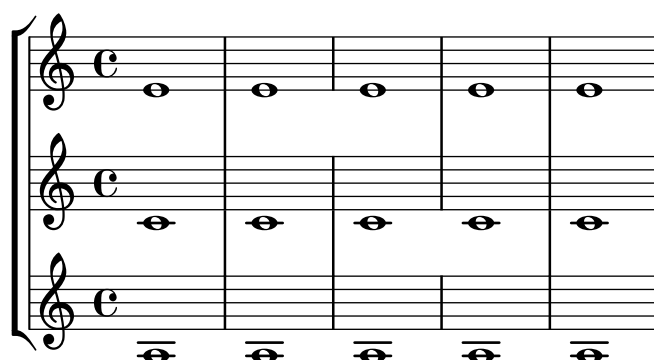
```
\paper { tagline = ##f }
```



## Removing connecting bar lines on StaffGroup, PianoStaff, or GrandStaff

By default, bar lines in StaffGroup, PianoStaff, or GrandStaff groups are connected between the staves, i.e. a SpanBar is printed. This behaviour can be overridden on a staff-by-staff basis.

```
\relative c' {
  \new StaffGroup <<
    \new Staff {
      e1 | e
      \once \override Staff.BarLine.allow-span-bar = ##f
      e1 | e | e
    }
    \new Staff {
      c1 | c | c
      \once \override Staff.BarLine.allow-span-bar = ##f
      c1 | c
    }
    \new Staff {
      a1 | a | a | a | a
    }
  >>
}
```



## Pausenstile

Pausen können in verschiedenen Stilen dargestellt werden.

```
restsA = {
  r\maxima r\longa r\breve r1 r2 r4 r8 r16 s32
  s64 s128 s256 s512 s1024 s1024
}
```

```

restsB = {
  r\maxima r\longa r\breve r1 r2 r4 r8 r16 r32
  r64 r128 r256 r512 r1024 s1024
}

\new Staff \relative c {
  \omit Score.TimeSignature
  \cadenzaOn

  \override Staff.Rest.style = #'mensural
  <>^\markup \typewriter { mensural } \restsA \bar "" \break

  \override Staff.Rest.style = #'neomensural
  <>^\markup \typewriter { neomensural } \restsA \bar "" \break

  \override Staff.Rest.style = #'classical
  <>^\markup \typewriter { classical } \restsB \bar "" \break

  \override Staff.Rest.style = #'z
  <>^\markup \typewriter { z-style } \restsB \bar "" \break

  \override Staff.Rest.style = #'default
  <>^\markup \typewriter { default } \restsB \bar "" \break
}

\paper {
  indent = 0
  tagline = ##f
}

```

The image displays five musical staves, each illustrating a different rest style. The first staff, labeled 'mensural', shows a series of horizontal lines representing rests. The second staff, labeled 'neomensural', shows rests with vertical stems. The third staff, labeled 'classical', shows rests with vertical stems and flags. The fourth staff, labeled 'z-style', shows rests with vertical stems and flags, and the fifth staff, labeled 'default', shows rests with vertical stems and flags.

## Standard-Balkenwerte rückgängig machen

Um Balken im 12/8-Takt als 3-4-3-2 zu gruppieren, muss man zuerst die Standardwerte für die Balken im 12/8-Takt rückgängig machen und dann die neuen Werte setzen:

```
\relative c' ' {
  \time 12/8

  % Default beaming
  a8 a a a a a a a a a a

  % Set new values for beam endings
  \set Score.beatStructure = 3,4,3,2
  a8 a a a a a a a a a a
}
```



## Rhythmic slashes

In „simple“ lead-sheets, sometimes no actual notes are written, instead only „rhythmic patterns“ and chords above the measures are notated giving the structure of a song. Such a feature is for example useful while creating/transcribing the structure of a song and also when sharing lead sheets with guitarists or jazz musicians.

```
startPat = {
  \improvisationOn
  \omit Stem
}
stopPat = {
  \improvisationOff
  \undo \omit Stem
}

\new Voice \with {
  \consists Pitch_squash_engraver
} {
  c'4 d' e' f' |
  \startPat
  4 4 4 4 |
  \stopPat
  f'4 e' d' c'
}
```

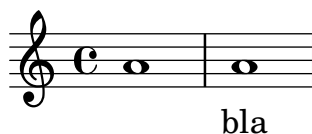


## Skips in lyric mode

The s syntax for skips is only available in note mode and chord mode. In other situations, for example, when entering lyrics, using the \skip command is recommended.

<<

```
\relative c'' { a1 | a }
\new Lyrics \lyricmode { \skip 1 bla1 }
>>
```



## Skips in lyric mode (2)

Although `s` skips cannot be used in `\lyricmode` (it is taken to be a literal „s“, not a space), double quotes (") or underscores (\_) are available.

So for example:

```
<<
\relative c'' { a4 b c d }
\new Lyrics \lyricmode { a4 "" _ gap }
>>
```



## Stemlets

In some notational conventions beams are allowed to extend over rests. Depending on preference, these beams may drop 'stemlets' to help the eye appreciate the rhythm better, and in some modern music the rest itself is omitted and only the stemlet remains.

This snippet shows a progression from traditional notation, to beams over the rest, to stemlets over the rest, to stemlets alone. Stemlets are generated by overriding the 'stemlet-length' property of `Stem`, while rests are hidden by setting 'transparent = ##t'.

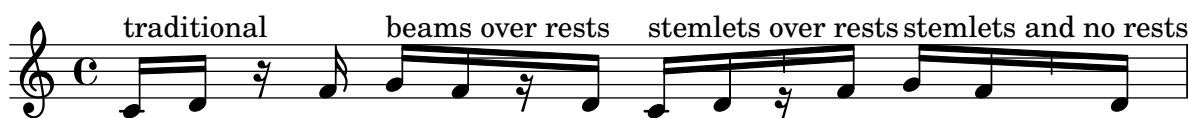
Some `\markup` elements are included in the source to highlight the different notations.

```
\paper { ragged-right = ##f }

{
  c'16~\markup { traditional } d' r f'
  g'16[~\markup { beams over rests } f' r d']

  % N.B. use Score.Stem to set for the whole score.
  \override Staff.Stem.stemlet-length = #0.75

  c'16[~\markup { stemlets over rests } d' r f']
  g'16[~\markup { stemlets and no rests } f'
  \once \hide Rest
  r16 d']
}
```





```

c32[ c c c c c c] r32

% Shorten beam by 3/32
c32[ c c c c] r16.

% Respect the incomplete beams of the previous two examples
\set respectIncompleteBeams = ##t
c32[ c c c c c c] r32
% no visual change here as last two stems are exempt from this
% special rule
c32[ c c c c] r16.
}

```



## Tam-tam example

A tam-tam example, entered with 'tt'

```

#(define mydrums '((tamtam default #f 0)))


\new DrumStaff \with { instrumentName = #"Tamtam" }

\drummode {
  \set DrumStaff.drumStyleTable = #(alist->hash-table mydrums)
  \override Staff.StaffSymbol.line-positions = #'( 0 )
  \override Staff.BarLine.bar-extent = #'(-1.5 . 1.5)

  tt 1 \pp \laissezVibrer
}

```

```
\paper { tagline = ##t }
```

Tamtam 

## Tambourine example

A tambourine example, entered 'tamb'

```

\paper { tagline = ##f }

#(define mydrums '((tambourine default #f 0)))

\new DrumStaff \with { instrumentName = #"Tambourine" }

\drummode {
  \set DrumStaff.drumStyleTable = #(alist->hash-table mydrums)
  \override Staff.StaffSymbol.line-positions = #'( 0 )

```

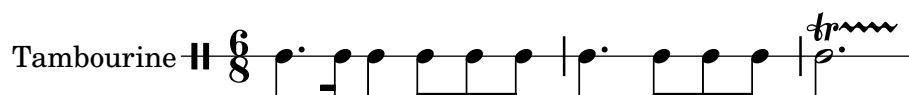


```

\override Staff.BarLine.bar-extent = #'(-1.5 . 1.5)

\time 6/8
tamb8. 16 8 8 8 8 |
tamb4. 8 8 8 |
% the trick with the scaled duration and the shorter rest
% is necessary for the correct ending of the trill-span!
tamb2.*5/6 \startTrillSpan s8 \stopTrillSpan |
}

```



## Three-sided box

This example shows how to add a markup command to get a three sided box around some text (or other markup).

```

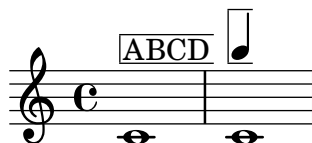
% New command to add a three sided box, with sides north, west and south
% Based on the box-stencil command defined in scm/stencil.scm
% Note that ";;" is used to comment a line in Scheme
#(define-public (NWS-box-stencil stencil thickness padding)
  "Add a box around STENCIL, producing a new stencil."
  (let* ((x-ext (interval-widen (ly:stencil-extent stencil X) padding))
        (y-ext (interval-widen (ly:stencil-extent stencil Y) padding))
        (y-rule (make-filled-box-stencil (cons 0 thickness) y-ext))
        (x-rule (make-filled-box-stencil
                  (interval-widen x-ext thickness) (cons 0 thickness))))
    ;; (set! stencil (ly:stencil-combine-at-edge stencil X 1 y-rule padding))
    (set! stencil (ly:stencil-combine-at-edge stencil X LEFT y-rule padding))
    (set! stencil (ly:stencil-combine-at-edge stencil Y UP x-rule 0.0))
    (set! stencil (ly:stencil-combine-at-edge stencil Y DOWN x-rule 0.0))
    stencil))

% The corresponding markup command, based on the \box command defined
% in scm/define-markup-commands.scm
#(define-markup-command (NWS-box layout props arg) (markup?)
  #:properties ((thickness 0.1) (font-size 0) (box-padding 0.2))
  "Draw a box round @var{arg}. Looks at @code{thickness},
@code{box-padding} and @code{font-size} properties to determine line
thickness and padding around the markup."
  (let ((pad (* (magstep font-size) box-padding))
        (m (interpret-markup layout props arg)))
    (NWS-box-stencil m thickness pad)))

% Test it:

\relative c' {
  c1^\markup { \NWS-box ABCD }
  c1^\markup { \NWS-box \note {4} #1.0 }
}

```



## Time signature in brackets

The time signature can be enclosed within brackets.

```
\relative c' ' {
  \override Staff.TimeSignature.stencil = #(lambda (grob)
    (bracketify-stencil (ly:time-signature::print grob) Y 0.1 0.2 0.1))
  \time 2/4
  a4 b8 c
}
```



## Time signature in parentheses

Enclose the time signature in parentheses.

```
\relative c' ' {
  \override Staff.TimeSignature.stencil = #(lambda (grob)
    (parenthesize-stencil (ly:time-signature::print grob) 0.1 0.4 0.4 0.1))
  \time 2/4
  a4 b8 c
}
```



## Time signature printing only the numerator as a number (instead of the fraction)

Sometimes, a time signature should not print the whole fraction (for example, 7/4), but only the numerator (digit 7 in this case). This can be easily done by using `\override Staff.TimeSignature.style = #'single-number` to change the style permanently. By using `\revert Staff.TimeSignature.style`, this setting can be reversed. To apply the single-number style to only one time signature, use the `\override` command and prefix it with a `\once`.

```
\relative c' ' {
  \time 3/4
  c4 c c
  % Change the style permanently
  \override Staff.TimeSignature.style = #'single-number
  \time 2/4
  c4 c
  \time 3/4
  c4 c c
  % Revert to default style:
  \revert Staff.TimeSignature.style
  \time 2/4
}
```

```

c4 c
% single-number style only for the next time signature
\once \override Staff.TimeSignature.style = #'single-number
\time 5/4
c4 c c c c
\time 2/4
c4 c
}

```



## Veränderung des Layouts von Verzierungen innerhalb der Noten

Das Layout von Verzierungsausdrücken kann in der Musik verändert werden mit den Funktionen `add-grace-property` und `remove-grace-property`. Das folgende Beispiel definiert die Richtung von Hälsen (Stem) für diese Verzierung, sodass die Hälse nicht immer nach unten zeigen, und ändert den Standardnotenkopf in ein Kreuz.

```

\relative c'' {
  \new Staff {
    $(remove-grace-property 'Voice 'Stem 'direction)
    $(add-grace-property 'Voice 'NoteHead 'style 'cross)
    \new Voice {
      \acciaccatura { f16 } g4
      \grace { d16 e } f4
      \appoggiatura { f,32 g a } e2
    }
  }
}

```



## User defined time signatures

New time signature styles can be defined. The time signature in the second measure should be upside down in both staves.

```

#(add-simple-time-signature-style 'topsy-turvy
  (lambda (fraction)
    (make-rotate-markup 180 (make-compound-meter-markup fraction))))

```

```
<<
```

```

\new Staff {
  \time 3/4 f'2.
  \override Score.TimeSignature.style = #'topsy-turvy
  \time 3/4 R2. \bar "|"
}
\new Staff {
  R2. e''
}

```

&gt;&gt;



## Using alternative flag styles

Alternative styles of flag on eighth and shorter notes can be displayed by overriding the `stencil` property of `Flag`. Valid values are `modern-straight-flag`, `old-straight-flag` and `flat-flag`.

```
testnotes = {
  \autoBeamOff
  c8 d16 c32 d64 \acciaccatura { c8 } d64 r4
}

\score {
  \relative c' {
    \time 2/4
    \testnotes

    \override Flag.stencil = #modern-straight-flag
    \testnotes

    \override Flag.stencil = #old-straight-flag
    \testnotes

    \override Flag.stencil = #flat-flag
    \testnotes

    \revert Flag.stencil
    \testnotes
  }
  \layout {
    indent = 0
    \context {
      \Score
      \override NonMusicalPaperColumn.line-break-permission = ##f
    }
  }
}
```



## Using grace note slashes with normal heads

The slash through the stem found in acciaccaturas can be applied in other situations.

```
\relative c' {
```

```
\override Flag.stroke-style = "grace"
c8( d2) e8( f4)
}
```



## Überbindungen für Arpeggio benutzen

Überbindungen werden teilweise benutzt, um Arpeggios zu notieren. In diesem Fall stehen die übergebundenen Noten nicht unbedingt hintereinander. Das Verhalten kann erreicht werden, indem die `tieWaitForNote`-Eigenschaft auf `#t` gesetzt wird. Diese Funktion ist auch sinnvoll, um etwa ein Tremolo mit einem Akkord zu überbinden, kann aber prinzipiell auch für normale Überbindungen eingesetzt werden

```
\relative c' {
  \set tieWaitForNote = ##t
  \grace { c16[ ~ e ~ g] ~ } <c, e g>2
  \repeat tremolo 8 { c32 ~ c' ~ } <c c,>1
  e8 ~ c ~ a ~ f ~ <e' c a f>2
  \tieUp
  c8 ~ a
  \tieDown
  \tieDotted
  g8 ~ c g2
}
```



## Expressive marks

Abschnitt “Expressive marks” in *Notationsreferenz*

### Adding beams, slurs, ties etc. when using tuplet and non-tuplet rhythms

LilyPond syntax can involve many unusual placements for parentheses, brackets etc., which might sometimes have to be interleaved.

For example, when entering a manual beam, the left square bracket has to be placed *after* the starting note and its duration, not before. Similarly, the right square bracket should directly follow the note which is to be at the end of the requested beaming, even if this note happens to be inside a tuplet section.

This snippet demonstrates how to combine manual beaming, manual slurs, ties and phrasing slurs with tuplet sections (enclosed within curly braces).

```
{
  r16[ g16 \tuplet 3/2 { r16 e'8] }
  g16( a \tuplet 3/2 { b d e' } )
  g8[( a \tuplet 3/2 { b d' } e'] ~ }
  \time 2/4
  \tuplet 5/4 { e'32\ ( a b d' e' } a'4.\ )
}
```



### Adding parentheses around an expressive mark or chordal note

The `\parenthesize` function is a special tweak that encloses objects in parentheses. The associated grob is `ParenthesesItem`.

```
\relative c' {
  c2-\parenthesize ->
  \override Parentheses.padding = #0.1
  \override Parentheses.font-size = #-4
  <d \parenthesize f a>2
}
```



### Adding timing marks to long glissandi

Skipped beats in very long glissandi are sometimes indicated by timing marks, often consisting of stems without noteheads. Such stems can also be used to carry intermediate expression markings.

If the stems do not align well with the glissando, they may need to be repositioned slightly.

```
glissandoSkipOn = {
  \override NoteColumn.glissando-skip = ##t
  \hide NoteHead
}
```

```

\override NoteHead.no-ledgers = ##t
}

glissandoSkipOff = {
  \revert NoteColumn.glissando-skip
  \undo \hide NoteHead
  \revert NoteHead.no-ledgers
}

\relative c' {
  r8 f8\glissando
  \glissandoSkipOn
  f4 g a a8\noBeam
  \glissandoSkipOff
  a8

  r8 f8\glissando
  \glissandoSkipOn
  g4 a8
  \glissandoSkipOff
  a8 |

  r4 f\glissando \<
  \glissandoSkipOn
  a4\f \>
  \glissandoSkipOff
  b8\! r |
}

```



## Adjusting slur positions vertically

Using `\override Slur.positions` it is possible to set the vertical position of the start and end points of a slur to absolute values (or rather, forcing LilyPond's slur algorithm to consider these values as desired). In many cases, this means a lot of trial and error until good values are found. You probably have tried the `\offset` command next just to find out that it doesn't work for slurs, emitting a warning instead.

The code in this snippet allows you to tweak the vertical start and end positions by specifying *relative* changes, similar to `\offset`.

```

Syntax: \offsetPositions #'(dy1 . dy2)

offsetPositions =
#(define-music-function (offsets) (number-pair?)
  #{
    \once \override Slur.control-points =
      #(\lambda (grob)
        (match-let (((_ . y1) _ _ (_ . y2))
          (ly:slur::calc-control-points grob))
          ((off1 . off2) offsets))

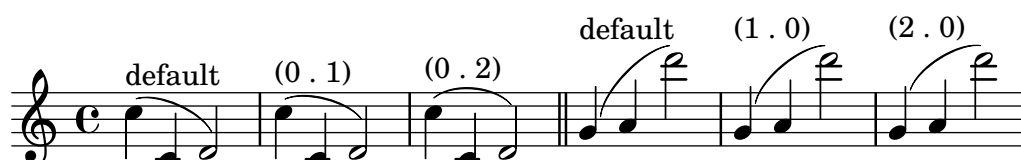
```

```

      (set! (ly:grob-property grob 'positions)
        (cons (+ y1 off1) (+ y2 off2)))
      (ly:slur::calc-control-points grob)))
    #})

\relative c' {
  c4(~"default" c, d2)
  \offsetPositions #'(0 . 1)
  c'4(~"(0 . 1)" c, d2)
  \offsetPositions #'(0 . 2)
  c'4(~"(0 . 2)" c, d2)
  \bar "||"
  g4(~"default" a d'2)
  \offsetPositions #'(1 . 0)
  g,,4(~"(1 . 0)" a d'2)
  \offsetPositions #'(2 . 0)
  g,,4(~"(2 . 0)" a d'2)
}

```



## Das Aussehen von unbestimmten Glissandi anpassen

Die `shortest-duration-space`-Eigenschaft kann verändert werden, um das Aussehen von unbestimmten Glissandi anzupassen.

```

\relative c' {
  \override Score.SpacingSpanner.shortest-duration-space = 4.0
  c2-\bendAfter 5
  c2-\bendAfter -4.75
  c2-\bendAfter 8.5
  c2-\bendAfter -6
}

```



## Aligning the ends of hairpins to NoteColumn directions

The ends of hairpins may be aligned to the `LEFT`, `CENTER` or `RIGHT` of `NoteColumn` grobs by overriding the property `endpoint-alignments`, which is a pair of numbers representing the left and right ends of the hairpin. `endpoint-alignments` are expected to be directions (either -1, 0 or 1). Other values will be transformed with a warning. The right end of a hairpin terminating at a rest is not affected, always ending at the left edge of the rest.

```

{
  c'2\< <c' d'\>! |
  \override Hairpin.endpoint-alignments = #'(1 . -1)
  c'2\< <c' d'\>! |
  \override Hairpin.endpoint-alignments = #`(,LEFT . ,CENTER)
}

```



```
c'2\< <c' d'>\! |
}
```



## Alternative breve notes

Breve notes are also available with two vertical lines on each side of the notehead instead of one line and in baroque style.

```
\relative c' ' {
  \time 4/2
  c\breve |
  \override Staff.NoteHead.style = #'altdefault
  b\breve
  \override Staff.NoteHead.style = #'baroque
  b\breve
  \revert Staff.NoteHead.style
  a\breve
}
```

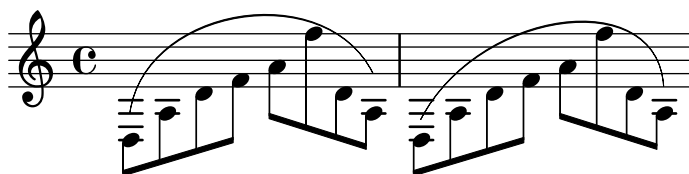


## Asymmetric slurs

Slurs can be made asymmetric to match an asymmetric pattern of notes better.

```
slurNotes = { d,8( a' d f a f' d, a) }
```

```
\relative c' {
  \stemDown
  \slurUp
  \slurNotes
  \once \override Slur.eccentricity = #3.0
  \slurNotes
}
```



## Breathing signs

Breathing signs are available in different tastes: commas (default), ticks, vees and „railroad tracks“ (caesura).

```
\new Staff \relative c' ' {
  \key es \major
  \time 3/4
  % this bar contains no \breathe
```

```

<< { g4 as g } \ { es4 bes es } >> |
% Modern notation:
% by default, \breathe uses the rcomma, just as if saying:
% \override BreathingSign.text =
%   #(make-musicglyph-markup "scripts.rcomma")
<< { g4 as g } \ { es4 \breathe bes es } >> |

% rvarcomma and lvarcomma are variations of the default rcomma
% and lcomma
% N.B.: must use Staff context here, since we start a Voice below
\override Staff.BreathingSign.text =
  \markup { \musicglyph "scripts.rvarcomma" }
<< { g4 as g } \ { es4 \breathe bes es } >> |

% raltcomma and laltcomma are alternative variations of the
% default rcomma and lcomma
\override Staff.BreathingSign.text =
  \markup { \musicglyph "scripts.raltcomma" }
<< { g4 as g } \ { es4 \breathe bes es } >> |

% vee
\override BreathingSign.text =
  \markup { \musicglyph "scripts.upbow" }
es8[ d es f g] \breathe f |

% caesura
\override BreathingSign.text =
  \markup { \musicglyph "scripts.caesura.curved" }
es8[ d] \breathe es[ f g f] |
es2 r4 \bar "||"
}

```



## Broken Crescendo Hairpin

In order to make parts of a crescendo hairpin invisible, the following method is used: A white rectangle is drawn on top of the respective part of the crescendo hairpin, making it invisible. The rectangle is defined as postscript code within a text markup.

The markup command with-dimensions tells LilyPond to consider only the bottom edge of the rectangle when spacing it against the hairpin. The property staff-padding prevents the rectangle from fitting between the hairpin and staff.

Make sure the hairpin is in a lower layer than the text markup to draw the rectangle over the hairpin.

```

\relative c' {
  <<
  {
    \dynamicUp
    r2 r16 c'8.\pp r4
  }
}

```

```

}
\\
{
  \override DynamicLineSpanner.layer = #0
  des,2\mf\< ~
  \override TextScript.layer = #2
  \once\override TextScript.staff-padding = #6
  \once\override TextScript.vertical-skylines = #'()
  des16_\markup \with-dimensions #'(2 . 7) #'(0 . 0)
    \with-color #white
    \filled-box #'(2 . 7) #'(0 . 2) #0
  r8. des4 ~ des16->\sff r8.
}
>>
}

```



## Caesura ("railtracks") with fermata

A caesura is sometimes denoted by a double „railtracks“ breath mark with a fermata sign positioned above. This snippet shows an optically pleasing combination of railtracks and fermata.

```

\relative c' {
  c2.
  % construct the symbol
  \override BreathingSign.text = \markup {
    \override #'(direction . 1)
    \override #'(baseline-skip . 1.8)
    \dir-column {
      \translate #'(0.155 . 0)
      \center-align \musicglyph "scripts.caesura.curved"
      \center-align \musicglyph "scripts.ufermata"
    }
  }
  \breathe c4
  % set the breath mark back to normal
  \revert BreathingSign.text
  c2. \breathe c4
  \bar "|"
}

```



## Center text below hairpin dynamics

This example provides a function to typeset a hairpin (de)crescendo with some additional text below it, such as „molto“ or „poco“. The added text will change the direction according to the direction of the hairpin. The Hairpin is aligned to DynamicText.

The example also illustrates how to modify the way an object is normally printed, using some Scheme code.

```
\paper { tagline = ##f }

hairpinWithCenteredText =
#(define-music-function (text) (markup?)
  #{
    \once \override Voice.Hairpin.after-line-breaking =
      #(lambda (grob)
        (let* ((stencil (ly:hairpin::print grob))
              (par-y (ly:grob-parent grob Y))
              (dir (ly:grob-property par-y 'direction))
              (staff-line-thickness
                (ly:output-def-lookup (ly:grob-layout grob) 'line-thickness))
              (new-stencil (ly:stencil-aligned-to
                            (ly:stencil-combine-at-edge
                              (ly:stencil-aligned-to stencil X CENTER)
                              Y dir
                              (ly:stencil-aligned-to
                                (grob-interpret-markup
                                  grob
                                  (make-fontsize-markup
                                    (magnification->font-size
                                      (+ (ly:staff-symbol-staff-space grob)
                                        (/ staff-line-thickness 2)))
                                      text)) X CENTER))
                                X LEFT))
                              (staff-space (ly:output-def-lookup
                                            (ly:grob-layout grob) 'staff-space))
                              (par-x (ly:grob-parent grob X))
                              (dyn-text (grob::has-interface par-x 'dynamic-text-interface))
                              (dyn-text-stencil-x-length
                                (if dyn-text
                                  (interval-length
                                    (ly:stencil-extent (ly:grob-property par-x 'stencil) X))
                                    0))
                                (x-shift
                                  (if dyn-text
                                    (-
                                      (+ staff-space dyn-text-stencil-x-length)
                                      (* 0.5 staff-line-thickness)) 0)))
                            new-stencil
                            x-shift X))))
      (ly:grob-set-property! grob 'Y-offset 0)
      (ly:grob-set-property! grob 'stencil
        (ly:stencil-translate-axis
          new-stencil
          x-shift X))))
```

```

#})

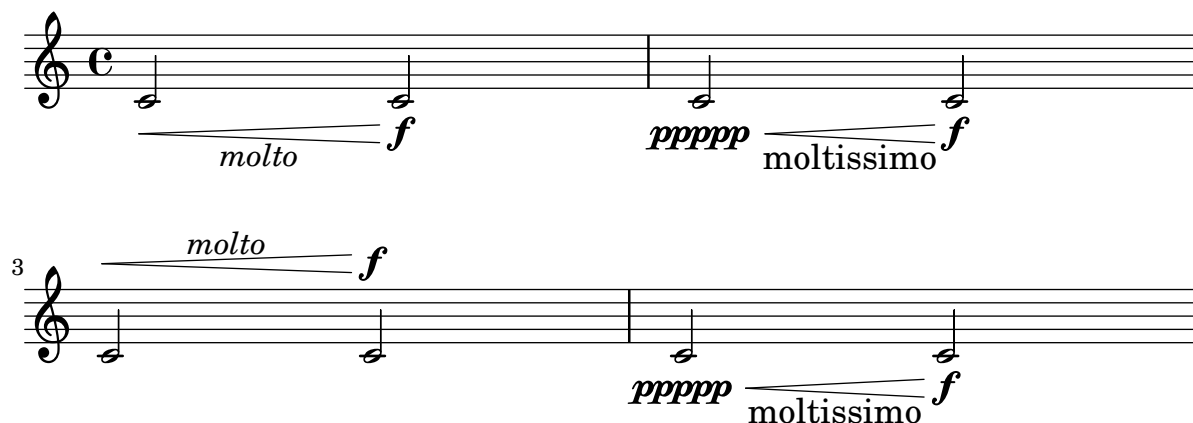
hairpinMolto =
\hairpinWithCenteredText \markup { \italic molto }

hairpinMore =
\hairpinWithCenteredText \markup { \larger moltissimo }

\layout { ragged-right = ##f }

\relative c' {
  \hairpinMolto
  c2\< c\f
  \hairpinMore
  c2\ppppp\< c\f
  \break
  \hairpinMolto
  c2^\< c\f
  \hairpinMore
  c2\ppppp\< c\f
}

```



## Text und Strecker-Stile für Dynamik-Texte ändern

Der Text, der für Crescendo und Decrescendo gesetzt wird, kann geändert werden, indem man die Eigenschaften `crescendoText` und `decrescendoText` verändert. Der Stil des Streckers kann auch geändert werden, indem die `'style`-Eigenschaft des `DynamicTextSpanner` beeinflusst wird. Der Standardwert ist `'hairpin`, andere Möglichkeiten sind `'line`, `'dashed-line` und `'dotted-line`.

```

\relative c'' {
  \set crescendoText = \markup { \italic { cresc. poco } }
  \set crescendoSpanner = #'text
  \override DynamicTextSpanner.style = #'dotted-line
  a2\< a
  a2 a
  a2 a
  a2 a\mf
}

```



## Changing the appearance of a slur from solid to dotted or dashed

The appearance of slurs may be changed from solid to dotted or dashed.

```
\relative c' {
  c4( d e c)
  \slurDotted
  c4( d e c)
  \slurSolid
  c4( d e c)
  \slurDashed
  c4( d e c)
  \slurSolid
  c4( d e c)
}
```



## Das Atemzeichen-Symbol verändern

Das Schriftzeichen für das Atemzeichen kann verändert werden, indem die Text-Eigenschaft des BreathingSign-Layoutobjekts mit einer beliebigen Textbeschriftung definiert wird.

```
\relative c' {
  c2
  \override BreathingSign.text =
    \markup { \musicglyph "scripts.rvarcomma" }
  \breathe
  d2
}
```



## Changing the number of augmentation dots per note

The number of augmentation dots on a single note can be changed independently of the dots placed after the note.

```
\relative c' {
  c4.. a16 r2 |
  \override Dots.dot-count = 4
  c4.. a16 r2 |
  \override Dots.dot-count = 0
  c4.. a16 r2 |
  \revert Dots.dot-count
  c4.. a16 r2 |
}
```

}



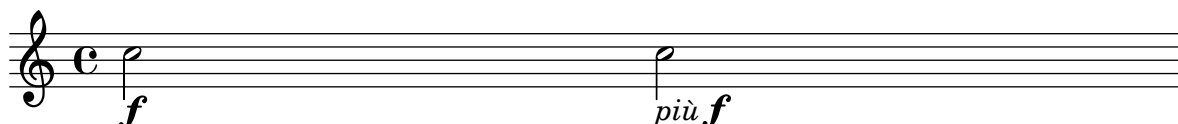
## Combining dynamics with markup texts

Some dynamics may involve text indications (such as „più forte“ or „piano subito“). These can be produced using a `\markup` block.

```
piuF = \markup { \italic più \dynamic f }
```

```
\layout { ragged-right = ##f }
```

```
\relative c' ' {  
  c2\f c-\piuF  
}
```



## Moderne Glissandi

Ein modernes Glissando ohne eine Endnote kann gesetzt werden, indem eine Kadenz eingesetzt wird und die Endnote unsichtbar gemacht wird.

```
\relative c' ' {  
  \time 3/4  
  \override Glissando.style = #'zigzag  
  c4 c  
  \cadenzaOn  
  c4\glissando  
  \hideNotes  
  c,,4  
  \unHideNotes  
  \cadenzaOff  
  \bar "|" }  
}
```



## Controlling spanner visibility after a line break

The visibility of spanners which end on the first note following a line break is controlled by the after-line-breaking callback `ly:spanner::kill-zero-spanned-time`.

For objects such as glissandos and hairpins, the default behaviour is to hide the spanner after a break; disabling the callback will allow the left-broken span to be shown.

Conversely, spanners which are usually visible, such as text spans, can be hidden by enabling the callback.

```
\paper {
```

```

    ragged-right = ##t
    tagline = ##f
}

\relative c' {
  \override Hairpin.to-barline = ##f
  \override Glissando.breakable = ##t
  % show hairpin
  \override Hairpin.after-line-breaking = ##t
  % hide text span
  \override TextSpanner.after-line-breaking =
    #ly:spanner::kill-zero-spanned-time
  e2\<\startTextSpan
  % show glissando
  \override Glissando.after-line-breaking = ##t
  f2\glissando
  \break
  f,1\!\stopTextSpan
}

```



## Die vertikale Anordnung von Beschriftungen kontrollieren

Die vertikale Anordnung von Beschriftungen wird mit der 'script-priority'-Eigenschaft kontrolliert. Um so kleiner die Zahl, umso näher wird die Beschriftung in Bezug auf die Note gesetzt. In diesem Beispiel hat das TextScript-Objekt (das Kreuz) zuerst die niedrigste Priorität, wird also auch am niedrigsten in dem ersten Beispiel gesetzt. Im zweiten Fall hat der Praller (das Script) die niedrigste Priorität, darum wird er am nächsten zum System gesetzt. Wenn zwei Objekte die gleiche Priorität haben, wird ihre Reihenfolge anhand ihres Auftretens in der Quelldatei entschieden.

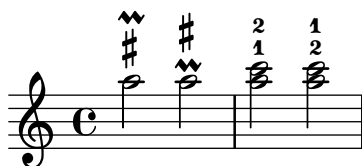
```

\relative c' {
  \once \override TextScript.script-priority = -100
  a2^\prall^\markup { \sharp }

  \once \override Script.script-priority = -100
  a2^\prall^\markup { \sharp }

  \set fingeringOrientations = #'(up)
  <c-2 a-1>2
  <a-1 c>\tweak script-priority -100 -2>2
}

```





## Einen Doppelschlag mit Vorhalt erstellen

Einen Doppelschlag mit Vorhalt zu erstellen, wobei die untere Note das Vorzeichen benutzt, erfordert einige Einstellungsänderungen. Die `outside-staff-priority`-Eigenschaft muss auf falsch (`#f`) gesetzt werden, weil sie sonst über die Eigenschaft `avoid-slur property` dominieren würde. Der Wert von `halign` wird benutzt, um den Doppelschlag horizontal zu positionieren.

```
\relative c' {
  \after 2*2/3 \turn c2( d4) r |
  \after 4 \turn c4.( d8)
  \after 4
  {
    \once \set suggestAccidentals = ##t
    \once \override AccidentalSuggestion.outside-staff-priority = ##f
    \once \override AccidentalSuggestion.avoid-slur = #'inside
    \once \override AccidentalSuggestion.font-size = -3
    \once \override AccidentalSuggestion.script-priority = -1
    \once \hideNotes
    cis8\turn \noBeam
  }
  d4.( e8)
}
```



## Arpeggios zwischen unterschiedlichen Stimmen erzeugen

Ein Arpeggio kann zwischen Noten aus unterschiedlichen Stimmen auf demselben System gezogen werden, wenn der `Span_arpeggio_engraver` in den Staff-Kontext verschoben wird:

```
\new Staff \with {
  \consists "Span_arpeggio_engraver"
}
\relative c' {
  \set Staff.connectArpeggios = ##t
  <<
    { <e' g>4\arpeggio <d f> <d f>2 }
    \\\
    { <d, f>2\arpeggio <g b>2 }
  >>
}
```



## Arpeggio über mehrere Systeme in anderen Kontexten

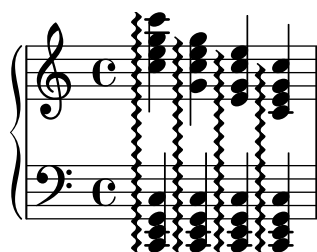
Arpeggio über mehrere Systeme können in anderen Kontexten als dem `PianoStaff` erstellt werden, wenn der `Span_arpeggio_engraver` in den `Score`-Kontext eingefügt wird.

```
\new PianoStaff \relative c' <<
  \set PianoStaff.connectArpeggios = ##t
```

```

\new Staff {
  <c e g c>4\arpeggio
  <g c e g>4\arpeggio
  <e g c e>4\arpeggio
  <c e g c>4\arpeggio
}
\new Staff {
  \clef bass
  \repeat unfold 4 {
    <c,, e g c>4\arpeggio
  }
}
>>

```



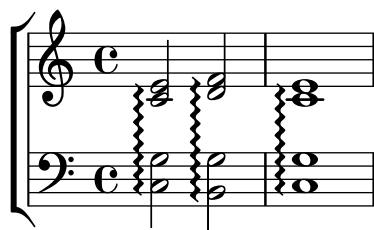
## Arpeggio zwischen Systemen in einem Klaviersystem erstellen

In einem Klaviersystem (PianoStaff) ist es möglich, ein Arpeggio zwischen beiden Systemen zu verbinden, indem die `PianoStaff.connectArpeggios`-Eigenschaft gesetzt wird.

```

\score {
  \new ChoirStaff {
    \set Score.connectArpeggios = ##t
    <<
      \new Voice \relative c' {
        <c e>2\arpeggio
        <d f>2\arpeggio
        <c e>1\arpeggio
      }
      \new Voice \relative c {
        \clef bass
        <c g'>2\arpeggio
        <b g'>2\arpeggio
        <c g'>1\arpeggio
      }
    >>
  }
  \layout {
    \context {
      \Score
      \consists "Span_arpeggio_engraver"
    }
  }
}

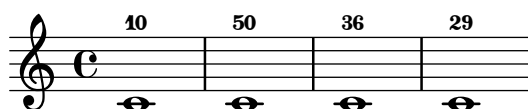
```



## Creating double-digit fingerings

Creating fingerings larger than 5 is possible.

```
\relative c' {
  c1-10
  c1-50
  c1-36
  c1-29
}
```



## Creating "real" parenthesized dynamics

Although the easiest way to add parentheses to a dynamic mark is to use a `\markup` block, this method has a downside: the created objects will behave like text markups, and not like dynamics.

However, it is possible to create a similar object using the equivalent Scheme code (as described in the Notation Reference), combined with the `make-dynamic-script` function. This way, the markup will be regarded as a dynamic, and therefore will remain compatible with commands such as `\dynamicUp` or `\dynamicDown`.

```
paren =
#(define-event-function (dyn) (ly:event?)
  (make-dynamic-script
    #{ \markup \concat {
      \normal-text \italic \fontsize #2 (
        \pad-x #0.2 #(ly:music-property dyn 'text)
        \normal-text \italic \fontsize #2 )
      }
    #}))
```

```
\relative c' {
  c4\paren\f c c \dynamicUp c\paren\p
}
```





```

\override TextSpanner.style = #'dashed-line
\override TextSpanner.bound-details.left.text =
  \markup { \draw-line #'(0 . 1) }
\override TextSpanner.bound-details.right.text =
  \markup { \draw-line #'(0 . -2) }
\once \override TextSpanner.bound-details.right.padding = #-2

a4 \startTextSpan
b4 c
a4 \stopTextSpan

\set Staff.middleCPosition = #-13
\override TextSpanner.dash-period = #10
\override TextSpanner.dash-fraction = #0.5
\override TextSpanner.thickness = #10
a4 \startTextSpan
b4 c
a4 \stopTextSpan
}

```



## Eigene Dynamiktextspanner nachgestellt

Die Nachstellung funktioniert für eigene Crescendo-Textstrecke. Die Strecke sollten an der ersten Note eines Taktes beginnen. Man muss `-\mycresc` benutzen, sonst wird der Beginn des Streckers der nächsten Note zugewiesen.

```

% Two functions for (de)crescendo spanners where you can explicitly
% give the spanner text.

```

```

mycresc =
#(define-music-function (mymarkup) (markup?)
  (make-music 'CrescendoEvent
    'span-direction START
    'span-type 'text
    'span-text mymarkup))

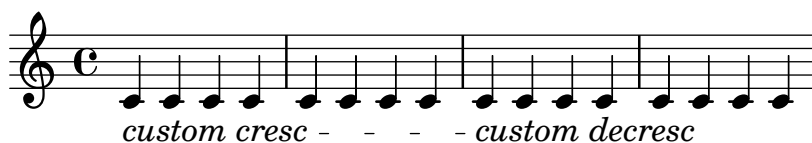
mydecresc =
#(define-music-function (mymarkup) (markup?)
  (make-music 'DecrescendoEvent
    'span-direction START
    'span-type 'text
    'span-text mymarkup))

```

```

\relative c' {
  c4-\mycresc "custom cresc" c4 c4 c4 |
  c4 c4 c4 c4 |
  c4-\mydecresc "custom decresc" c4 c4 c4 |
  c4 c4\! c4 c4
}

```



## Dynamiktextstrecke nachgestellt

Die `\cresc`, `\dim` und `\decresc` Strecke können undefiniert werden, um nachgestellt zu funktionieren und einen Textstrecke zu produzieren. Eigene Strecke können auch einfach definiert werden. Klammer- und Textcrescendi können einfach vermischt werden. `\<` und `\>` erstellen normalerweise Klammern, `\cresc` usw. dagegen normalerweise Textspanner.

*% Some sample text dynamic spanners, to be used as postfix operators*

```
crpoco =
#(make-music 'CrescendoEvent
      'span-direction START
      'span-type 'text
      'span-text "cresc. poco a poco")
```

```
\relative c' {
  c4\cresc d4 e4 f4 |
  g4 a4\! b4\crpoco c4 |
  c4 d4 e4 f4 |
  g4 a4\! b4\< c4 |
  g4\dim a4 b4\decresc c4\!
}
```



## Glissando kann Grobs überspringen

NoteColumn-Grobs können bei Glissandos übersprungen werden.

```
\relative c' {
  a2 \glissando
  \once \override NoteColumn.glissando-skip = ##t
  f''4 d,
}
```



## Hairpins with different line styles

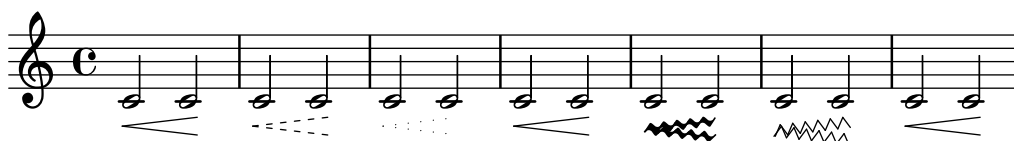
Hairpins can take any style from line-interface - dashed-line, dotted-line, line, trill or zigzag.

```
\relative c' {
  c2\< c\!
  \override Hairpin.style = #'dashed-line
  c2\< c\!
  \override Hairpin.style = #'dotted-line
  c2\< c\!
```

```

\override Hairpin.style = #'line
c2\< c\!
\override Hairpin.style = #'trill
c2\< c\!
\override Hairpin.style = #'zigzag
c2\< c\!
\revert Hairpin.style
c2\< c\!
}

```



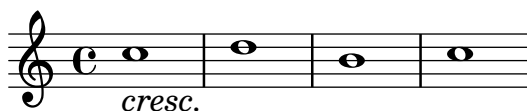
## Crescendo-Linien von Dynamik-Texten unterdrücken

Dynamik-Texte (wie *cresc.* und *dim.*) werden mit einer gestrichelten Linie gesetzt, die ihre Dauer anzeigt. Diese Linie kann auf folgende Weise unterdrückt werden:

```

\relative c' {
  \override DynamicTextSpanner.style = #'none
  \crescTextCresc
  c1\< | d | b | c\!
}

```



## Horizontally aligning custom dynamics (e.g. "sempre pp", "piu f", "subito p")

Some dynamic expressions involve additional text, like „sempre **pp**“. Since dynamics are usually centered under the note, the `\pp` would be displayed way after the note it applies to.

To correctly align the „sempre **pp**“ horizontally so that it is aligned as if it were only the `\pp`, there are several approaches:

- Simply use `\once\override DynamicText.X-offset = #-9.2` before the note with the dynamics to manually shift it to the correct position. Drawback: This has to be done manually each time you use that dynamic markup...
- Add some padding (`\hspace{7.1pt}`) into the definition of your custom dynamic mark so that after LilyPond center-aligns it, it is already correctly aligned. Drawback: The padding really takes up that space and does not allow any other markup or dynamics to be shown in that position.
- Shift the dynamic script `\once\override ... .X-offset = ....` Drawback: `\once\override` is needed for every invocation!
- Set the dimensions of the additional text to 0 (using `\with-dimensions '(0 . 0) '(0 . 0)`). Drawback: For LilyPond, „sempre“ has no extent now. This means it might put other stuff there, causing collisions (which are not detected by LilyPond’s collision detection algorithm!). There also seems to be some spacing, so it is not exactly the same alignment as without the additional text.
- Add an explicit shift directly inside the scheme function for the dynamic script.

- Set an explicit alignment inside the dynamic script. By default, this won't have any effect, only if one sets `X-offset`! Drawback: One needs to set `DynamicText.X-offset`, which will apply to all dynamic texts! Also, it is aligned at the right edge of the additional text, not at the center of `\pp`.

```
\paper {
  ragged-right = ##f
  indent = 2.5\cm
  tagline = ##f
}
```

```
% Solution 1: Using a simple markup with a particular halign value
% Drawback: It's a markup, not a dynamic command, so \dynamicDown
%           etc. will have no effect
semppMarkup = \markup { \halign #1.4 \italic "sempre" \dynamic "pp" }
```

```
% Solution 2: Using a dynamic script & shifting with
%           \once \override ...X-offset = ..
% Drawback: \once \override needed for every invocation
semppK =
#(make-dynamic-script
  (markup #:line
    (#:normal-text
      #:italic "sempre"
      #:dynamic "pp"))))
```

```
% Solution 3: Padding the dynamic script so the center-alignment
%           puts it at the correct position
% Drawback: the padding really reserves the space, nothing else can be there
semppT =
#(make-dynamic-script
  (markup #:line
    (#:normal-text
      #:italic "sempre"
      #:dynamic "pp"
      #:hspace 7.1))))
```

```
% Solution 4: Dynamic, setting the dimensions of the additional text to 0
% Drawback: To lilypond "sempre" has no extent, so it might put
%           other stuff there => collisions
% Drawback: Also, there seems to be some spacing, so it's not exactly the
%           same alignment as without the additional text
semppM =
#(make-dynamic-script
  (markup #:line
    (#:with-dimensions '(0 . 0) '(0 . 0)
      #:right-align
      #:normal-text
      #:italic "sempre"
      #:dynamic "pp"))))
```

```
% Solution 5: Dynamic with explicit shifting inside the scheme function
```



```

semppG =
#(make-dynamic-script
  (markup #:hspace 0
    #:translate '(-18.85 . 0)
    #:line (#:normal-text
      #:italic "sempre"
      #:dynamic "pp")))

% Solution 6: Dynamic with explicit alignment. This has only effect
%           if one sets X-offset!
% Drawback: One needs to set DynamicText.X-offset!
% Drawback: Aligned at the right edge of the additional text,
%           not at the center of pp
semppMII =
#(make-dynamic-script
  (markup #:line (#:right-align
    #:normal-text
    #:italic "sempre"
    #:dynamic "pp")))

\new StaffGroup <<
  \new Staff = "s" \with { instrumentName = \markup \column { Normal } }
  <<
    \relative c'' {
      \key es \major
      c4\pp c\p c c | c\ff c c\pp c
    }
  >>
  \new Staff = "sMarkup" \with {
    instrumentName = \markup \column { Normal markup }
  }
  <<
    \relative c'' {
      \key es \major
      c4-\semppMarkup c\p c c | c\ff c c-\semppMarkup c
    }
  >>
  \new Staff = "sK" \with {
    instrumentName = \markup \column { Explicit shifting }
  }
  <<
    \relative c'' {
      \key es \major
      \once \override DynamicText.X-offset = #-9.2
      c4\semppK c\p c c
      c4\ff c
      \once \override DynamicText.X-offset = #-9.2
      c4\semppK c
    }
  >>
  \new Staff = "sT" \with {
    instrumentName = \markup \column { Right padding }

```

```

}
<<
  \relative c'' {
    \key es \major
    c4\semppT c\p c c | c\ff c c\semppT c
  }
>>
\new Staff = "sM" \with {
  instrumentName = \markup \column { Set dimension "to zero" }
}
<<
  \relative c'' {
    \key es \major
    c4\semppM c\p c c | c\ff c c\semppM c
  }
>>
\new Staff = "sG" \with {
  instrumentName = \markup \column { Shift inside dynamics }
}
<<
  \relative c'' {
    \key es \major
    c4\semppG c\p c c | c\ff c c\semppG c
  }
>>
\new Staff = "sMII" \with {
  instrumentName = \markup \column { Alignment inside dynamics }
}
<<
  \relative c'' {
    \key es \major
    % Setting to ##f (false) gives the same result
    \override DynamicText.X-offset = #0
    c4\semppMII c\p c c | c\ff c c\semppMII c
  }
>>
>>

\layout { \override Staff.InstrumentName.self-alignment-X = #LEFT }

```

Normal	
Normal markup	
Explicit shifting	
Right padding	
Set dimension to zero	
Shift inside dynamics	
Alignment inside dynamics	

## Eine Zäsur einfügen

Zäsurzeichen können erstellt werden, indem die 'text'-Eigenschaft des BreathingSign-Objektes verändert wird. Ein gekrümmtes Zäsurzeichen ist auch möglich.

```
\relative c' {
  \override BreathingSign.text = \markup {
    \musicglyph "scripts.caesura.straight"
  }
  c8 e4. \breathe g8. e16 c4

  \override BreathingSign.text = \markup {
    \musicglyph "scripts.caesura.curved"
  }
  g8 e'4. \breathe g8. e16 c4
}
```



## Laissez vibrer ties

Laissez vibrer ties have a fixed size. Their formatting can be tuned using 'tie-configuration.

```
\relative c' {
  <c e g>4\laissezVibrer r <c f g>\laissezVibrer r
  <c d f g>4\laissezVibrer r <c d f g>4.\laissezVibrer r8
}
```

```

<c d e f>4\laissezVibrer r
\override LaissezVibrerTieColumn.tie-configuration
  = #'((-7 . ,DOWN)
        (-5 . ,DOWN)
        (-3 . ,UP)
        (-1 . ,UP))
<c d e f>4\laissezVibrer r
}

```



## Line arrows

Arrows can be applied to text-spanners and line-spanners (such as the Glissando).

```

\relative c' {
  \override TextSpanner.bound-padding = #1.0
  \override TextSpanner.style = #'line
  \override TextSpanner.bound-details.right.arrow = ##t
  \override TextSpanner.bound-details.left.text = #"fof"
  \override TextSpanner.bound-details.right.text = #"gag"
  \override TextSpanner.bound-details.right.padding = #0.6

  \override TextSpanner.bound-details.right.stencil-align-dir-y = #CENTER
  \override TextSpanner.bound-details.left.stencil-align-dir-y = #CENTER

  \override Glissando.bound-details.right.arrow = ##t
  \override Glissando.arrow-length = #0.5
  \override Glissando.arrow-width = #0.25

  a8\startTextSpan gis a4 b\glissando b,
  g'4 c\stopTextSpan c2
}

```



## Legatobögen mit kompliziertem Strichelmuster

definieren

Legatobögen können mit einem komplizierten Strichelmuster gesetzt werden, indem die dash-definition-Eigenschaft definiert wird. dash-definition ist eine Liste bestehend aus dash-elements-Elementen. Ein dash-element ist eine Liste an Parametern, die das Strichverhalten für einen Abschnitt des Legatobogens definieren.

Der Bogen wird nach dem Bezierparameter t definiert, welcher von 0 am linken Ende des Bogens zu 1 am rechten Ende des Bogens reicht. dash-element ist eine Liste (start-t stop-t dash-Unterbrechung dash-Abschnitt). Die Region des Bogens von start-t bis stop-t hat eine Unterbrechung von dash-Unterbrechung von jedem dash-Abschnitt-Schwarzabschnitt. dash-Abschnitt ist in Notenlinienzwischenräumen definiert. dash-Abschnitt ist auf 1 für einen durchgehenden Bogen gesetzt.

```

\relative c' {
  \once \override
    Slur.dash-definition = #'((0 0.3 0.1 0.75)
                               (0.3 0.6 1 1)
                               (0.65 1.0 0.4 0.75))

  c4( d e f)
  \once \override
    Slur.dash-definition = #'((0 0.25 1 1)
                               (0.3 0.7 0.4 0.75)
                               (0.75 1.0 1 1))

  c4( d e f)
}

```



## Die Standardwerte der Abkürzungen von Artikulationen verändern

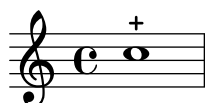
Die Abkürzungen sind in der Datei `ly/script-init.ly` definiert, wo den Variablen `dashHat`, `dashPlus`, `dashDash`, `dashBar`, `dashLarger`, `dashDot` und `dashUnderscore` Standardwerte zugewiesen werden. Diese Standardwerte können verändert werden. Um zum Beispiel die Abkürzung `+-` (`dashPlus`) mit dem Triller anstatt mit dem `+`-Symbol zu assoziieren, muss der Wert `trill` der Variable `dashPlus` zugewiesen werden:

```
\paper { tagline = ##f }
```

```
\relative c' { c1-+ }
```

```
dashPlus = \trill
```

```
\relative c' { c1-+ }
```



## Moving slur positions vertically

The vertical position of a slur can be adjusted using the `positions` property of `Slur`. The property has 2 parameters, the first referring to the left end of the slur and the second to the right. The values of the parameters are not used by LilyPond to make an exact movement of the slur - instead it selects what placement of the slur looks best, taking into account the parameter values. Positive values move the slur up, and are appropriate for notes with stems down. Negative values move downward slurs further down.

```

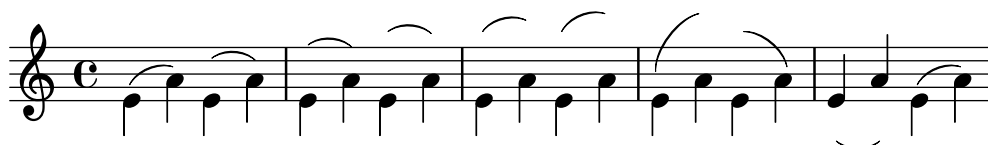
\relative c' {
  \stemDown
  e4( a)
}

```

```

\override Slur.positions = #'(1 . 1)
e4( a)
\override Slur.positions = #'(2 . 2)
e4( a)
\override Slur.positions = #'(3 . 3)
e4( a)
\override Slur.positions = #'(4 . 4)
e4( a)
\override Slur.positions = #'(5 . 5)
e4( a)
\override Slur.positions = #'(0 . 5)
e4( a)
\override Slur.positions = #'(5 . 0)
e4( a)
\stemUp
\override Slur.positions = #'(-5 . -5)
e4( a)
\stemDown
\revert Slur.positions
e4( a)
}

```



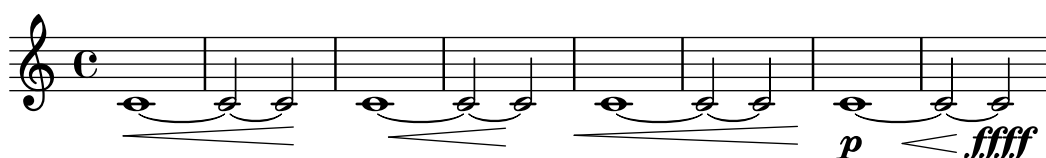
## Moving the ends of hairpins

The ends of hairpins may be offset by setting the `shorten-pair` property of the `Hairpin` object. Positive values move endpoints to the right, negative to the left. Unlike the `minimum-length` property, this property only affects the appearance of the hairpin; it does not adjust horizontal spacing (including the position of bounding dynamics). This method is thus suitable for fine-tuning a hairpin within its allotted space.

```

{
  c'1~\<
  c'2~ c'\!
  \once \override Hairpin.shorten-pair = #'(2 . 2)
  c'1~\<
  c'2~ c'\!
  \once \override Hairpin.shorten-pair = #'(-2 . -2)
  c'1~\<
  c'2~ c'\!
  c'1~\p-\tweak shorten-pair #'(2 . 0)\<
  c'2~ c'\ffff
}

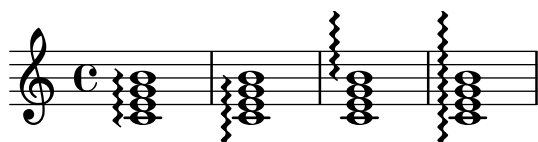
```



## Positioning arpeggios

If you need to extend or shorten an arpeggio, you can modify the upper and lower start positions independently.

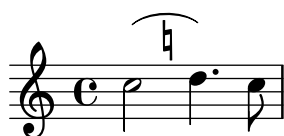
```
\relative c' {
  <c e g b>1\arpeggio
  \once \override Arpeggio.positions = #'(-5 . 0)
  <c e g b>1\arpeggio
  \once \override Arpeggio.positions = #'(0 . 5)
  <c e g b>1\arpeggio
  \once \override Arpeggio.positions = #'(-5 . 5)
  <c e g b>1\arpeggio
}
```



## Textbeschriftung innerhalb von Bögen positionieren

Textbeschriftung kann innerhalb von Bögen gesetzt werden, wenn die `outside-staff-priority`-Eigenschaft auf falsch gesetzt wird.

```
\relative c' {
  \override TextScript.avoid-slur = #'inside
  \override TextScript.outside-staff-priority = ##f
  c2(~\markup { \halign #-10 \natural } d4.) c8
}
```



## Printing hairpins in various styles

Hairpin dynamics may be created in a variety of styles.

```
\paper { tagline = ##f }
```

```
\relative c' {
  \override Hairpin.stencil = #flared-hairpin
  a4< a a a\ff
  a4\p< a a a\ff
  a4\sffz< a a a\!
  \override Hairpin.stencil = #constante-hairpin
  a4< a a a\ff
  a4\p< a a a\ff
  a4\sffz< a a a\!
  \override Hairpin.stencil = #flared-hairpin
  a4> a a a\ff
  a4\p> a a a\ff
  a4\sffz> a a a\!
  \override Hairpin.stencil = #constante-hairpin
}
```

```

a4\> a a a\f
a4\p\> a a a\ff
a4\sفز\> a a a\!
}

```



## Crescendo Klammern al niente schreiben

Crescendo-Klammern können mit einem kleinen Kreis vor der Spitze notiert werden (al niente = bis zum Nichts), indem die circled-tip-Eigenschaft des Hairpin-Objekts auf #t gesetzt wird.

```

\relative c'' {
  \override Hairpin.circled-tip = ##t
  c2\< c\!
  c4\> c\< c2\!
}

```



## Metronom- und Übungszeichen unter das System setzen

Normalerweise werden Metronom- und Übungszeichen über dem Notensystem ausgegeben. Um sie unter das System zu setzen, muss die direction-Eigenschaft von MetronomeMark oder RehearsalMark entsprechend verändert werden.

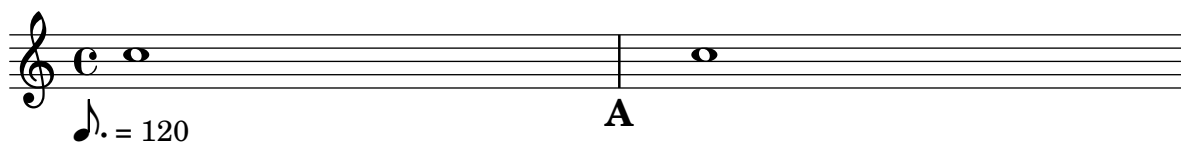
```

\layout {
  indent = 0
  ragged-right = ##f
}

{
  % Metronome marks below the staff
  \override Score.MetronomeMark.direction = #DOWN
  \tempo 8. = 120
  c''1

  % Rehearsal marks below the staff
  \override Score.RehearsalMark.direction = #DOWN
  \mark \default
  c''1
}

```

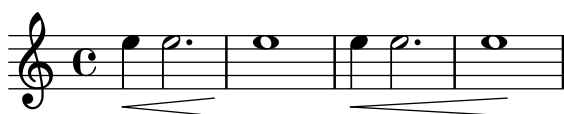




## Das Verhalten von Crescendo-Klammern an Taktlinien beeinflussen

Wenn die Note, an welcher eine Crescendo-Klammer endet, die erste Note eines Taktes ist, wird die Klammer an der vorhergehenden Taktlinie beendet. Dieses Verhalten kann auch mit der Eigenschaft `'to-barline` geändert werden:

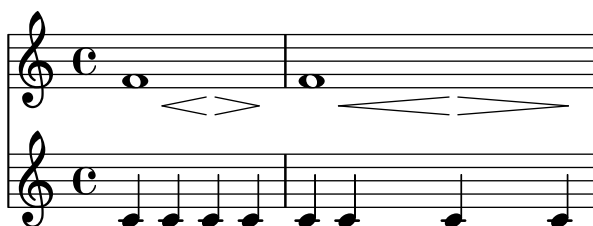
```
\relative c' {
  e4\< e2.
  e1\!
  \override Hairpin.to-barline = ##f
  e4\< e2.
  e1\!
}
```



## Die Mindestlänge von Crescendo-Klammern bestimmen

Wenn Crescendo-Klammern zu kurz sind, können sie verlängert werden, indem die `minimum-length`-Eigenschaft des `Hairpin`-Objektes verändert wird.

```
<<
{
  \after 4 \< \after 2 \> \after 2. \! f'1
  \override Hairpin.minimum-length = 8
  \after 4 \< \after 2 \> \after 2. \! f'1
}
{
  \repeat unfold 8 c'4
}
>>
```



## Showing the same articulation above and below a note or chord

By default, LilyPond does not allow the same articulation (e.g., an accent, a fermata, a flageolet, etc.) to be displayed above and below a note. For example, `c4_\fermata^\fermata` only shows a fermata below. The fermata above gets simply ignored.

However, one can stick scripts (just like fingerings) inside a chord, which means it is possible to have as many articulations as desired. This approach has the advantage that it ignores the stem and positions the articulation relative to the note head. This can be seen in the case of the flageolets in the snippet. To mimic the behaviour of scripts outside a chord, `'add-stem-support` would be required.

The solution is thus to write the note as a chord and add the articulations inside of `<...>`, using the direction modifiers `^` and `_` as appropriate.

```
\relative c' {
```

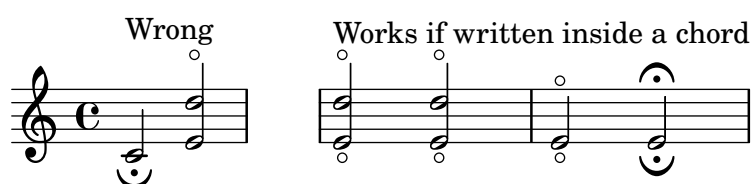
```

<>~"Wrong"
c2_\fermata~\fermata % The second fermata is ignored!
<e d'>2~\flageolet_\flageolet

\stopStaff s1 \startStaff

<>~"Works if written inside a chord"
<e_\flageolet d'~\flageolet>2
<e_\flageolet d'~\flageolet>2
<e_\flageolet~\flageolet>2
<e_\fermata~\fermata>2
}

```



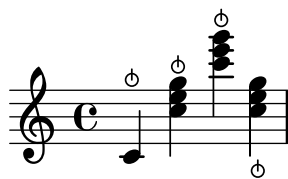
## Snap-pizzicato or Bartok pizzicato

A snap-pizzicato (also known as „Bartok pizzicato“) is a „strong pizzicato where the string is plucked vertically by snapping and rebounds off the fingerboard of the instrument“ (Wikipedia). It is denoted by a circle with a vertical line going from the center upwards outside the circle.

```

\relative c' {
  c4\snappizzicato
  <c' e g>4\snappizzicato
  <c' e g>4~\snappizzicato
  <c, e g>4_\snappizzicato
}

```



## Using a tick as the breath mark symbol

Vocal and wind music frequently uses a tick mark as a breathing sign. This indicates a breath that subtracts a little time from the previous note rather than causing a short pause, which is indicated by the comma breath mark. The mark can be moved up a little to take it away from the stave.

```

\relative c' ' {
  c2
  \breathe
  d2
  \override BreathingSign.Y-offset = #2.6
  \override BreathingSign.text =
    \markup { \musicglyph "scripts.tickmark" }
  c2
  \breathe
  d2
}

```

}



## Arpeggio-Klammern benutzen, um geteilte Stimmen besser sichtbar zu machen

Das `arpeggioBracket`-Klammerobjekt kann benutzt werden, um geteilte Stimmen anzuzeigen, wenn keine Hälse diese Information bieten. Das sieht man oft in Chormusik.

```
\include "english.ly"
```

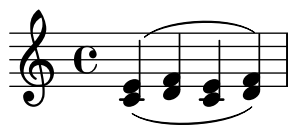
```
\score {
  \relative c' {
    \key a \major
    \time 2/2
    <<
      \new Voice = "upper"
      <<
        { \voiceOne \arpeggioBracket
          a2( b2
            <b d>1\arpeggio)
            <cs e>\arpeggio ~
            <cs e>4
          }
        \addlyrics { \lyricmode { A -- men. } }
      >>
      \new Voice = "lower"
      { \voiceTwo
        a1 ~
        a
        a ~
        a4 \bar " | ."
      }
    >>
  }
  \layout { ragged-right = ##t }
}
```



## Doppelte Bögen für Legato-Akkorde benutzen

Einige Komponisten schreiben doppelte Bögen, wenn Legato-Akkorde notiert werden. Das kann mit der Eigenschaft `doubleSlurs` erreicht werden.

```
\relative c' {
  \set doubleSlurs = ##t
  <c e>4( <d f> <c e> <d f>)
}
```



## Using the whiteout property

Any graphical object can be printed over a white background to mask parts of objects that lie beneath. This can be useful to improve the appearance of collisions in complex situations when repositioning objects is impractical. It is necessary to explicitly set the layer property to control which objects are masked by the white background.

In this example the collision of the tie with the time signature is improved by masking out the part of the tie that crosses the time signature, setting the `whiteout` property of `TimeSignature`. To do this, `TimeSignature` is moved to a layer above `Tie`, which is left in the default layer 1, and `StaffSymbol` is moved to a layer above `TimeSignature` so it is not masked.

```
{
  \override Score.StaffSymbol.layer = 4
  \override Staff.TimeSignature.layer = 3
  b'2 b'~
  \once \override Staff.TimeSignature.whiteout = ##t
  \time 3/4
  b' r4
}
```



## Vertical line as a baroque articulation mark

This short vertical line placed above the note is commonly used in baroque music. Its meaning can vary, but generally indicates notes that should be played with more „weight“. The following example demonstrates how to achieve such a notation.

```
upline =
\tweak stencil
  #(\lambda (grob)
    (grob-interpret-markup grob #{ \markup \draw-line #'(0 . 1) #}))
  \stopped

\relative c' {
  a'4~\upline a( c d')_\upline
}
```



## Vertically aligning dynamics across multiple notes

Dynamics that occur at, begin on, or end on the same note will be vertically aligned. To ensure that dynamics are aligned when they do not occur on the same note, increase the `staff-padding` property of the `DynamicLineSpanner` object.

```
\relative c' {
```

```
\override DynamicLineSpanner.staff-padding = #4  
c2\p f\mf  
g2\< b4\> c\!  
}
```



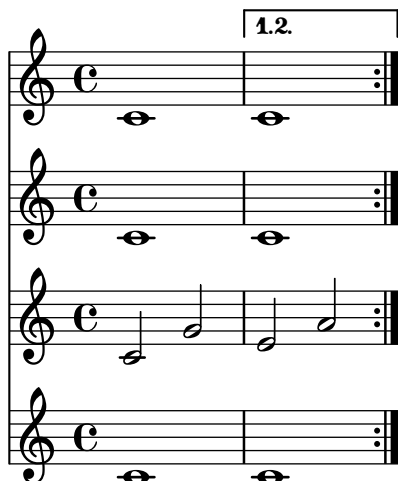
## Repeats

Abschnitt “Repeats” in *Notationsreferenz*

### Volta-Klammern zu zusätzlichen Systemen hinzufügen

Der `Volta_engraver` befindet sich im `Score`-Kontext und Klammern werden deshalb nur auf dem obersten System dargestellt. Das kann umgangen werden, indem man den `Volta_engraver` zu dem `Staff`-Kontext hinzufügt, in dem die Klammern zusätzlichen vorkommen sollen. Siehe auch das “Volta multi staff”-Schnipsel.

```
<<
\new Staff { \repeat volta 2 { c'1 } \alternative { c' } }
\new Staff { \repeat volta 2 { c'1 } \alternative { c' } }
\new Staff \with { \consists "Volta_engraver" } { c'2 g' e' a' }
\new Staff { \repeat volta 2 { c'1 } \alternative { c' } }
>>
```



### Centered measure numbers

Scores of large ensemble works often have bar numbers placed beneath the system, centered horizontally on the measure’s extent. This snippet shows how the `Measure_counter_engraver` may be used to simulate this notational practice. Here, the engraver has been added to a `Dynamics` context.

This snippet presents a legacy method: starting from LilyPond 2.23.3, `\set Score.centerBarNumbers = ##t` is enough.

```
\layout {
  \context {
    \Dynamics
    \consists #Measure_counter_engraver
    \override MeasureCounter.direction = #DOWN
    \override MeasureCounter.font-encoding = #'latin1
    \override MeasureCounter.font-shape = #'italic
    % to control the distance of the Dynamics context from the staff:
    \override VerticalAxisGroup.nonstaff-relatedstaff-spacing.padding = #2
  }
  \context {
    \Score
```

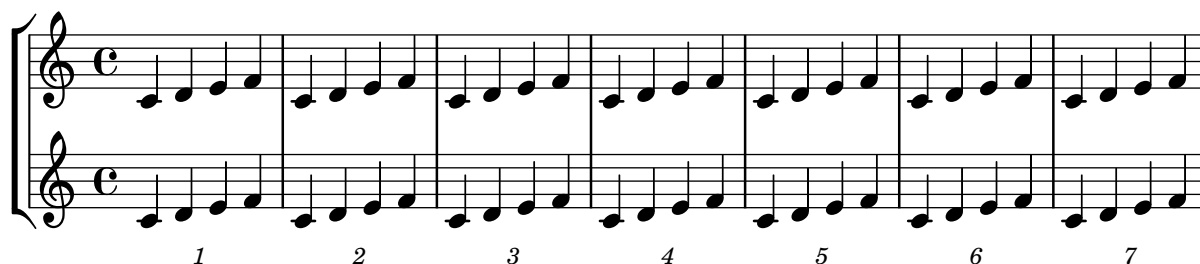
```

    \remove "Bar_number_engraver"
  }
}

pattern = \repeat unfold 7 { c'4 d' e' f' }

\new StaffGroup <<
  \new Staff {
    \pattern
  }
  \new Staff {
    \pattern
  }
  \new Dynamics {
    \startMeasureCount
    s1*7
    \stopMeasureCount
  }
>>

```



## Changing the default bar lines

Default bar lines can be changed when re-defined in a score context.

% <http://lsr.di.unimi.it/LSR/Item?id=964>

%%=> <http://lists.gnu.org/archive/html/lilypond-user/2014-03/msg00126.html>

%%=> <http://lilypond.1069038.n5.nabble.com/Changing-the-default-end-repeat-bracket-tc169357>

```

\layout {
  \context {
    \Score
    %% Changing the defaults from engraver-init.ly
    measureBarType = "!"
    startRepeatBarType = "[|:"
    endRepeatBarType = ":|]"
    doubleRepeatBarType = ":||[|:"
  }
}

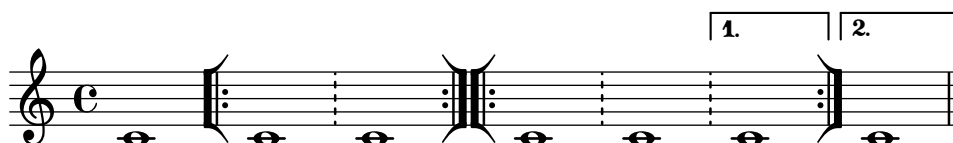
%% example:
{
  c'1
  \repeat volta 2 { \repeat unfold 2 c' }
  \repeat volta 2 { \repeat unfold 2 c' }
  \alternative {

```

```

{ c' }
{
  %% v2.18 workaround
  \once\override Score.VoltaBracket.shorten-pair = #'(1 . -1)
  c'
}
}
\bar "|"
}

```



## Cross-staff tremolos

Since `\repeat tremolo` expects exactly two musical arguments for chord tremolos, the note or chord which changes staff within a cross-staff tremolo should be placed inside curly braces together with its `\change Staff` command.

```

\new PianoStaff <<
  \new Staff = "up" \relative c'' {
    \key a \major
    \time 3/8
    s4.
  }
  \new Staff = "down" \relative c'' {
    \key a \major
    \time 3/8
    \voiceOne
    \repeat tremolo 6 {
      <a e'>32
      {
        \change Staff = "up"
        \voiceTwo
        <cis a' dis>32
      }
    }
  }
}
>>

```



## Engraving tremolos with floating beams

If a tremolo's total duration is less than a quarter-note, or exactly a half-note, or between a half-note and a whole-note, it is normally typeset with all beams touching the stems. Certain



engraving styles typeset some of these beams as centered floating beams that do not touch the stems. The number of floating beams in this type of tremolo is controlled with the 'gap-count property of the Beam object, and the size of the gaps between beams and stems is set with the 'gap property.

```
\relative c'' {
  \repeat tremolo 8 { a32 f }
  \override Beam.gap-count = #1
  \repeat tremolo 8 { a32 f }
  \override Beam.gap-count = #2
  \repeat tremolo 8 { a32 f }
  \override Beam.gap-count = #3
  \repeat tremolo 8 { a32 f }

  \override Beam.gap-count = #3
  \override Beam.gap = #1.33
  \repeat tremolo 8 { a32 f }
  \override Beam.gap = #1
  \repeat tremolo 8 { a32 f }
  \override Beam.gap = #0.67
  \repeat tremolo 8 { a32 f }
  \override Beam.gap = #0.33
  \repeat tremolo 8 { a32 f }
}
```



## Isolierte Prozentwiederholungen

Isolierte Prozentwiederholungen können auch ausgegeben werden. Das wird erreicht, indem man eine Ganztaktpause notiert und ihre Ausgabeform ändert:

```
makePercent =
#(define-music-function (note) (ly:music?)
  "Make a percent repeat the same length as NOTE."
  (make-music 'PercentEvent
    'length (ly:music-length note)))
```

```
\relative c'' {
  \makePercent s1
}
```



## Measure counter

This snippet provides a workaround for emitting measure counters using transparent percent repeats.

```
<<
\context Voice = "foo" {
  \clef bass
```

```

c4 r g r
c4 r g r
c4 r g r
c4 r g r
}
\context Voice = "foo" {
  \set countPercentRepeats = ##t
  \hide PercentRepeat
  \override PercentRepeatCounter.staff-padding = #1
  \repeat percent 4 { s1 }
}
>>

```



## Numbering groups of measures

This snippet demonstrates the use of the `Measure_counter_engraver` to number groups of successive measures. Any stretch of measures may be numbered, whether consisting of repetitions or not.

The engraver must be added to the appropriate context. Here, a `Staff` context is used; another possibility is a `Dynamics` context.

The counter is begun with `\startMeasureCount` and ended with `\stopMeasureCount`. Numbering will start by default with 1, but this behavior may be modified by overriding the `count-from` property.

When a measure extends across a line break, the number will appear twice, the second time in parentheses.

```

\layout {
  \context {
    \Staff
    \consists #Measure_counter_engraver
  }
}

\new Staff {
  \startMeasureCount
  \repeat unfold 7 {
    c'4 d' e' f'
  }
  \stopMeasureCount
  \bar "||"
  g'4 f' e' d'
  \override Staff.MeasureCounter.count-from = #2
  \startMeasureCount
  \repeat unfold 5 {
    g'4 f' e' d'
  }
  g'4 f'
  \bar ""
  \break
}

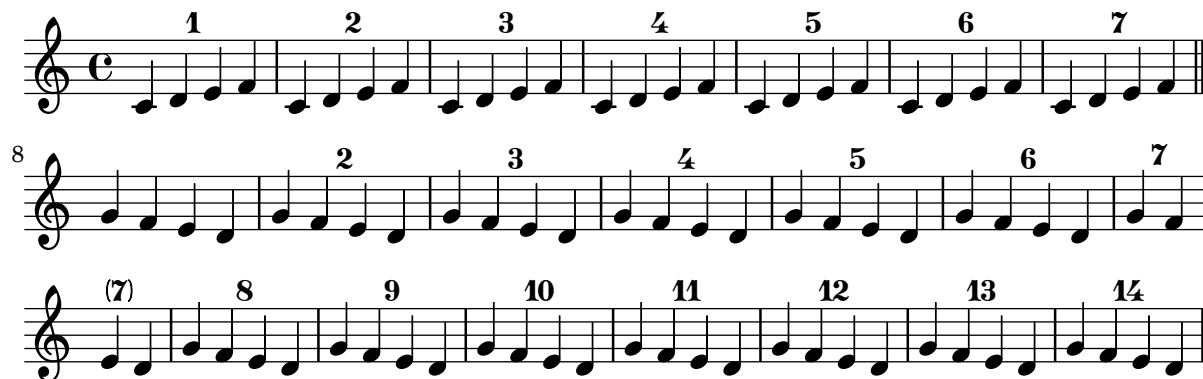
```

```

e'4 d'
\repeat unfold 7 {
  g'4 f' e' d'
}
\stopMeasureCount
}

\paper { tagline = ##f }

```



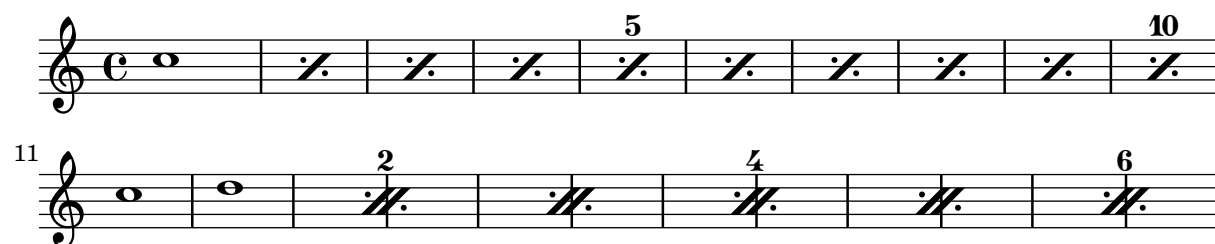
## Sichtbarkeit von Prozent-Wiederholungen

Prozentwiederholungszähler können in regelmäßigen Intervallen angezeigt werden, indem man die Eigenschaft `repeatCountVisibility` beeinflusst.

```

\relative c' {
  \set countPercentRepeats = ##t
  \set repeatCountVisibility = #(every-nth-repeat-count-visible 5)
  \repeat percent 10 { c1 } \break
  \set repeatCountVisibility = #(every-nth-repeat-count-visible 2)
  \repeat percent 6 { c1 d1 }
}

```



## Prozent-Wiederholungen zählen

Ganztaktwiederholungen mit mehr als zwei Wiederholungen erhalten einen Zähler, wenn man die entsprechende Eigenschaft einsetzt:

```

\relative c' {
  \set countPercentRepeats = ##t
  \repeat percent 4 { c1 }
}

```



## Positioning segno and coda (with line break)

If you want to place an exiting segno sign and add text like „D.S. al Coda“ next to it where usually the staff lines are you can use this snippet. The coda will resume in a new line. There is a variation documented in this snippet, where the coda will remain on the same line.

```
{
  \relative c' {
    c4 c c c c c c c c c c c
    \repeat segno 2 {
      c4 c c c c c c c
      \alternative {
        \volta 1 {
          c4 c c c c c c c c c c c
          % If you don't use \break at Coda, use \noBreak here
          % and after \bar "" below.
          \noBreak
          \section % double bar line
          \cadenzaOn % pause bar count
          \stopStaff % remove staff lines
          % Increasing the unfold counter will expand the staff-free space
          \repeat unfold 6 {
            s1
            \bar ""
          }
          % Place JumpScript where the staff would normally be.
          \once \override Score.JumpScript.outside-staff-priority = ##f
          \once \override Score.JumpScript.Y-offset = 0
          \startStaff % resume bar count
          \cadenzaOff % show staff lines again
        }
      }
    }
  }
  \sectionLabel "Coda"
  % Show Coda on a new line
  \break
  \repeat unfold 8 { c4 c c c }
  \fine
}

\paper { tagline = ##f }
```



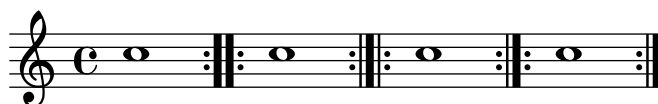
*D.S. % al  $\Phi$   
e poi la Coda*



## Setting the double repeat default for volte

There are three different styles of double repeats for volte, that can be set using `doubleRepeatBarType`.

```
\relative c' {
  \repeat volta 2 { c1 }
  \set Score.doubleRepeatBarType = ":\...:"
  \repeat volta 2 { c1 }
  \set Score.doubleRepeatBarType = ":\.|\.|"
  \repeat volta 2 { c1 }
  \set Score.doubleRepeatBarType = ":\.|\.:"
  \repeat volta 2 { c1 }
}
```



## Volta-Klammern verkürzen

Volta-Klammern werden normalerweise über alle Noten der Klammer gezogen, aber es ist möglich sie zu verkürzen. Hierzu muss `voltaSpannerDuration` definiert werden, in dem Beispiel etwa als 3/4, sodass die Klammer nur einen Takt dauert.

```
\relative c' {
  \time 3/4
  c4 c c
  \set Score.voltaSpannerDuration = \musicLength 2.
  \repeat volta 5 {
    d4 d d
    \alternative {
      \volta 1,2,3,4 {
        e4 e e
        f4 f f }
      \volta 5 {
        g4 g g } } }
}
```



## Wiederholungs-(Volta-)Klammern unterhalb der Akkordsymbole

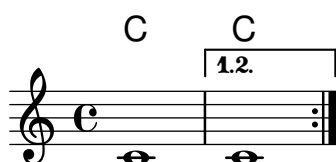
Indem man den `Volta_engraver` zu dem entsprechenden Notensystem hinzufügt, können Wiederholungsklammern unterhalb der Akkorde gesetzt werden.

```
\score {
```

```

<<
  \chords {
    c1
    c1
  }
  \new Staff \with {
    \consists "Volta_engraver"
  }
  {
    \repeat volta 2 { c'1 }
    \alternative { c' }
  }
>>
\layout {
  \context {
    \Score
    \remove "Volta_engraver"
  }
}
}

```



## Volta multi staff

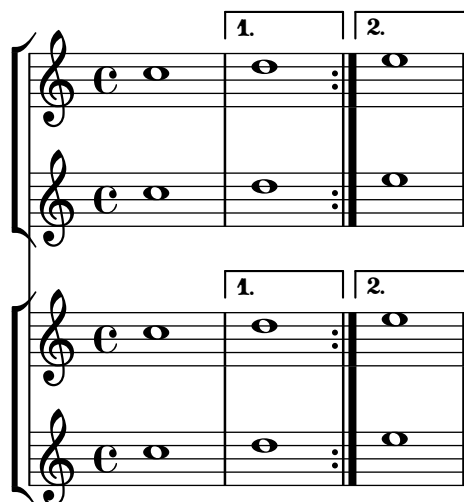
By adding the `Volta_engraver` to the relevant staff, volte can be put over staves other than the topmost one in a score.

```

voltaMusic = \relative c'' {
  \repeat volta 2 {
    c1
    \alternative {
      \volta 1 { d1 }
      \volta 2 { e1 }
    }
  }
}

<<
\new StaffGroup <<
  \new Staff \voltaMusic
  \new Staff \voltaMusic
>>
\new StaffGroup <<
  \new Staff \with { \consists "Volta_engraver" }
    \voltaMusic
  \new Staff \voltaMusic
>>
>>

```



## Volta text markup using repeatCommands

Though voltes are best specified using `\repeat volta`, the context property `repeatCommands` must be used in cases where the volta text needs more advanced formatting with `\markup`.

Since `repeatCommands` takes a list, the simplest method of including markup is to use an identifier for the text and embed it in the command list using the Scheme syntax `#(list (list 'volta textIdentifier))`. Start- and end-repeat commands can be added as separate list elements:

```
voltaAdLib = \markup { \volta-number { 1. 2. 3... } \italic { ad lib. } }
```

```
\relative c' ' {
  c1
  \set Score.repeatCommands = #(list (list 'volta voltaAdLib) 'start-repeat)
  c4 b d e
  \set Score.repeatCommands = #'((volta #f) (volta "4.") end-repeat)
  f1
  \set Score.repeatCommands = #'((volta #f))
}
```



## Simultaneous notes

Abschnitt “Simultaneous notes” in *Notationsreferenz*

### Zusätzliche Stimmen, um Zusammenstöße zu vermeiden

Ein einigen Fällen von sehr komplexer polyphoner Musik sind zusätzliche Stimmen notwendig, um Zusammenstöße zwischen den Noten zu vermeiden. Wenn mehr als vier parallele Stimmen benötigt werden, können zusätzliche Stimmen definiert werden, indem eine Variable mit der Funktion `context-spec-music` definiert wird.

```
voiceFive = #(context-spec-music (make-voice-props-set 4) 'Voice)
```

```
\relative c' ' {
  \time 3/4
  \key d \minor
  \partial 2
  <<
    \new Voice {
      \voiceOne
      a4. a8
      e'4 e4. e8
      f4 d4. c8
    }
    \new Voice {
      \voiceTwo
      d,2
      d4 cis2
      d4 bes2
    }
    \new Voice {
      \voiceThree
      f'2
      bes4 a2
      a4 s2
    }
    \new Voice {
      \voiceFive
      s2
      g4 g2
      f4 f2
    }
  >>
}
```



### Changing \partCombine texts

When using the automatic part combining feature, the printed text for the solo and unison sections may be changed.



```

\new Staff <<
  \set Staff.soloText = "girl"
  \set Staff.soloIIText = "boy"
  \set Staff.aDueText = "together"
  \partCombine
    \relative c' {
      g4 g r r
      a2 g
    }
    \relative c' {
      r4 r a( b)
      a2 g
    }
  }
>>

```



## Changing a single note's size in a chord

Individual note heads in a chord can be modified with the `\tweak` command inside a chord, by altering the `font-size` property.

Inside the chord (within the brackets `< >`), before the note to be altered, place the `\tweak` command, followed by `font-size` and define the proper size like `#-2` (a tiny note head).

```

\relative c' {
  <\tweak font-size #+2 c e g c
  \tweak font-size #-2 e>1
  ~\markup { A tiny e }_~\markup { A big c }
}

```



## Clusters

Clusters are a device to denote that a complete range of notes is to be played.

```

fragment = \relative c' {
  c4 f <e d'>4
  <g a>8 <e a> a4 c2 <d b>4
  e2 c
}

<<
  \new Staff \fragment
  \new Staff \makeClusters \fragment
>>

```



## Zwei Stimmen auf einem System kombinieren

Die Funktion, die Stimmen kombiniert (also der `\partCombine`-Befehl) ermöglicht die Kombination unterschiedlicher Stimmen auf einem System. Textanweisungen wie "solo" oder "a2" werden automatisch hinzugefügt. Wenn man sie entfernen will, muss man die Eigenschaft `printPartCombineTexts` auf falsch setzen. Für Klavierauszüge muss natürlich kein "solo"/"a2" usw. hinzugefügt werden, man sollte sie also ausschalten. Wenn aber Solo-Stellen in einem Klavierauszug oder einer Chorpartitur angezeigt werden, ist es besser, normale Polyphonie zu verwenden, weil so die Solostellen angezeigt werden, auch wenn der Text des Stimmenkombinierers ausgeschaltet ist.

Der Schnipsel zeigt drei Möglichkeiten, Stimmen auf einem System zu kombinieren: Standardpolyphonie, `\partCombine` ohne Text und `\partCombine` mit Text.

```
musicUp = \relative c'' {
  \time 4/4
  a4 c4.( g8) a4 |
  g4 e' g,( a8 b) |
  c b a2.
}

musicDown = \relative c'' {
  g4 e4.( d8) c4 |
  r2 g'4( f8 e) |
  d2 \stemDown a
}

\score {
  <<
    \new Staff \with {
      instrumentName = "standard polyphony"
    } << \musicUp \\\musicDown >>

    \new Staff \with {
      instrumentName =
        \markup { \typewriter "\\partCombine" without text}
      printPartCombineTexts = ##f
    } \partCombine \musicUp \musicDown

    \new Staff \with {
      instrumentName =
        \markup { \typewriter "\\partCombine" with text}
    } \partCombine \musicUp \musicDown
  >>

  \layout {
```

```

indent = 6.0\cm
\context {
  \Score
  % Setting this to a large value avoids a bar line at the
  % beginning that would connect the three staves otherwise.
  \override SystemStartBar.collapse-height = 30
}
}
}

```

standard polyphony	
\partCombine without text	
\partCombine with text	

## Displaying complex chords

Here is a way to display a chord where the same note is played twice with different accidentals.

```

fixA = {
  \once \override Stem.length = #11
}

fixB = {
  \once \override NoteHead.X-offset = #1.7
  \once \override Stem.length = #7
  \once \override Stem.rotation = #'(45 0 0)
  \once \override Stem.extra-offset = #'(-0.1 . -0.2)
  \once \override Flag.style = #'no-flag
  \once \override Accidental.extra-offset = #'(4 . -.1)
}

\relative c' {
  << { \fixA <b d!>8 } \ { \voiceThree \fixB dis } >> s
}

```



## Horizontale Verschiebung von Noten erzwingen

Wenn es zu Zusammenstößen kommt, kann mit folgender Lösung eine andere Position manuell eingestellt werden. Die Einheiten hier sind Notenlinienzwischenräume.

```

\relative c' <<

```

```

{
  <d g>2 <d g>
}
\\
{
  <b f'>2
  \once \override NoteColumn.force-hshift = 1.7
  <b f'>2
}
>>

```



## Making an object invisible with the 'transparent' property

Setting the transparent property will cause an object to be printed in „invisible ink“: the object is not printed, but all its other behavior is retained. The object still takes up space, it takes part in collisions, and slurs, ties and beams can be attached to it.

This snippet demonstrates how to connect different voices using ties. Normally, ties only connect two notes in the same voice. By introducing a tie in a different voice, and blanking the first up-stem in that voice, the tie appears to cross voices.

```

\relative {
  \time 2/4
  <<
  {
    \once \hide Stem
    \once \override Stem.length = #8
    b'8 ~ 8\noBeam
    \once \hide Stem
    \once \override Stem.length = #8
    g8 ~ 8\noBeam
  }
  \\
  {
    b8 g g e
  }
  >>
}

```



## Moving dotted notes in polyphony

When a dotted note in the upper voice is moved to avoid a collision with a note in another voice, the default is to move the upper note to the right. This behaviour can be over-ridden by using the prefer-dotted-right property of NoteCollision.

```

\new Staff \relative c' <<

```

```

{
  f2. f4
  \override Staff.NoteCollision.prefer-dotted-right = ##f
  f2. f4
  \override Staff.NoteCollision.prefer-dotted-right = ##t
  f2. f4
}
\\
{ e4 e e e e e e e e e e }
>>

```



## Suppressing warnings for clashing note columns

If notes from two voices with stems in the same direction are placed at the same position, and both voices have no shift or the same shift specified, the error message ‘warning: ignoring too many clashing note columns’ will appear when compiling the LilyPond file. This message can be suppressed by setting the ‘ignore-collision’ property of the NoteColumn object to #t. Please note that this does not just suppress warnings but stops LilyPond trying to resolve collisions at all and so may have unintended results unless used with care.

```
ignore = \override NoteColumn.ignore-collision = ##t
```

```

\relative c' {
  \new Staff <<
    \new Voice { \ignore \stemDown f2 g }
    \new Voice { c2 \stemDown c, }
  >>
}

```



## Two \partCombine pairs on one staff

The \partCombine function takes two music expressions each containing a part, and distributes them among four Voices named „two“, „one“, „solo“, and „chords“ depending on when and how the parts are merged into a common voice. The voices output from \partCombine can have their layout properties adjusted in the usual way. Here we define extensions of \partCombine to make it easier to put four voices on a staff.

```

soprano = { d'4 | cis' b e' d'8 cis' | cis'2 b }
alto = { fis4 | e8 fis gis ais b4 b | b ais fis2 }
tenor = { a8 b | cis' dis' e'4 b8 cis' d'4 | gis cis' dis'2 }
bass = { fis8 gis | a4 gis g fis | eis fis b,2 }

```

```

\new Staff <<
  \key b\minor
  \clef alto
  \partial 4

```

```

\transpose b b'
\partCombineUp \soprano \alto
\partCombineDown \tenor \bass
>>

```

```

\layout {
  \context {
    \Staff
    \accepts "VoiceBox"
  }
  \context {
    \name "VoiceBox"
    \type "Engraver_group"
    \defaultchild "Voice"
    \accepts "Voice"
    \accepts "NullVoice"
  }
}

```

```

customPartCombineUp =
#(define-music-function (partOne partTwo)
  (ly:music? ly:music?)
  "Take the music in @var{partOne} and @var{partTwo} and return
  a @code{VoiceBox} named @q{Up} containing @code{Voice}s
  that contain @var{partOne} and @var{partTwo} merged into one
  voice where feasible. This variant sets the default voicing
  in the output to use upward stems."
  #{
    \new VoiceBox = "Up" <<
      \context Voice = "one" { \voiceOne }
      \context Voice = "two" { \voiceThree }
      \context Voice = "shared" { \voiceOne }
      \context Voice = "solo" { \voiceOne }
      \context NullVoice = "null" {}
      \partCombine #partOne #partTwo
    >>
  #})

```

```

customPartCombineDown = #
(define-music-function (partOne partTwo)
  (ly:music? ly:music?)
  "Take the music in @var{partOne} and @var{partTwo} and return
  a @code{VoiceBox} named @q{Down} containing @code{Voice}s
  that contain @var{partOne} and @var{partTwo} merged into one
  voice where feasible. This variant sets the default voicing
  in the output to use downward stems."
  #{
    \new VoiceBox = "Down" <<
      \set VoiceBox.soloText = #"Solo III"
      \set VoiceBox.soloIIText = #"Solo IV"
      \context Voice = "one" { \voiceFour }
      \context Voice = "two" { \voiceTwo }
    >>
  #})

```

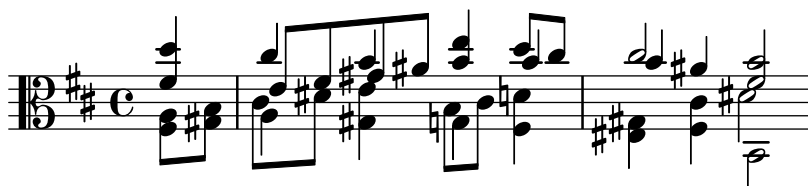
```

\context Voice ="shared" { \voiceFour }
\context Voice ="solo" { \voiceFour }
\context NullVoice = "null" {}
\partCombine #partOne #partTwo
>>
#})

soprano = { d'4 | cis' b e' d'8 cis' | cis'2 b }
alto = { fis4 | e8 fis gis ais b4 b | b ais fis2 }
tenor = { a8 b | cis' dis' e'4 b8 cis' d'4 | gis cis' dis'2 }
bass = { fis8 gis | a4 gis g fis | eis fis b,2 }

\new Staff <<
  \key b\minor
  \clef alto
  \partial 4
  \transpose b b'
  \customPartCombineUp \soprano \alto
  \customPartCombineDown \tenor \bass
>>

```



## Staff notation

Abschnitt “Staff notation” in *Notationsreferenz*

### Ambitus pro Stimme hinzufügen

Ambitus können pro Stimme gesetzt werden. In diesem Fall müssen sie manuell verschoben werden, um Zusammenstöße zu verhindern.

```
\new Staff <<
  \new Voice \with {
    \consists "Ambitus_engraver"
  } \relative c'' {
    \override Ambitus.X-offset = 2.0
    \voiceOne
    c4 a d e
    f1
  }
  \new Voice \with {
    \consists "Ambitus_engraver"
  } \relative c' {
    \voiceTwo
    es4 f g as
    b1
  }
}>>
```



### Adding an extra staff

An extra staff can be added (possibly temporarily) after the start of a piece.

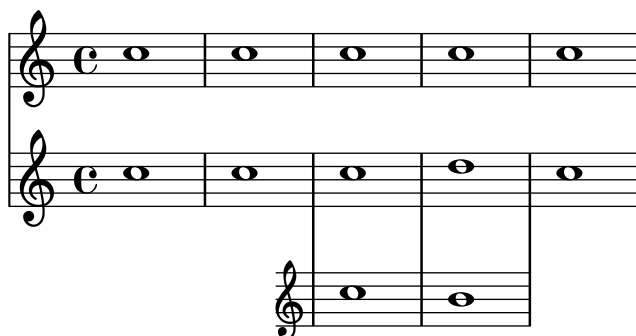
```
\score {
  <<
    \new Staff \relative c'' {
      c1 | c | c | c | c
    }
    \new StaffGroup \relative c'' {
      \new Staff {
        c1 | c
      } <<
      {
        c1 | d
      }
      \new Staff {
        \once \omit Staff.TimeSignature
        c1 | b
      }
    }
  >>
  c1
}
```



```

    }
  >>
}

```



## Adding an extra staff at a line break

When adding a new staff at a line break, some extra space is unfortunately added at the end of the line before the break (to fit in a key signature change, which will never be printed anyway). The workaround is to add a setting of `Staff.explicitKeySignatureVisibility` as is shown in the example.

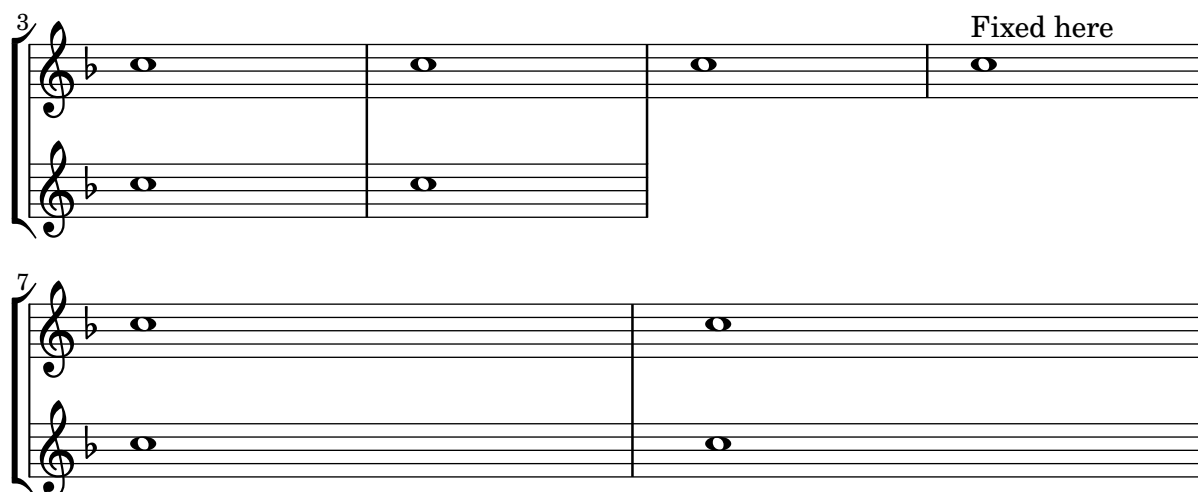
```

\paper { tagline = ##f }

\score {
  \new StaffGroup \relative c'' {
    \new Staff
    \key f \major
    c1 c^"Unwanted extra space" \break
    << { c1 | c }
    \new Staff {
      \key f \major
      \once \omit Staff.TimeSignature
      c1 | c
    }
  }
  >>
  c1 | c^"Fixed here" \break
  << { c1 | c }
  \new Staff {
    \once \set Staff.explicitKeySignatureVisibility = #end-of-line-invisible
    \key f \major
    \once \omit Staff.TimeSignature
    c1 | c
  }
  >>
}
}

```





## Adding indicators to staves which get split after a break

This snippet defines the commands `\splitStaffBarLine`, `\convUpStaffBarLine`, and `\convDownStaffBarLine`. These add arrows at a bar line to denote that several voices sharing a staff will each continue on a staff of their own in the next system, or that voices split in this way recombine.

```
#(define-markup-command (arrow-at-angle layout props angle-deg length fill)
  (number? number? boolean?)
  (let* (
    (PI-OVER-180 (/ (atan 1 1) 34))
    (degrees->radians (lambda (degrees) (* degrees PI-OVER-180)))
    (angle-rad (degrees->radians angle-deg))
    (target-x (* length (cos angle-rad)))
    (target-y (* length (sin angle-rad))))
    (interpret-markup layout props
      (markup
        #:translate (cons (/ target-x 2) (/ target-y 2))
        #:rotate angle-deg
        #:translate (cons (/ length -2) 0)
        #:concat (#:draw-line (cons length 0)
          #:arrow-head X RIGHT fill))))))

splitStaffBarLineMarkup = \markup \with-dimensions #'(0 . 0) #'(0 . 0) {
  \combine
  \arrow-at-angle #45 #(sqrt 8) ##t
  \arrow-at-angle #-45 #(sqrt 8) ##t
}

splitStaffBarLine = {
  \once \override Staff.BarLine.stencil =
  #(lambda (grob)
    (ly:stencil-combine-at-edge
      (ly:bar-line::print grob)
      X RIGHT
      (grob-interpret-markup grob splitStaffBarLineMarkup)
      0))
}
```

```

\break
}

convDownStaffBarLine = {
  \once \override Staff.BarLine.stencil =
  #(\lambda (grob)
    (ly:stencil-combine-at-edge
      (ly:bar-line::print grob)
      X RIGHT
      (grob-interpret-markup grob #{
        \markup\with-dimensions #'(0 . 0) #'(0 . 0) {
          \translate #'(0 . -.13)\arrow-at-angle #-45 #(\sqrt 8) ##t
        }#})
      0))
  \break
}

convUpStaffBarLine = {
  \once \override Staff.BarLine.stencil =
  #(\lambda (grob)
    (ly:stencil-combine-at-edge
      (ly:bar-line::print grob)
      X RIGHT
      (grob-interpret-markup grob #{
        \markup\with-dimensions #'(0 . 0) #'(0 . 0) {
          \translate #'(0 . .14)\arrow-at-angle #45 #(\sqrt 8) ##t
        }#})
      0))
  \break
}

\header { tagline = ##f }

\paper {
  ragged-right = ##t
  short-indent = 10\mm
}

separateSopranos = {
  \set Staff.instrumentName = "AI AII"
  \set Staff.shortInstrumentName = "AI AII"
  \splitStaffBarLine
  \change Staff = "up"
}

convSopranos = {
  \convDownStaffBarLine
  \change Staff = "shared"
  \set Staff.instrumentName = "S A"
  \set Staff.shortInstrumentName = "S A"
}

```

```

sI = {
  \voiceOne
  \repeat unfold 4 f''2
  \separateSopranos
  \repeat unfold 4 g''2
  \convSopranos
  \repeat unfold 4 c''2
}
sII = {
  s1*2
  \voiceTwo
  \change Staff = "up"
  \repeat unfold 4 d''2
}
aI = {
  \voiceTwo
  \repeat unfold 4 a'2
  \voiceOne
  \repeat unfold 4 b'2
  \convUpStaffBarLine
  \voiceTwo
  \repeat unfold 4 g'2
}
aII = {
  s1*2
  \voiceTwo
  \repeat unfold 4 g'2
}
ten = {
  \voiceOne
  \repeat unfold 4 c'2
  \repeat unfold 4 d'2
  \repeat unfold 4 c'2
}
bas = {
  \voiceTwo
  \repeat unfold 4 f2
  \repeat unfold 4 g2
  \repeat unfold 4 c2
}

\score {
  <<
  \new ChoirStaff <<
    \new Staff = up \with {
      instrumentName = "SI SII"
      shortInstrumentName = "SI SII"
    } {
      s1*4
    }

    \new Staff = shared \with {

```

```

    instrumentName = "S A"
    shortInstrumentName = "S A"
} <<
  \new Voice = sopI \sI
  \new Voice = sopII \sII
  \new Voice = altI \aI
  \new Voice = altII \aII
>>
\new Lyrics \with {
  alignBelowContext = up
}
\lyricsto sopII { e f g h }
\new Lyrics \lyricsto altI { a b c d e f g h i j k l }

\new Staff = men \with {
  instrumentName = "T B"
  shortInstrumentName = "T B"
} <<
  \clef F
  \new Voice = ten \ten
  \new Voice = bas \bas
>>
\new Lyrics \lyricsto bas { a b c d e f g h i j k l }
>>
>>
\layout {
  \context {
    \Staff \RemoveEmptyStaves
    \override VerticalAxisGroup.remove-first = ##t
  }
}
}

```

The image shows a musical score for two parts: Soprano (S A) and Tenor/Bass (T B). The Soprano part is written on a treble clef staff, and the Tenor/Bass part is written on a bass clef staff. Both parts are in common time (C). The Soprano part has four measures of music with lyrics 'a b c d' underneath. The Tenor/Bass part has four measures of music with lyrics 'a b c d' underneath. The two parts are grouped together by a large left brace.

The image shows two systems of musical notation. The first system consists of three staves: SI SII (treble clef, 3/4 time), AI AII (treble clef, 3/4 time), and T B (bass clef, 3/4 time). The second system consists of two staves: S A (treble clef, 5/4 time) and T B (bass clef, 5/4 time). Notes are labeled with letters e, f, g, h and i, j, k, l.

## Orchesterstichnoten zu einem Klavierauszug hinzufügen

Hier wird gezeigt, wie man das Hinzufügen von vielen Orchesterstichnoten zu einem Klavierauszug hinzufügen kann. Die musikalische Funktion `\cueWhile` braucht vier Argumente: Die Noten, von denen die Stichnoten formatiert werden sollen, definiert durch `\addQuote`, die Bezeichnung, die mit den Noten angegeben werden soll, dann entweder `#UP` (hoch) oder `#DOWN` (runter) zur Angabe von entweder `\voiceOne` mit der Bezeichnung über dem System oder `\voiceTwo` mit der Bezeichnung unter dem System, und schließlich die Klaviermusik, die parallel zu den Stichnoten gespielt werden soll. Die Bezeichnung des Stichnoteninstruments wird links der Stichnoten positioniert. Viele Abschnitte können zitiert werden, aber sie dürfen sich nicht überlappen.

`cueWhile =`

```
#(define-music-function
```

```
  (instrument name dir music)
```

```
  (string? string? ly:dir? ly:music?)
```

```
  #{
```

```
    \cueDuring $instrument #dir {
```

```
      \once \override TextScript.self-alignment-X = #RIGHT
```

```
      \once \override TextScript.direction = $dir
```

```
      <>-\markup { \tiny #name }
```

```
      $music
```

```
    }
```

```
  #})
```

```
flute = \relative c'' {
```

```
  \transposition c'
```

```
  s4 s4 e g
```

```
}
```

```
\addQuote "flute" { \flute }
```

```

clarinet = \relative c' {
  \transposition bes
  fis4 d d c
}
\addQuote "clarinet" { \clarinet }

singer = \relative c'' { c4. g8 g4 bes4 }
words = \lyricmode { here's the lyr -- ics }

pianoRH = \relative c'' {
  \transposition c'
  \cueWhile "clarinet" "Clar." #DOWN { c4. g8 }
  \cueWhile "flute" "Flute" #UP { g4 bes4 }
}
pianoLH = \relative c { c4 <c' e> e, <g c> }

\score {
  <<
    \new Staff {
      \new Voice = "singer" {
        \singer
      }
    }
    \new Lyrics {
      \lyricsto "singer"
      \words
    }
    \new PianoStaff <<
      \new Staff {
        \new Voice {
          \pianoRH
        }
      }
      \new Staff {
        \clef "bass"
        \pianoLH
      }
    >>
  >>
}

```



## Adding timing marks to long glissandi

Skipped beats in very long glissandi are sometimes indicated by timing marks, often consisting of stems without noteheads. Such stems can also be used to carry intermediate expression markings.

If the stems do not align well with the glissando, they may need to be repositioned slightly.

```
glissandoSkipOn = {
  \override NoteColumn.glissando-skip = ##t
  \hide NoteHead
  \override NoteHead.no-ledgers = ##t
}
```

```
glissandoSkipOff = {
  \revert NoteColumn.glissando-skip
  \undo \hide NoteHead
  \revert NoteHead.no-ledgers
}
```

```
\relative c'' {
  r8 f8\glissando
  \glissandoSkipOn
  f4 g a a8\noBeam
  \glissandoSkipOff
  a8

  r8 f8\glissando
  \glissandoSkipOn
  g4 a8
  \glissandoSkipOff
  a8 |

  r4 f\glissando \<
  \glissandoSkipOn
  a4\f \>
  \glissandoSkipOff
  b8\! r |
}
```





## Alternative Taktnummerierung

Zwei alternative Methoden können eingestellt werden, die die Taktnummerierung beeinflussen, insbesondere bei Wiederholungen.

```
music = \relative c' {
  \repeat volta 3 {
    c4 d e f |
    \alternative {
      \volta 1 { c4 d e f | c2 d \break }
      \volta 2 { f4 g a b | f4 g a b | f2 a | \break }
      \volta 3 { c4 d e f | c2 d } } }
  c1 \bar " | ."
}

\markup "default"
{
  \music
}

\markup \typewriter "'numbers"
{
  \set Score.alternativeNumberingStyle = #'numbers
  \music
}

\markup \typewriter "'numbers-with-letters"
{
  \set Score.alternativeNumberingStyle = #'numbers-with-letters
  \music
}

\paper { tagline = ##f }

default
```

The musical score consists of three staves. The first staff is in common time (C) and treble clef, showing a sequence of eighth notes: C4, D4, E4, F4, G4, A4, B4, C5. It ends with a first ending bracket labeled '1.'. The second staff starts with a second ending bracket labeled '2.' and continues with the sequence: C4, D4, E4, F4, G4, A4, B4, C5. The third staff starts with a third ending bracket labeled '3.' and continues with the sequence: C4, D4, E4, F4, G4, A4, B4, C5. Below the staves, the text "'numbers" is displayed.

The musical score consists of a single staff in common time (C) and treble clef, showing a sequence of eighth notes: C4, D4, E4, F4, G4, A4, B4, C5. It ends with a first ending bracket labeled '1.'.

The image shows five staves of musical notation. The first staff is labeled '2' and contains a first ending (marked '1.') and a second ending (marked '2.'). The second staff is labeled '2' and contains a first ending (marked '3.') and a second ending (marked '2.'). The third staff is labeled '2b' and contains a first ending (marked '1.') and a second ending (marked '2.'). The fourth staff is labeled '2c' and contains a first ending (marked '3.') and a second ending (marked '2.'). The fifth staff is labeled '2c' and contains a first ending (marked '3.') and a second ending (marked '2.').

'numbers-with-letters

## Ambitus after key signature

By default, ambitus are positioned at the left of the clef. The `\ambitusAfter` function allows for changing this placement. Syntax is `\ambitusAfter grob-interface` (see Graphical Object Interfaces (<http://lilypond.org/doc/v2.22/Documentation/internals/graphical-object-interfaces>) for a list of possible values for `grob-interface`.)

A common use case is printing the ambitus between key signature and time signature.

```
\new Staff \with {
  \consists Ambitus_engraver
} \relative {
  \ambitusAfter key-signature
  \key d \major
  es'8 g bes cis d2
}
```

The image shows a single staff of musical notation. The key signature is D major (two sharps). The time signature is common time (C). The music starts with a whole note D5, followed by an eighth note E5, a quarter note G5, an eighth note B5, a quarter note C6, and a half note D6.

## Centered measure numbers

Scores of large ensemble works often have bar numbers placed beneath the system, centered horizontally on the measure's extent. This snippet shows how the `Measure_counter_engraver` may be used to simulate this notational practice. Here, the engraver has been added to a `Dynamics` context.

This snippet presents a legacy method: starting from LilyPond 2.23.3, `\set Score.centerBarNumbers = ##t` is enough.

```
\layout {
  \context {
```

```

\Dynamics
\consists #Measure_counter_engraver
\override MeasureCounter.direction = #DOWN
\override MeasureCounter.font-encoding = #'latin1
\override MeasureCounter.font-shape = #'italic
% to control the distance of the Dynamics context from the staff:
\override VerticalAxisGroup.nonstaff-relatedstaff-spacing.padding = #2
}
\context {
  \Score
  \remove "Bar_number_engraver"
}
}

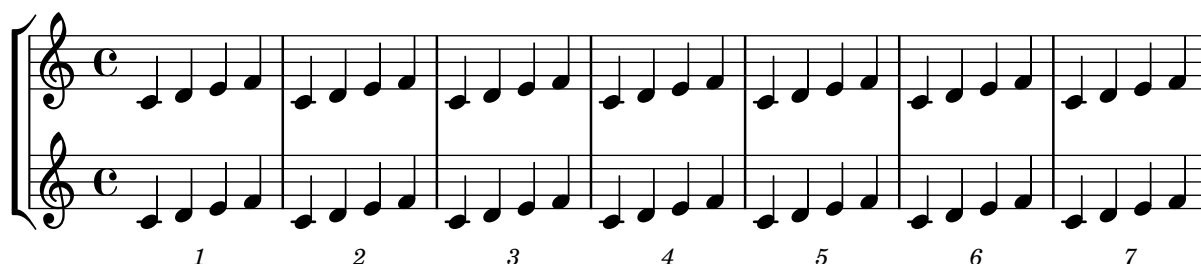
```

```
pattern = \repeat unfold 7 { c'4 d' e' f' }
```

```

\new StaffGroup <<
  \new Staff {
    \pattern
  }
  \new Staff {
    \pattern
  }
  \new Dynamics {
    \startMeasureCount
    s1*7
    \stopMeasureCount
  }
>>

```



## Changing the default bar lines

Default bar lines can be changed when re-defined in a score context.

% <http://lsr.di.unimi.it/LSR/Item?id=964>

%%=> <http://lists.gnu.org/archive/html/lilypond-user/2014-03/msg00126.html>

%%=> <http://lilypond.1069038.n5.nabble.com/Changing-the-default-end-repeat-bracket-tc169357>

```

\layout {
  \context {
    \Score
    %% Changing the defaults from engraver-init.ly
    measureBarType = "!"
    startRepeatBarType = "[|:"
    endRepeatBarType = ":|]"
  }
}

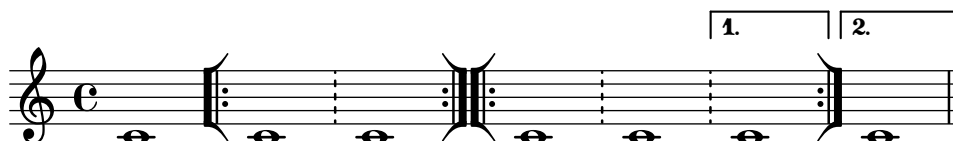
```

```

    doubleRepeatBarType = "[:|][|:]"
  }
}

%% example:
{
  c'1
  \repeat volta 2 { \repeat unfold 2 c' }
  \repeat volta 2 { \repeat unfold 2 c' }
  \alternative {
    { c' }
    {
      %% v2.18 workaround
      \once\override Score.VoltaBracket.shorten-pair = #'(1 . -1)
      c'
    }
  }
  \bar "|."
}

```



## Changing the number of lines in a staff

The number of lines in a staff may be changed by overriding the `StaffSymbol` property `line-count`.

```

upper = \relative c'' {
  c4 d e f
}

lower = \relative c {
  \clef bass
  c4 b a g
}

\score {
  \context PianoStaff <<
    \new Staff {
      \upper
    }
    \new Staff {
      \override Staff.StaffSymbol.line-count = #4
      \lower
    }
  >>
}

```



## Changing the staff size

Though the simplest way to resize staves is to use `#{set-global-staff-size xx}`, an individual staff's size can be changed by scaling the properties `'staff-space` and `fontSize`.

```
<<
  \new Staff {
    \relative c'' {
      \dynamicDown
      c8\ff c c c c c c c
    }
  }
  \new Staff \with {
    fontSize = #-3
    \override StaffSymbol.staff-space = #(magstep -3)
  } {
    \clef bass
    c8 c c c c\ff c c c
  }
>>
```



## Creating blank staves

To create blank staves, generate empty measures then remove the `Bar_number_engraver` from the `Score` context, and the `Time_signature_engraver`, `Clef_engraver` and `Bar_engraver` from the `Staff` context.

```
#{set-global-staff-size 20}
```

```
\score {
  {
    \repeat unfold 12 { s1 \break }
  }
  \layout {
    indent = 0\in
    \context {
      \Staff
      \remove "Time_signature_engraver"
      \remove "Clef_engraver"
      \remove "Bar_engraver"
    }
  }
}
```

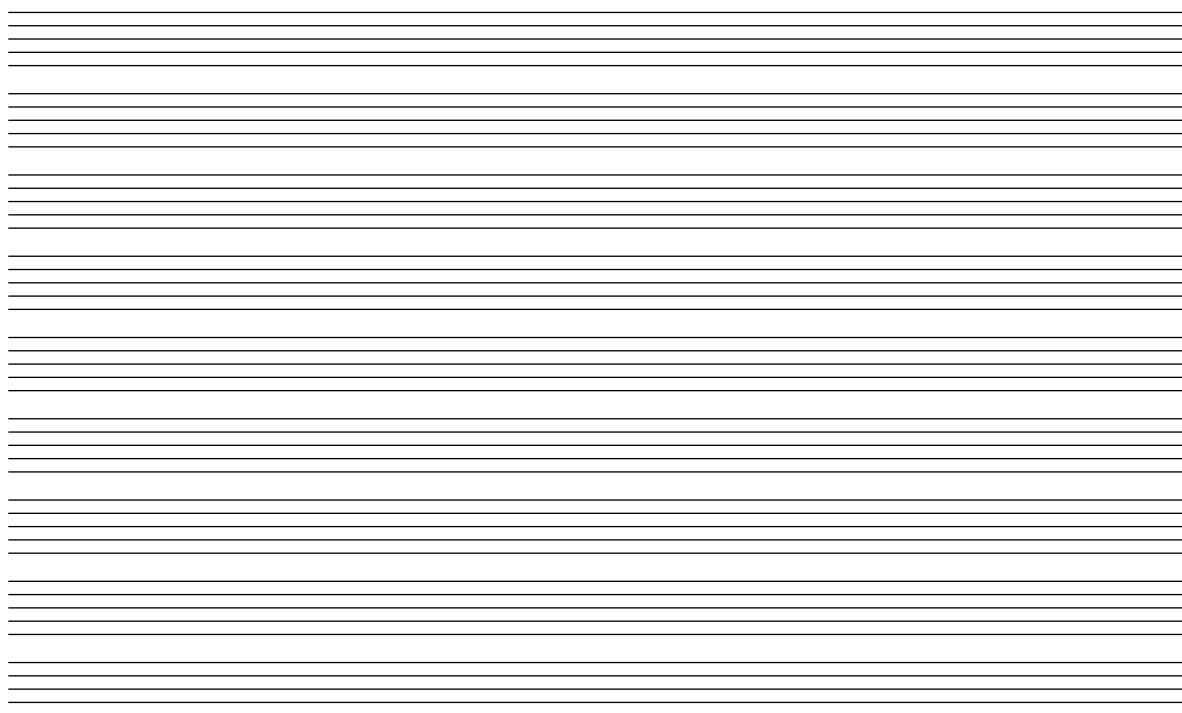
```

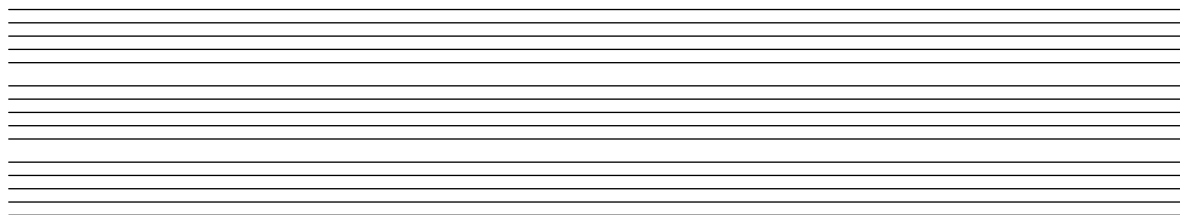
    }
    \context {
      \Score
      \remove "Bar_number_engraver"
    }
  }
}

% uncomment these lines for "letter" size
%{
\paper {
  #(set-paper-size "letter")
  ragged-last-bottom = ##f
  line-width = 7.5\in
  left-margin = 0.5\in
  bottom-margin = 0.25\in
  top-margin = 0.25\in
}
%}

% uncomment these lines for "A4" size
%{
\paper {
  #(set-paper-size "a4")
  ragged-last-bottom = ##f
  line-width = 180
  left-margin = 15
  bottom-margin = 10
  top-margin = 10
}
%}

```





## Creating custom key signatures

LilyPond supports custom key signatures. In this example, print for D minor with an extended range of printed flats.

```
\new Staff \with {
  \override StaffSymbol.line-count = #8
  \override KeySignature.flat-positions = #'((-7 . 6))
  \override KeyCancellation.flat-positions = #'((-7 . 6))
  % presumably sharps are also printed in both octaves
  \override KeySignature.sharp-positions = #'((-6 . 7))
  \override KeyCancellation.sharp-positions = #'((-6 . 7))

  \override Clef.stencil = #
  (lambda (grob)(grob-interpret-markup grob
    #{ \markup\combine
      \musicglyph "clefs.C"
      \translate #'(-3 . -2)
      \musicglyph "clefs.F"
    #})))
  clefPosition = #3
  middleCPosition = #3
  middleCClefPosition = #3
}

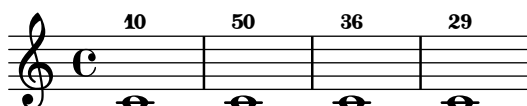
{
  \key d\minor
  f bes, f bes,
}
```



## Creating double-digit fingerings

Creating fingerings larger than 5 is possible.

```
\relative c' {
  c1-10
  c1-50
  c1-36
  c1-29
}
```



## Hälse über beide Systeme

Dieses Schnipsel zeigt den Einsatz von `Span_stem_engraver` und `\crossStaff`, um Hälse über Systeme hinweg automatisch zu verbinden. Die Länge des Halses muss definiert werden, da der variable Abstand zwischen Notenköpfen und Notensystemen automatisch errechnet wird.

```
\layout {
  \context {
    \PianoStaff
    \consists "Span_stem_engraver"
  }
}

\new PianoStaff <<
  \new Staff {
    <b d'>4 r d'16\> e'8. g8 r\! |
    e'8 f' g'4
    \voiceTwo \autoBeamOff
    % Down to lower staff
    \crossStaff { e'8 e'8 } e'4 |
  }

  \new Staff {
    \clef bass
    \voiceOne \autoBeamOff
    % Up to upper staff
    \crossStaff { <e g>4 e, g16 a8. c8 } d |
    \autoBeamOn g8 f g4 \voiceTwo g8 g g4 |
  }
>>
```



## Klammer anzeigen, wenn nur ein System gesetzt wird

Wenn nur ein System einer Systemgruppe vom Typ `ChoirStaff` oder `StaffGroup` angezeigt wird, wird die Klammer zu Beginn normalerweise nicht gesetzt. Das kann verändert werden, indem man die entsprechende Eigenschaft verändert.

Bei Systemen wie `PianoStaff` und `GrandStaff`, die mit einer geschweiften Klammer beginne, muss eine andere Eigenschaft verändert werden, wie das zweite Beispiel zeigt.

```
\score {
  \new StaffGroup <<
    % Must be lower than the actual number of staff lines
    \override StaffGroup.SystemStartBracket.collapse-height = 4
    \override Score.SystemStartBar.collapse-height = 4
    \new Staff {
      c'1
    }
  }
}
```

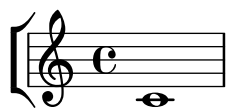


```

>>
}
\score {
  \new PianoStaff <<
    \override PianoStaff.SystemStartBrace.collapse-height = 4
    \override Score.SystemStartBar.collapse-height = 4
    \new Staff {
      c'1
    }
  >>
}

\paper { tagline = ##f }

```



## Extending a TrillSpanner

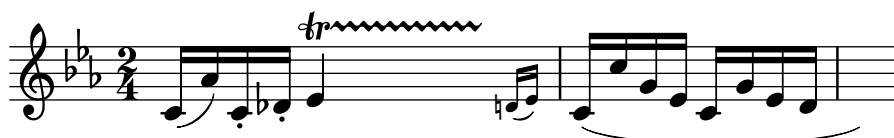
For `TrillSpanner`, the `minimum-length` property becomes effective only if the `set-spacing-rods` procedure is called explicitly.

To do this, the `springs-and-rods` property should be set to `ly:spanner::set-spacing-rods`.

```

\relative c' {
  \key c\minor
  \time 2/4
  c16( as') c,-. des-.
  \once\override TrillSpanner.minimum-length = #15
  \once\override TrillSpanner.springs-and-rods = #ly:spanner::set-spacing-rods
  \afterGrace es4
  \startTrillSpan { d16[( \stopTrillSpan es)] }
  c( c' g es c g' es d
  \hideNotes
  c8)
}

```



## Extending glissandi across repeats

A glissando which extends into several `\alternative` blocks can be simulated by adding a hidden grace note with a glissando at the start of each `\alternative` block. The grace note should be at the same pitch as the note which starts the initial glissando. This is implemented here with a music function which takes the pitch of the grace note as its argument.

Note that in polyphonic music the grace note must be matched with corresponding grace notes in all other voices.

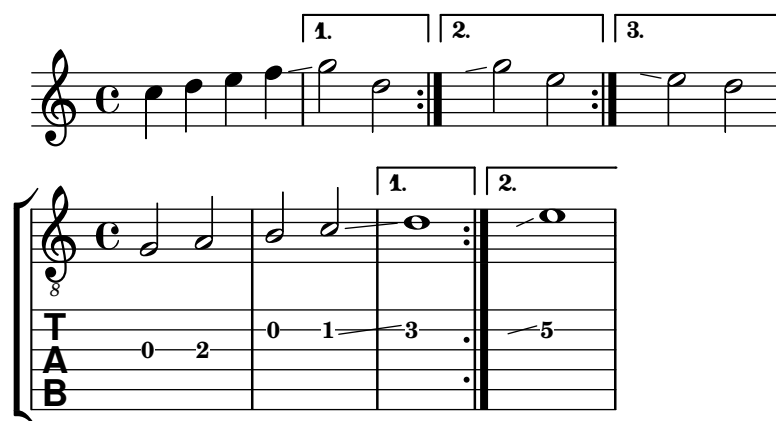
```
repeatGliss = #(define-music-function (grace)
  (ly:pitch?)
  #{
    % the next two lines ensure the glissando is long enough
    % to be visible
    \once \override Glissando.springs-and-rods
      = #ly:spanner::set-spacing-rods
    \once \override Glissando.minimum-length = 3.5
    \once \hideNotes
    \grace $grace \glissando
  #})

\score {
  \relative c' {
    \repeat volta 3 { c4 d e f\glissando }
    \alternative {
      { g2 d }
      { \repeatGliss f g2 e }
      { \repeatGliss f e2 d }
    }
  }
}

music = \relative c' {
  \voiceOne
  \repeat volta 2 {
    g a b c\glissando
  }
  \alternative {
    { d1 }
    { \repeatGliss c \once \omit StringNumber e1\2 }
  }
}

\score {
  \new StaffGroup <<
    \new Staff <<
      \new Voice { \clef "G_8" \music }
    >>
    \new TabStaff <<
      \new TabVoice { \clef "moderntab" \music }
    >>
  >>
}

\paper { tagline = ##f }
```



## Flat Ties

The function takes the default `Tie.stencil` as an argument, calculating the result relying on the extents of this default.

Further tweaking is possible by overriding `Tie.details.height-limit` or with `\shape`. It's also possible to change the custom-definition on the fly.

%% <http://lsr.di.unimi.it/LSR/Item?id=1031>

```
#(define ((flared-tie coords) grob)

  (define (pair-to-list pair)
    (list (car pair) (cdr pair)))

  (define (normalize-coords goods x y dir)
    (map
      (lambda (coord)
        ;(coord-scale coord (cons x (* y dir)))
        (cons (* x (car coord)) (* y dir (cdr coord))))
      goods))

  (define (my-c-p-s points thick)
    (make-connected-path-stencil
      points
      thick
      1.0
      1.0
      #f
      #f))

  ;; outer let to trigger suicide
  (let ((sten (ly:tie::print grob)))
    (if (grob::is-live? grob)
      (let* ((layout (ly:grob-layout grob))
              (line-thickness (ly:output-def-lookup layout 'line-thickness))
              (thickness (ly:grob-property grob 'thickness 0.1))
              (used-thick (* line-thickness thickness))
              (dir (ly:grob-property grob 'direction))
              (xex (ly:stencil-extent sten X))
              (yex (ly:stencil-extent sten Y)))
```

```

        (lenx (interval-length xex))
        (leny (interval-length yex))
        (xtrans (car xex))
        (ytrans (if (> dir 0)(car yex) (cdr yex)))
        (uplist
          (map pair-to-list
              (normalize-coords coords lenx (* leny 2) dir))))

      (ly:stencil-translate
        (my-c-p-s uplist used-thick)
        (cons xtrans ytrans)))
    '()))))

#(define flare-tie
  (flared-tie '((0 . 0)(0.1 . 0.2) (0.9 . 0.2) (1.0 . 0.0))))

\layout {
  \context {
    \Voice
    \override Tie.stencil = #flare-tie
  }
}

\paper {
  ragged-right = ##f
  tagline = ##f
}

\relative c' {
  a4~a
  \override Tie.height-limit = 4
  a'4~a
  a'4~a
  <a,, c e a c e a c e>~ q

  \break

  a'4~a
  \once \override Tie.details.height-limit = 14
  a4~a

  \break

  a4~a
  \once \override Tie.details.height-limit = 0.5
  a4~a

  \break

  a4~a
  \shape #'((0 . 0) (0 . 0.4) (0 . 0.4) (0 . 0)) Tie
  a4~a

```

```
\break
```

```
a4~a
```

```
\once \override Tie.stencil =
```

```
  \#(flared-tie '((0 . 0)(0.1 . 0.4) (0.9 . 0.4) (1.0 . 0.0)))
```

```
a4~a
```

```
a4~a
```

```
\once \override Tie.stencil =
```

```
  \#(flared-tie '((0 . 0)(0.06 . 0.1) (0.94 . 0.1) (1.0 . 0.0)))
```

```
a4~a
```

```
}
```



## Forcing measure width to adapt to MetronomeMark's width

By default, metronome marks do not influence horizontal spacing.

This can be solved through a simple override, as shown in the second half of the example.

```
example = {
```

```
  \tempo "Allegro"
```

```
  R1*6
```

```
  \tempo "Rall."
```

```
  R1*2
```

```
  \tempo "A tempo"
```

```
  R1*8
```

```
}
```

```
{
```

```
  \compressMMRests {
```

```
    \example
```

```
    R1
```

```

R1
\override Score.MetronomeMark.extra-spacing-width = #'(-3 . 0)
\example
}
}

```

The image shows two staves of musical notation. The first staff starts with a treble clef and a common time signature 'C'. It contains three measures: the first measure has a whole note on G4 with the tempo marking 'Allegro 6' above it; the second measure has a whole note on G4 with the tempo marking 'Rall. 2' above it; the third measure has a whole note on G4 with the tempo marking 'A tempo 8' above it. The second staff starts with a treble clef and a common time signature 'C'. It contains three measures: the first measure has a whole note on G4 with the tempo marking 'Allegro 6' above it; the second measure has a whole note on G4 with the tempo marking 'Rall. 2' above it; the third measure has a whole note on G4 with the tempo marking 'A tempo 8' above it. The staff number '18' is written to the left of the first measure.

## Glissando kann Grobs überspringen

NoteColumn-Grobs können bei Glissandos übersprungen werden.

```

\relative c' {
  a2 \glissando
  \once \override NoteColumn.glissando-skip = ##t
  f''4 d,
}

```

The image shows a musical staff with a treble clef and a common time signature 'C'. It contains two measures: the first measure has a whole note on A2 with a glissando line (a wavy line) leading to the second measure, which has a whole note on F4. The glissando line is labeled with the tempo marking 'Allegro 6' above it.

## Incipit

When transcribing mensural music, an incipit at the beginning of the piece is useful to indicate the original key and tempo. While today musicians are used to bar lines in order to faster recognize rhythmic patterns, bar lines were not yet invented during the period of mensural music; in fact, the meter often changed after every few notes. As a compromise, bar lines are often printed between the staves rather than on the staves.

```

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% A short excerpt from the Jubilate Deo by Orlande de Lassus
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

```

\header { tagline = ##f }

```

```

global = {
  \set Score.skipBars = ##t
  \key g \major
  \time 4/4

```

```

% the actual music
\skip 1*8

```

```

% let finis bar go through all staves
\override Staff.BarLine.transparent = ##f

```

```

    % finis bar
    \bar "|."
}

discantusIncipit = {
  \clef "neomensural-c1"
  \key f \major
  \time 2/2
  c'1.
}

discantusNotes = {
  \transpose c' c'' {
    \clef "treble"
    d'2. d'4 |
    b e' d'2 |
    c'4 e'4.( d'8 c' b |
    a4) b a2 |
    b4.( c'8 d'4) c'4 |
    \once \hide NoteHead
    c'1 |
    b\breve |
  }
}

discantusLyrics = \lyricmode {
  Ju -- bi -- la -- te De -- o,
  om -- nis ter -- ra, __ om-
  "...
  -us.
}

altusIncipit = {
  \clef "neomensural-c3"
  \key f \major
  \time 2/2
  r1 f'1.
}

altusNotes = {
  \transpose c' c'' {
    \clef "treble"
    r2 g2. e4 fis g |
    a2 g4 e |
    fis g4.( fis16 e fis4) |
    g1 |
    \once \hide NoteHead
    g1 |
    g\breve |
  }
}

```

```
altusLyrics = \lyricmode {
  Ju -- bi -- la -- te
  De -- o, om -- nis ter -- ra,
  "...
  -us.
}
```

```
tenorIncipit = {
  \clef "neomensural-c4"
  \key f \major
  \time 2/2
  r\longa
  r\breve
  r1 c'1.
}
```

```
tenorNotes = {
  \transpose c' c' {
    \clef "treble_8"
    R1 |
    R1 |
    R1 |
    % two measures
    r2 d'2. d'4 b e' |
    \once \hide NoteHead
    e'1 |
    d'\breve |
  }
}
```

```
tenorLyrics = \lyricmode {
  Ju -- bi -- la -- te
  "...
  -us.
}
```

```
bassusIncipit = {
  \clef "mensural-f"
  \key f \major
  \time 2/2
  r\maxima
  f1.
}
```

```
bassusNotes = {
  \transpose c' c' {
    \clef "bass"
    R1 |
    R1 |
    R1 |
    R1 |
    g2. e4 |
  }
```



```

    \once \hide NoteHead
    e1 |
    g\breve |
  }
}

bassusLyrics = \lyricmode {
  Ju -- bi-
  "... "
  -us.
}

\score {
  <<
    \new StaffGroup = choirStaff <<
      \new Voice = "discantusNotes" <<
        \set Staff.instrumentName = "Discantus"
        \incipit \discantusIncipit
        \global
        \discantusNotes
      >>
      \new Lyrics \lyricsto discantusNotes { \discantusLyrics }
      \new Voice = "altusNotes" <<
        \set Staff.instrumentName = "Altus"
        \global
        \incipit \altusIncipit
        \altusNotes
      >>
      \new Lyrics \lyricsto altusNotes { \altusLyrics }
      \new Voice = "tenorNotes" <<
        \set Staff.instrumentName = "Tenor"
        \global
        \incipit \tenorIncipit
        \tenorNotes
      >>
      \new Lyrics \lyricsto tenorNotes { \tenorLyrics }
      \new Voice = "bassusNotes" <<
        \set Staff.instrumentName = "Bassus"
        \global
        \incipit \bassusIncipit
        \bassusNotes
      >>
      \new Lyrics \lyricsto bassusNotes { \bassusLyrics }
    >>
  >>
  \layout {
    \context {
      \Score
      %% no bar lines in staves or lyrics
      \hide BarLine
    }
    %% the next two instructions keep the lyrics between the bar lines

```

```

\context {
  \Lyrics
  \consists "Bar_engraver"
  \consists "Separating_line_group_engraver"
}
\context {
  \Voice
  %% no slurs
  \hide Slur
  %% Comment in the below "\remove" command to allow line
  %% breaking also at those bar lines where a note overlaps
  %% into the next measure. The command is commented out in this
  %% short example score, but especially for large scores, you
  %% will typically yield better line breaking and thus improve
  %% overall spacing if you comment in the following command.
  %%\remove "Forbid_line_break_engraver"
}
indent = 6\cm
incipit-width = 4\cm
}

```

Discantus

Altus

Tenor

Bassus

3

## Inserting score fragments above a staff, as markups

The `\markup` command is quite versatile. In this snippet, it contains a `\score` block instead of texts or marks.

```
tuning = \markup {
  \score {
    \new Staff \with { \remove "Time_signature_engraver" }
    {
      \clef bass
      <c, g, d g>1
    }
    \layout { ragged-right = ##t indent = 0\cm }
  }
}

\header {
  title = "Solo Cello Suites"
  subtitle = "Suite IV"
  subsubtitle = \markup { Originalstimmung: \raise #0.5 \tuning }
  tagline = ##f
}

\layout { ragged-right = ##f }

\relative c' {
  \time 4/8
  \tuplet 3/2 { c8 d e } \tuplet 3/2 { c d e }
  \tuplet 3/2 { c8 d e } \tuplet 3/2 { c d e }
  g8 a g a
  g8 a g a
}
```

## Solo Cello Suites

### Suite IV

Originalstimmung: 



## Let TabStaff print the topmost string at bottom

In tablatures usually the first string is printed topmost. If you want to have it at the bottom change the `stringOneTopmost`-context-property. For a context-wide setting this could be done in layout as well.

```
%\layout {
% \context {
%   \Score
%   stringOneTopmost = ##f
% }
```

```

% \context {
%   \TabStaff
%   tablatureFormat = #fret-letter-tablature-format
% }
%}

m = {
  \cadenzaOn
  e, b, e gis! b e'
  \bar "||"
}

<<
\new Staff { \clef "G_8" <>_"default" \m <>_"italian (historic)"\m }
\new TabStaff
{
  \m
  \set Score.stringOneTopmost = ##f
  \set TabStaff.tablatureFormat = #fret-letter-tablature-format
  \m
}
>>

```

The image displays a musical score with two staves. The top staff is a treble clef with a common time signature 'C'. It contains two measures of music. The first measure is labeled 'default' and the second is labeled 'italian (historic)'. The bottom staff is a tablature staff with a 'T' clef and a 'B' clef. It contains two measures of tablature corresponding to the notes in the top staff. The first measure is labeled 'default' and the second is labeled 'italian (historic)'.

## Letter tablature formatting

Tablature can be formatted using letters instead of numbers.

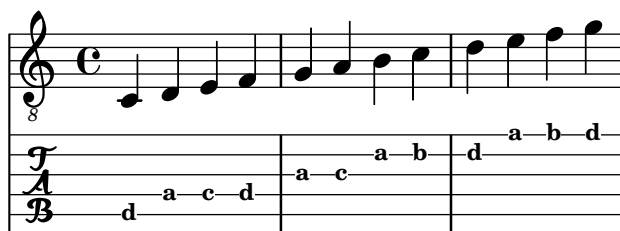
```

music = \relative c {
  c4 d e f
  g4 a b c
  d4 e f g
}

<<
\new Staff {
  \clef "G_8"
  \music
}
\new TabStaff \with {
  tablatureFormat = #fret-letter-tablature-format
}
{
  \music
}
>>

```

&gt;&gt;



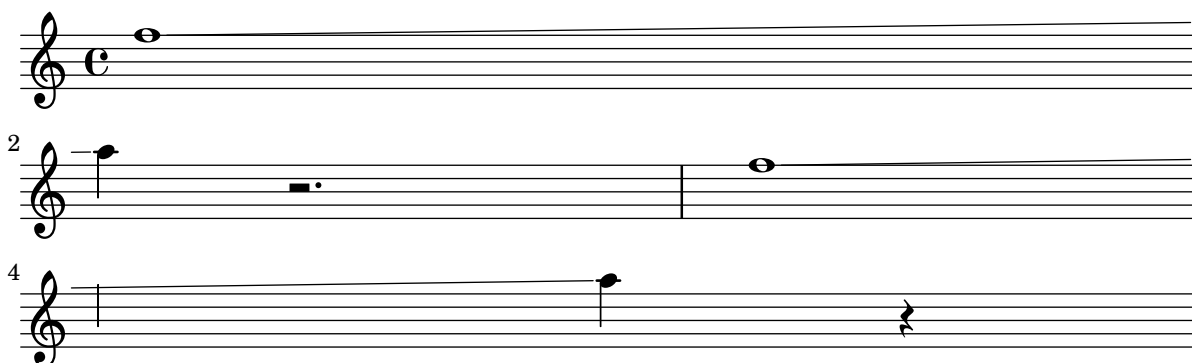
## Making glissandi breakable

Setting the breakable property to `##t` in combination with after-line-breaking allows a glissando to break if it occurs at a line break:

```
\paper { tagline = ##f }

glissandoSkipOn = {
  \override NoteColumn.glissando-skip = ##t
  \hide NoteHead
  \override NoteHead.no-ledgers = ##t
}

\relative c'' {
  \override Glissando.breakable = ##t
  \override Glissando.after-line-breaking = ##t
  f1\glissando |
  \break
  a4 r2. |
  f1\glissando
  \once \glissandoSkipOn
  \break
  a2 a4 r4 |
}
```



## Eine Linie des Notensystems dicker als die anderen machen

Für den pädagogischen Einsatz kann eine Linie des Notensystems dicker gezeichnet werden (z. B. die Mittellinie, oder um den Schlüssel hervorzuheben). Das ist möglich, indem man zusätzliche Linien sehr nahe an der Linie, die dicker erscheinen soll, einfügt. Dazu wird die `line-positions`-Eigenschaft herangezogen.

```
{
  \override Staff.StaffSymbol.line-positions =
```

```

#'(-4 -2 -0.2 0 0.2 2 4)
d'4 e' f' g'
}

```



## Measure counter

This snippet provides a workaround for emitting measure counters using transparent percent repeats.

```

<<
\context Voice = "foo" {
  \clef bass
  c4 r g r
  c4 r g r
  c4 r g r
  c4 r g r
}
\context Voice = "foo" {
  \set countPercentRepeats = ##t
  \hide PercentRepeat
  \override PercentRepeatCounter.staff-padding = #1
  \repeat percent 4 { s1 }
}
>>

```



## Mensurstriche-Layout (Taktstriche zwischen den Systemen)

Das Mensurstriche-Layout, in welchem die Taktlinien nicht auf den Systemen, sondern zwischen den Systemen gesetzt werden, kann mit einer `StaffGroup` anstelle von `ChoirStaff` erreicht werden. Die Taktlinien auf den Systemen werden mit der `transparent`-Eigenschaft ausgelöscht.

```

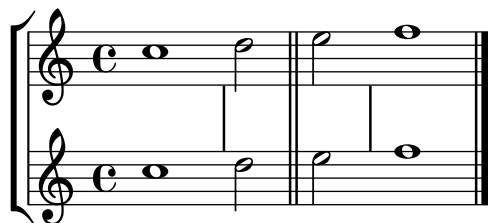
\layout {
  \context {
    \Staff
    measureBarType = "-span|"
  }
}

music = \fixed c'' {
  c1
  d2 \section e2
  f1 \fine
}

\new StaffGroup <<
  \new Staff \music
  \new Staff \music

```

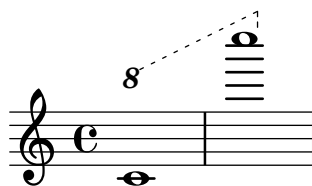
&gt;&gt;



## Modifying the Ottava spanner slope

It is possible to change the slope of the Ottava spanner.

```
\relative c'' {
  \override Staff.OttavaBracket.stencil = #ly:line-spanner::print
  \override Staff.OttavaBracket.bound-details =
    #`((left . ((Y . 0)
      (attach-dir . ,LEFT)
      (padding . 0)
      (stencil-align-dir-y . ,CENTER)))
      (right . ((Y . 5.0) ; Change the number here
        (padding . 0)
        (attach-dir . ,RIGHT)
        (text . ,(make-draw-dashed-line-markup
          (cons 0 -1.2))))))
  \override Staff.OttavaBracket.left-bound-info =
    #ly:horizontal-line-spanner::calc-left-bound-info-and-text
  \override Staff.OttavaBracket.right-bound-info =
    #ly:horizontal-line-spanner::calc-right-bound-info
  \ottava 1
  c1
  c''''1
}
```



## Systeme schachteln

Die Eigenschaft `systemStartDelimiterHierarchy` kann eingesetzt werden, um komplizierte geschachtelte Systemklammern zu erstellen. Der Befehl `\set StaffGroup.systemStartDelimiterHierarchy` nimmt eine Liste mit der Anzahl der Systeme, die ausgegeben werden, auf. Vor jedem System kann eine Systemanfangsklammer angegeben werden. Sie muss in Klammern eingefügt werden und umfasst so viele Systeme, wie die Klammer einschließt. Elemente in der Liste können ausgelassen werden, aber die erste Klammer umfasst immer die gesamte Gruppe. Die Möglichkeiten der Anfangsklammer sind: `SystemStartBar`, `SystemStartBracket`, `SystemStartBrace` und `SystemStartSquare`.

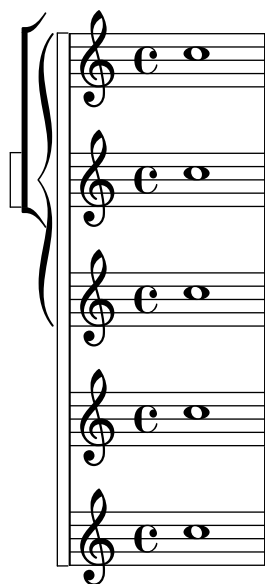
```
\new StaffGroup
\relative c'' <<
  \override StaffGroup.SystemStartSquare.collapse-height = 4
```

```

\set StaffGroup.systemStartDelimiterHierarchy
  = #'(SystemStartSquare (SystemStartBrace (SystemStartBracket a
                                           (SystemStartSquare b) ) c ) d)

\new Staff { c1 }
\new Staff { c1 }
\new Staff { c1 }
\new Staff { c1 }
\new Staff { c1 }
>>

```



## Untypische Tonarten

Der üblicherweise benutzte `\key`-Befehl setzt die `keySignature`-Eigenschaft im `Staff`-Kontext.

Um untypische Tonartenvorzeichen zu erstellen, muss man diese Eigenschaft direkt setzen. Das Format für den Befehl ist eine Liste: `\set Staff.keySignature = #`(((Oktave . Schritt) . Alteration) ((Oktave . Schritt) . Alteration) ...)` wobei für jedes Element in der Liste Oktave die Oktave angibt (0 ist die Oktave vom eingestrichenen C bis zum eingestrichenen H), Schritt gibt die Note innerhalb der Oktave an (0 heißt C und 6 heißt H), und Alteration ist `,SHARP`, `,FLAT`, `,DOUBLE-SHARP` usw. (Beachte das beginnende Komma.)

Alternativ kann auch jedes Element der Liste mit dem allgemeineren Format `(Schritt . Alteration)` gesetzt werden, wobei dann die Einstellungen für alle Oktaven gelten.

Hier ein Beispiel einer möglichen Tonart für eine Ganztonleiter:

```

\include "arabic.ly"
\relative do' {
  \set Staff.keyAlterations = #`((0 . ,SEMI-FLAT)
                                (1 . ,SEMI-FLAT)
                                (2 . ,FLAT)
                                (5 . ,FLAT)
                                (6 . ,SEMI-FLAT))

  %\set Staff.extraNatural = ##f
  re reb \down reb resd
  dod dob dosd \down dob |
  dobsb dods do do |
}

```





## Numbering groups of measures

This snippet demonstrates the use of the `Measure_counter_engraver` to number groups of successive measures. Any stretch of measures may be numbered, whether consisting of repetitions or not.

The engraver must be added to the appropriate context. Here, a `Staff` context is used; another possibility is a `Dynamics` context.

The counter is begun with `\startMeasureCount` and ended with `\stopMeasureCount`. Numbering will start by default with 1, but this behavior may be modified by overriding the `count-from` property.

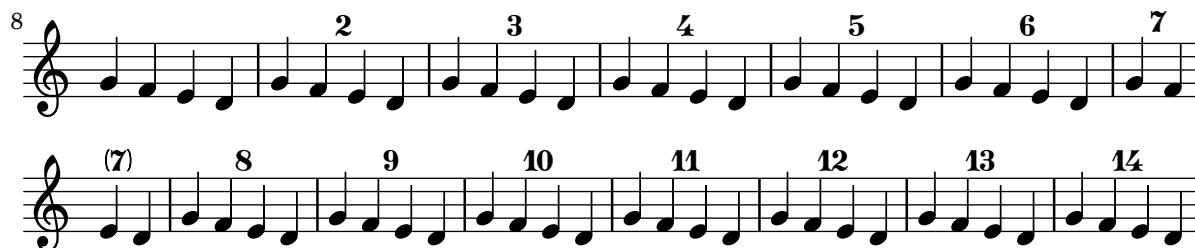
When a measure extends across a line break, the number will appear twice, the second time in parentheses.

```
\layout {
  \context {
    \Staff
    \consists #Measure_counter_engraver
  }
}

\new Staff {
  \startMeasureCount
  \repeat unfold 7 {
    c'4 d' e' f'
  }
  \stopMeasureCount
  \bar "||"
  g'4 f' e' d'
  \override Staff.MeasureCounter.count-from = #2
  \startMeasureCount
  \repeat unfold 5 {
    g'4 f' e' d'
  }
  g'4 f'
  \bar ""
  \break
  e'4 d'
  \repeat unfold 7 {
    g'4 f' e' d'
  }
  \stopMeasureCount
}

\paper { tagline = ##f }
```





## Orchester, Chor und Klavier

Diese Vorlage zeigt die Benutzung von geschachtelten `StaffGroup`- und `GrandStaff`-Kontexte, um Instrumente in Untergruppen zu unterteilen, und die Benutzung von `\transpose` für transponierende Instrumente. Alle Noten werden in C geschrieben. Noten können in C eingegeben werden, oder auch in der Tonart des Instrumentes: dann müssen sie zuerst nach C transponiert werden, bevor sie einer Variable zugewiesen werden.

```
#(set-global-staff-size 17)
```

```
\paper {
  indent = 3.0\cm % add space for instrumentName
  short-indent = 1.5\cm % add less space for shortInstrumentName
}
```

```
\header { tagline = ##f }
```

```
fluteMusic = \relative c' { \key g \major g'1 b }
```

```
% Pitches as written on a manuscript for Clarinet in A
% are transposed to concert pitch.
```

```
clarinetMusic = \transpose c' a
  \relative c'' { \key bes \major bes1 d }
```

```
trumpetMusic = \relative c { \key g \major g''1 b }
```

```
% Key signature is often omitted for horns
```

```
hornMusic = \transpose c' f
  \relative c { d'1 fis }
```

```
percussionMusic = \relative c { \key g \major g1 b }
```

```
sopranoMusic = \relative c'' { \key g \major g'1 b }
```

```
sopranoLyrics = \lyricmode { Lyr -- ics }
```

```
altoIMusic = \relative c' { \key g \major g'1 b }
```

```
altoIIMusic = \relative c' { \key g \major g'1 b }
```

```
altoILyrics = \sopranoLyrics
```

```

altoIIlyrics = \lyricmode { Ah -- ah }

tenorMusic = \relative c' { \clef "treble_8" \key g \major g1 b }

tenorLyrics = \sopranoLyrics

pianoRHMus = \relative c { \key g \major g'1 b }

pianoLHMus = \relative c { \clef bass \key g \major g1 b }

violinIMus = \relative c' { \key g \major g'1 b }

violinIIMus = \relative c' { \key g \major g'1 b }

violaMus = \relative c { \clef alto \key g \major g'1 b }

celloMus = \relative c { \clef bass \key g \major g1 b }

bassMus = \relative c { \clef "bass_8" \key g \major g,1 b }

\score {
  <<
    \new StaffGroup = "StaffGroup_woodwinds" <<
      \new Staff = "Staff_flute" \with { instrumentName = "Flute" }
      \fluteMus

      \new Staff = "Staff_clarinet" \with {
        instrumentName = \markup { \concat { "Clarinet in B" \flat } }
      }

      % Declare that written Middle C in the music
      % to follow sounds a concert B flat, for
      % output using sounded pitches such as MIDI.
      %\transposition bes

      % Print music for a B-flat clarinet
      \transpose bes c' \clarinetMus
    >>

    \new StaffGroup = "StaffGroup_brass" <<
      \new Staff = "Staff_hornI" \with { instrumentName = "Horn in F" }
      % \transposition f
      \transpose f c' \hornMus

      \new Staff = "Staff_trumpet" \with { instrumentName = "Trumpet in C" }
      \trumpetMus
    >>

    \new RhythmicStaff = "RhythmicStaff_percussion"
    \with { instrumentName = "Percussion" }
    <<
      \percussionMus

```

```

>>
\new PianoStaff \with { instrumentName = "Piano" }
<<
  \new Staff { \pianoRHMusical }
  \new Staff { \pianoLHMusical }
>>
\new ChoirStaff = "ChoirStaff_choir" <<
  \new Staff = "Staff_soprano" \with { instrumentName = "Soprano" }
  \new Voice = "soprano"
  \sopranoMusical

  \new Lyrics \lyricsto "soprano" { \sopranoLyrics }
  \new GrandStaff = "GrandStaff_altos"
  \with { \accepts Lyrics } <<
    \new Staff = "Staff_altoI" \with { instrumentName = "Alto I" }
    \new Voice = "altoI"
    \altoIMusical

    \new Lyrics \lyricsto "altoI" { \altoILyrics }
    \new Staff = "Staff_altoII" \with { instrumentName = "Alto II" }
    \new Voice = "altoII"
    \altoIIMusical

    \new Lyrics \lyricsto "altoII" { \altoIILyrics }
  >>

  \new Staff = "Staff_tenor" \with { instrumentName = "Tenor" }
  \new Voice = "tenor"
  \tenorMusical

  \new Lyrics \lyricsto "tenor" { \tenorLyrics }
>>
\new StaffGroup = "StaffGroup_strings" <<
  \new GrandStaff = "GrandStaff_violins" <<
    \new Staff = "Staff_violinI" \with { instrumentName = "Violin I" }
    \violinIMusical

    \new Staff = "Staff_violinII" \with { instrumentName = "Violin II" }
    \violinIIMusical
  >>

  \new Staff = "Staff_viola" \with { instrumentName = "Viola" }
  \violaMusical

  \new Staff = "Staff_cello" \with { instrumentName = "Cello" }
  \celloMusical

  \new Staff = "Staff_bass" \with { instrumentName = "Double Bass" }
  \bassMusical
>>
>>
\layout { }

```

}

## Print ChordNames with same root and different bass as slash and bass-note

To print subsequent ChordNames only differing in its bass note as slash and bass note use the here defined engraver. The behaviour may be controlled in detail by the chordChanges context property.

```
#(define Bass_changes_equal_root_engraver
  (lambda (ctx)
```

```
    "For sequential @code{ChordNames} with same root, but different bass, the root
    markup is dropped: D D/C D/B -> D /C /B
```

```
    The behaviour may be controlled by setting the @code{chordChanges}
    context-property."
```

```
    (let ((chord-pitches '())
          (last-chord-pitches '())
          (bass-pitch #f))
      (make-engraver
```

```

((initialize this-engraver)
  (let ((chord-note-namer (ly:context-property ctx 'chordNoteNamer)))
    ;; Set 'chordNoteNamer, respect user setting if already done
    (ly:context-set-property! ctx 'chordNoteNamer
      (if (procedure? chord-note-namer)
          chord-note-namer
          note-name->markup))))
(listeners
  ((note-event this-engraver event)
    (let* ((pitch (ly:event-property event 'pitch))
           (pitch-name (ly:pitch-notename pitch))
           (pitch-alt (ly:pitch-alteration pitch))
           (bass (ly:event-property event 'bass #f))
           (inversion (ly:event-property event 'inversion #f)))
      ;; Collect notes of the chord
      ;; - to compare inversed chords we need to collect the bass note
      ;;   as usual member of the chord, whereas an added bass must be
      ;;   treated separate from the usual chord-notes
      ;; - notes are stored as pairs containing their
      ;;   pitch-name (an integer), i.e. disregarding their octave and
      ;;   their alteration
      (cond (bass (set! bass-pitch pitch))
            (inversion
              (set! bass-pitch pitch)
              (set! chord-pitches
                (cons (cons pitch-name pitch-alt) chord-pitches))))
            (else
              (set! chord-pitches
                (cons (cons pitch-name pitch-alt) chord-pitches))))))
  (acknowledgers
    ((chord-name-interface this-engraver grob source-engraver)
      (let ((chord-changes (ly:context-property ctx 'chordChanges #f)))
        ;; If subsequent chords are equal apart from their bass,
        ;; reset the 'text-property.
        ;; Equality is done by comparing the sorted lists of this chord's
        ;; elements and the previous chord. Sorting is needed because
        ;; inverted chords may have a different order of pitches.
        ;; `chord-changes' needs to be true
        (if (and bass-pitch
                  chord-changes
                  (equal?
                    (sort chord-pitches car<)
                    (sort last-chord-pitches car<)))
            (ly:grob-set-property! grob 'text
              (make-line-markup
                (list
                  (ly:context-property ctx 'slashChordSeparator)
                  ((ly:context-property ctx 'chordNoteNamer)
                    bass-pitch
                    (ly:context-property ctx 'chordNameLowercaseMinor))))))
            (set! last-chord-pitches chord-pitches)
            (set! chord-pitches '()))

```

```

        (set! bass-pitch #f))))
      ((finalize this-engraver)
        (set! last-chord-pitches '())))))

myChords = \chordmode {
  %\germanChords

  \set chordChanges = ##t
  d2:m d:m/cis

  d:m/c
  \set chordChanges = ##f
  d:m/b

  e1:7
  \set chordChanges = ##t
  e
  \break
  \once \set chordChanges = ##f
  e1/f
  e2/gis e/+gis e e:m/f d:m d:m/cis d:m/c
  \set chordChanges = ##f
  d:m/b
}

<<
\new ChordNames
  \with { \consists #Bass_changes_equal_root_engraver }
  \myChords
\new Staff \myChords
>>

```

The image displays two staves of musical notation. The first staff contains six measures with the following chord symbols: Dm, /C#, /C, Dm/B, E<sup>7</sup>, and E. The second staff, starting with a measure rest (5), contains eight measures with the following chord symbols: E/F, /G#, E, Em/F, Dm, /C#, /C, and Dm/B. The notation uses treble clefs, common time, and various chord symbols with accidentals and stems.

## Putting lyrics inside the staff

Lyrics can be moved vertically to place them inside the staff. The lyrics are moved with `\override LyricText.extra-offset = #'(0 . dy)` and there are similar commands to move the extenders and hyphens. The offset needed is established with trial and error.

```

<<
\new Staff <<
  \new Voice = "voc" \relative c' { \stemDown a bes c8 b c4 }
>>

```

```

\new Lyrics \with {
  \override LyricText.extra-offset = #'(0 . 8.6)
  \override LyricExtender.extra-offset = #'(0 . 8.6)
  \override LyricHyphen.extra-offset = #'(0 . 8.6)
} \lyricsto "voc" { La la -- la _ _ la }
>>

```



## Eine andere Stimme zitieren

Die `quotedEventTypes`-Eigenschaft bestimmt die Typen an Musikereignissen, die zitiert werden. Die Standardeinstellung ist `(note-event rest-event)`, womit nur Noten und Pausen der zitierten Stimme für den `\quoteDuring`-Ausdruck übernommen werden. Im Beispiel hier wird die 16-Pause nicht übernommen, weil sich `rest-event` nicht in `quotedEventTypes` befindet.

```

quoteMe = \relative c' {
  fis4 r16 a8.-> b4\ff c
}
\addQuote quoteMe \quoteMe

original = \relative c'' {
  c8 d s2
  \once \override NoteColumn.ignore-collision = ##t
  es8 gis8
}

<<
\new Staff \with { instrumentName = "quoteMe" }
\quoteMe

\new Staff \with { instrumentName = "orig" }
\original

\new Staff \with {
  instrumentName = "orig+quote"
  quotedEventTypes = #'(note-event articulation-event)
}
\relative c''
<<
  \original
  \new Voice {
    s4
    \set fontSize = #-4
    \override Stem.length-fraction = #(magstep -4)
    \quoteDuring "quoteMe" { \skip 2. }
  }
>>
>>

```



quoteMe

orig

orig+quote

## Eine Stimme mit Transposition zitieren

Zitate berücksichtigen sowohl die Transposition der Quelle als auch des Zielinstruments. In diesem Beispiel spielen alle Instrumente klingendes C, das Zielinstrument ist in F. Die Noten für das Zielinstrument können mit \transpose transponiert werden, in diesem Fall werden alle Noten (auch die zitierten) transponiert.

```

\addQuote clarinet {
  \transposition bes
  \repeat unfold 8 { d'16 d' d'8 }
}

\addQuote sax {
  \transposition es'
  \repeat unfold 16 { a8 }
}

quoteTest = {
  % french horn
  \transposition f
  g'4
  << \quoteDuring "clarinet" { \skip 4 } s4^"clar." >>
  << \quoteDuring "sax" { \skip 4 } s4^"sax." >>
  g'4
}

{
  \new Staff \with {
    instrumentName = \markup { \column { Horn "in F" } }
  }
  \quoteTest
  \transpose c' d' << \quoteTest s4_"up a tone" >>
}

```

Horn  
in F

clar. sax. clar. sax.

up a tone

## Removing brace on first line of piano score

This snippet removes the first brace from a PianoStaff or a GrandStaff, together with the clefs.

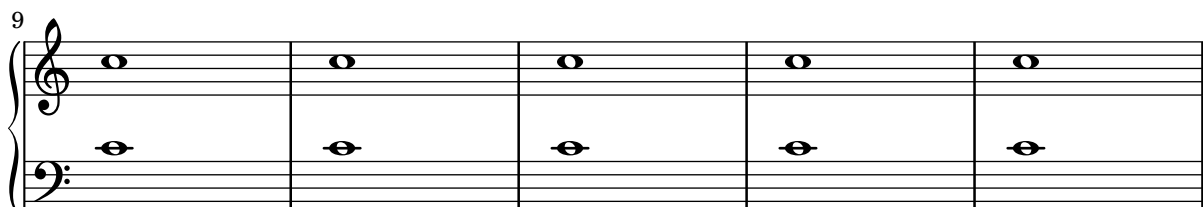
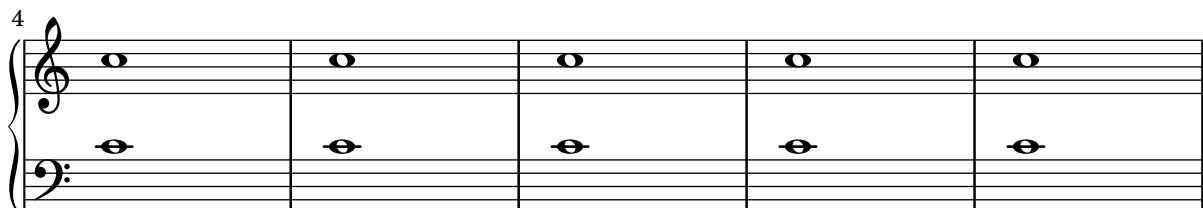
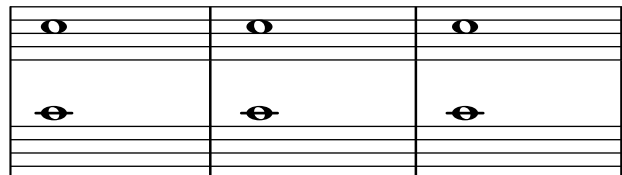
It may be useful when cutting and pasting the engraved image into existing music.

It uses `\alterBroken`.

```
someMusic = {
  \once \override Staff.Clef.stencil = ##f
  \once \override Staff.TimeSignature.stencil = ##f
  \repeat unfold 3 c1 \break
  \repeat unfold 5 c1 \break
  \repeat unfold 5 c1
}

\score {
  \new PianoStaff
  <<
    \new Staff = "right" \relative c' { \someMusic
    \new Staff = "left" \relative c' { \clef F \someMusic }
  >>
  \layout {
    indent=75
    \context {
      \PianoStaff
      \alterBroken transparent #'(#t) SystemStartBrace
    }
  }
}

\paper { tagline = ##f }
```



## Die erste leere Notenzeile auch entfernen

Ein leeres Notensystem kann auch aus der ersten Zeile einer Partitur entfernt werden, indem die Eigenschaft `remove-first` der `VerticalAxisGroup`-Eigenschaft eingesetzt wird. Das kann man global in einer `\layout`-Umgebung oder lokal in dem bestimmten Notensystem machen, das entfernt werden soll. In letzterem Fall muss man den Kontext angeben.

Das untere Notensystem der zweiten Systemgruppe wird nicht entfernt, weil in die Einstellungen in dem Schnipsel nur für das eine Notensystem gültig sind.

```
\layout {
  \context {
    \Staff \RemoveEmptyStaves
    % To use the setting globally, uncomment the following line:
    % \override VerticalAxisGroup.remove-first = ##t
  }
}
\new StaffGroup <<
  \new Staff \relative c' {
    e4 f g a \break
    c1
  }
  \new Staff {
    % To use the setting globally, comment this line,
    % uncomment the line in the \layout block above
    \override Staff.VerticalAxisGroup.remove-first = ##t
    R1 \break
    R
  }
>>
\new StaffGroup <<
  \new Staff \relative c' {
    e4 f g a \break
    c1
  }
  \new Staff {
    R1 \break
    R
  }
>>
```

```
\paper { tagline = ##f }
```

The image displays a musical score with two systems of staves. Each system consists of two staves. The top staff of each system contains a melody of four quarter notes (e, f, g, a) in C major. The bottom staff of each system contains a whole note (c) in C major. The staves are connected by a brace on the left. The first system is followed by a double bar line, and the second system is also followed by a double bar line. The staves are numbered 1 and 2 on the left side.

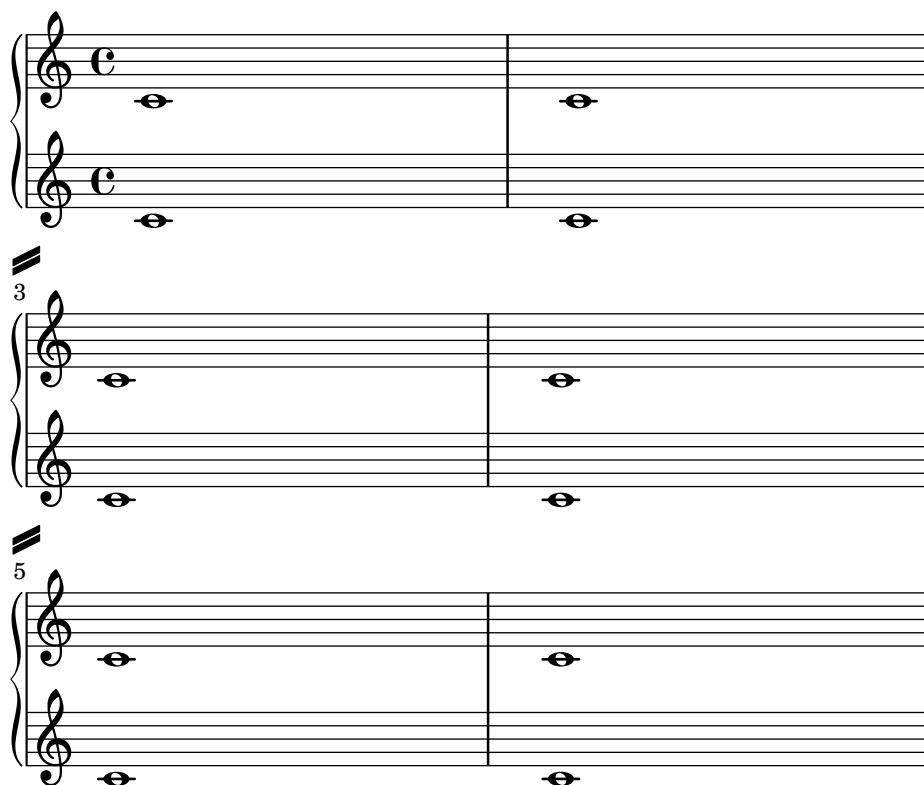
## Setting system separators

System separators can be inserted between systems. Any markup can be used, but `\slashSeparator` has been provided as a sensible default.

```
\paper {
  system-separator-markup = \slashSeparator
  line-width = 120
  tagline = ##f
}

notes = \relative c' {
  c1 | c \break
  c1 | c \break
  c1 | c
}

\book {
  \score {
    \new GrandStaff <<
      \new Staff \notes
      \new Staff \notes
    >>
  }
}
```



## Tick bar lines

'Tick' bar lines are often used in music where the bar line is used only for coordination and is not meant to imply any rhythmic stress.

```
\relative c' {
```

```

\set Score.measureBarType = #""
c4 d e f
g4 f e d
c4 d e f
g4 f e d
\bar "|"
}

```



## Time signature in brackets

The time signature can be enclosed within brackets.

```

\relative c' {
  \override Staff.TimeSignature.stencil = #(lambda (grob)
    (bracketify-stencil (ly:time-signature::print grob) Y 0.1 0.2 0.1))
  \time 2/4
  a4 b8 c
}

```



## Time signature in parentheses

Enclose the time signature in parentheses.

```

\relative c' {
  \override Staff.TimeSignature.stencil = #(lambda (grob)
    (parenthesize-stencil (ly:time-signature::print grob) 0.1 0.4 0.4 0.1))
  \time 2/4
  a4 b8 c
}

```



## Eigenschaften des Schlüssels optimieren

Der Befehl `\clef "treble_8"` ist gleichbedeutend mit einem expliziten Setzen der Eigenschaften von `clefGlyph`, `clefPosition` (welche die vertikale Position des Schlüssels bestimmt), `middleCPosition` und `clefTransposition`. Ein Schlüssel wird ausgegeben, wenn eine der Eigenschaften außer `middleCPosition` sich ändert.

Eine Änderung des Schriftzeichens (Glyph), der Schlüsselposition oder der Oktavierung selber ändert noch nicht die Position der darauf folgenden Noten auf dem System: das geschieht nur, wenn auch die Position des eingestrichenen C (`middleCPosition`) angegeben wird. Die Positionsparameter sind relativ zur Mittellinie des Systems, dabei versetzen positive Zahlen die Position nach oben, jeweils eine Zahl für jede Linie plus Zwischenraum. Der `clefTransposition`-Wert ist normalerweise auf 7, -7, 15 oder -15 gesetzt, aber auch andere Werte sind gültig.

Wenn ein Schlüsselwechsel an einem Zeilenwechsel geschieht, wird das neue Symbol sowohl am Ende der alten Zeilen als auch am Anfang der neuen Zeile ausgegeben. Wenn

der Warnungs-Schlüssel am Ende der alten Zeile nicht erforderlich ist, kann er unterdrückt werden, indem die `explicitClefVisibility`-Eigenschaft des Staff-Kontextes auf den Wert `end-of-line-invisible` gesetzt wird. Das Standardverhalten kann mit `\unset Staff.explicitClefVisibility` wieder hergestellt werden.

Die folgenden Beispiele zeigen die Möglichkeiten, wenn man diese Eigenschaften manuell setzt. Auf der ersten Zeile erhalten die manuellen Änderungen die ursprüngliche relative Positionierung von Schlüssel und Noten, auf der zweiten Zeile nicht.

```
{
  % The default treble clef
  \key f \major
  c'1
  % The standard bass clef
  \set Staff.clefGlyph = "clefs.F"
  \set Staff.clefPosition = 2
  \set Staff.middleCPosition = 6
  \set Staff.middleCClefPosition = 6
  \key g \major
  c'1
  % The baritone clef
  \set Staff.clefGlyph = "clefs.C"
  \set Staff.clefPosition = 4
  \set Staff.middleCPosition = 4
  \set Staff.middleCClefPosition = 4
  \key f \major
  c'1
  % The standard choral tenor clef
  \set Staff.clefGlyph = "clefs.G"
  \set Staff.clefPosition = -2
  \set Staff.clefTransposition = -7
  \set Staff.middleCPosition = 1
  \set Staff.middleCClefPosition = 1
  \key f \major
  c'1
  % A non-standard clef
  \set Staff.clefPosition = 0
  \set Staff.clefTransposition = 0
  \set Staff.middleCPosition = -4
  \set Staff.middleCClefPosition = -4
  \key g \major
  c'1 \break

  % The following clef changes do not preserve
  % the normal relationship between notes, key signatures
  % and clefs:

  \set Staff.clefGlyph = "clefs.F"
  \set Staff.clefPosition = 2
  c'1
  \set Staff.clefGlyph = "clefs.G"
  c'1
  \set Staff.clefGlyph = "clefs.C"
```

```

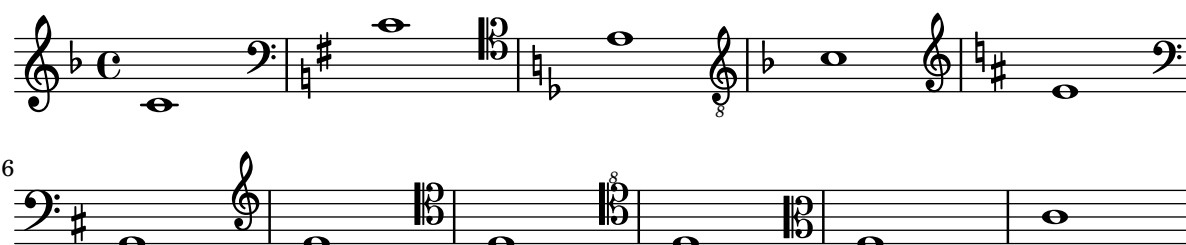
c'1
\set Staff.clefTransposition = 7
c'1
\set Staff.clefTransposition = 0
\set Staff.clefPosition = 0
c'1

% Return to the normal clef:

\set Staff.middleCPosition = 0
c'1
}

\paper { tagline = ##f }

```



## Two \partCombine pairs on one staff

The `\partCombine` function takes two music expressions each containing a part, and distributes them among four Voices named „two“, „one“, „solo“, and „chords“ depending on when and how the parts are merged into a common voice. The voices output from `\partCombine` can have their layout properties adjusted in the usual way. Here we define extensions of `\partCombine` to make it easier to put four voices on a staff.

```

soprano = { d'4 | cis' b e' d'8 cis' | cis'2 b }
alto = { fis4 | e8 fis gis ais b4 b | b ais fis2 }
tenor = { a8 b | cis' dis' e'4 b8 cis' d'4 | gis cis' dis'2 }
bass = { fis8 gis | a4 gis g fis | eis fis b,2 }

```

```

\new Staff <<
  \key b\minor
  \clef alto
  \partial 4
  \transpose b b'
  \partCombineUp \soprano \alto
  \partCombineDown \tenor \bass
>>

```

```

\layout {
  \context {
    \Staff
    \accepts "VoiceBox"
  }
  \context {
    \name "VoiceBox"
    \type "Engraver_group"
    \defaultchild "Voice"
  }
}

```

```

    \accepts "Voice"
    \accepts "NullVoice"
  }
}

customPartCombineUp =
#(define-music-function (partOne partTwo)
  (ly:music? ly:music?)
  "Take the music in @var{partOne} and @var{partTwo} and return
  a @code{VoiceBox} named @q{Up} containing @code{Voice}s
  that contain @var{partOne} and @var{partTwo} merged into one
  voice where feasible. This variant sets the default voicing
  in the output to use upward stems."
  #{
    \new VoiceBox = "Up" <<
      \context Voice = "one" { \voiceOne }
      \context Voice = "two" { \voiceThree }
      \context Voice = "shared" { \voiceOne }
      \context Voice = "solo" { \voiceOne }
      \context NullVoice = "null" {}
      \partCombine #partOne #partTwo
    >>
  #})

customPartCombineDown = #
(define-music-function (partOne partTwo)
  (ly:music? ly:music?)
  "Take the music in @var{partOne} and @var{partTwo} and return
  a @code{VoiceBox} named @q{Down} containing @code{Voice}s
  that contain @var{partOne} and @var{partTwo} merged into one
  voice where feasible. This variant sets the default voicing
  in the output to use downward stems."
  #{
    \new VoiceBox = "Down" <<
      \set VoiceBox.soloText = #"Solo III"
      \set VoiceBox.soloIIIText = #"Solo IV"
      \context Voice = "one" { \voiceFour }
      \context Voice = "two" { \voiceTwo }
      \context Voice = "shared" { \voiceFour }
      \context Voice = "solo" { \voiceFour }
      \context NullVoice = "null" {}
      \partCombine #partOne #partTwo
    >>
  #})

soprano = { d'4 | cis' b e' d'8 cis' | cis'2 b }
alto = { fis4 | e8 fis gis ais b4 b | b ais fis2 }
tenor = { a8 b | cis' dis' e'4 b8 cis' d'4 | gis cis' dis'2 }
bass = { fis8 gis | a4 gis g fis | eis fis b,2 }

\new Staff <<
  \key b\minor

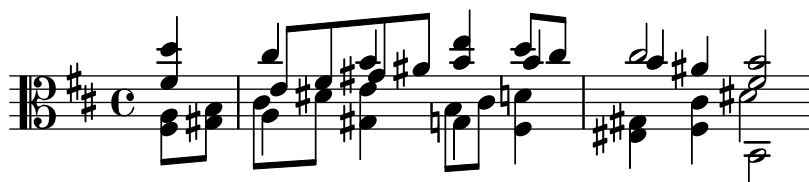
```



```

\clef alto
\partial 4
\transpose b b'
\customPartCombineUp \soprano \alto
\customPartCombineDown \tenor \bass
>>

```



## Eine eckige Klammer zu Beginn von Systemgruppen benutzen

Die Klammer zu Beginn von Systemgruppen kann auch in eine eckige Klammer (SystemStartSquare) umgewandelt werden, wenn man sie explizit im StaffGroup- oder ChoirStaffGroup-Kontext setzt.

```

\score {
  \new StaffGroup { <<
    \set StaffGroup.systemStartDelimiter = #'SystemStartSquare
    \new Staff { c'4 d' e' f' }
    \new Staff { c'4 d' e' f' }
  >> }
}

```



## Using autochange with more than one voice

Using autochange with more than one voice.

```

\score {
  \new PianoStaff
  <<
    \new Staff = "up" {
      <<
        \set Timing.beamExceptions = #'()
        \set Timing.beatStructure = #'(4)
        \new Voice {
          \voiceOne
          \autoChange
          \relative c' {
            g8 a b c d e f g
            g,8 a b c d e f g
          }
        }
      >>
    }
  >>
}

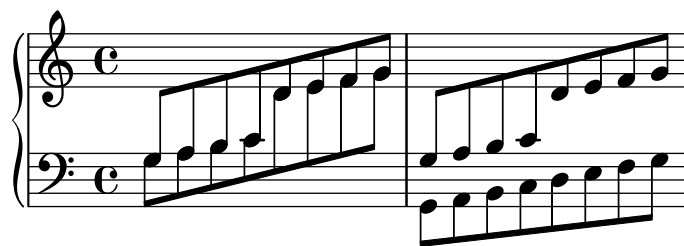
```

```

\new Voice {
  \voiceTwo
  \autoChange
  \relative c' {
    g8 a b c d e f g
    g,,8 a b c d e f g
  }
}
>>
}

\new Staff = "down" {
  \clef bass
}
>>
}

```



## Using marklines in a Frenched score

Using MarkLine contexts (such as in LSR1010 (<https://lsr.di.unimi.it/LSR/Item?id=1010>)) in a Frenched score can be problematic if all the staves between two MarkLines are removed in one system. The `Keep_alive_together_engraver` can be used within each StaffGroup to keep the MarkLine alive only as long as the other staves in the group stay alive.

```

bars = {
  \tempo "Allegro" 4=120
  s1*2
  \repeat unfold 5 { \mark \default s1*2 }
  \bar "||"
  \tempo "Adagio" 4=40
  s1*2
  \repeat unfold 8 { \mark \default s1*2 }
  \bar "|."
}

winds = \repeat unfold 120 { c''4 }
trumpet = { \repeat unfold 8 g'2 R1*16 \repeat unfold 4 g'2 R1*8 }
trombone = { \repeat unfold 4 c'1 R1*8 d'1 R1*17 }
strings = \repeat unfold 240 { c''8 }

#(set-global-staff-size 16)
\paper {
  systems-per-page = 5
  ragged-last-bottom = ##f
}

```

```

\layout {
  indent = 15\mm
  short-indent = 5\mm
  \context {
    \name MarkLine
    \type Engraver_group
    \consists Output_property_engraver
    \consists Axis_group_engraver
    \consists Mark_engraver
    \consists Metronome_mark_engraver
    \consists Staff_collecting_engraver
    \override VerticalAxisGroup.remove-empty = ##t
    \override VerticalAxisGroup.remove-layer = #'any
    \override VerticalAxisGroup.staff-affinity = #DOWN
    \override VerticalAxisGroup.nonstaff-relatedstaff-spacing.padding = 1
    keepAliveInterfaces = #'()
  }
  \context {
    \Staff
    \override VerticalAxisGroup.remove-empty = ##t
    \override VerticalAxisGroup.remove-layer = ##f
  }
  \context {
    \StaffGroup
    \accepts MarkLine
    \consists Keep_alive_together_engraver
  }
  \context {
    \Score
    \remove Mark_engraver
    \remove Metronome_mark_engraver
    \remove Staff_collecting_engraver
  }
}

\score {
  <<
  \new StaffGroup = "winds" \with {
    instrumentName = "Winds"
    shortInstrumentName = "Winds"
  } <<
  \new MarkLine \bars
  \new Staff \winds
  >>
  \new StaffGroup = "brass" <<
  \new MarkLine \bars
  \new Staff = "trumpet" \with {
    instrumentName = "Trumpet"
    shortInstrumentName = "Tpt"
  } \trumpet
  \new Staff = "trombone" \with {
    instrumentName = "Trombone"

```

```

        shortInstrumentName = "Tbn"
    } \trombone
>>
\new StaffGroup = "strings" \with {
    instrumentName = "Strings"
    shortInstrumentName = "Strings"
} <<
    \new MarkLine \bars
    \new Staff = "strings" { \strings }
>>
>>
}

```

The musical score is divided into four systems, each with a key signature of one flat (Bb) and a common time signature (C). The instruments are Winds, Trumpet, Trombone, and Strings.

- System 1:** Features sections A and B. The tempo is marked **Allegro** (♩ = 120). The Winds and Strings play a rhythmic pattern of eighth notes, while the Trumpet and Trombone play a similar pattern. Section A is marked with a repeat sign.
- System 2:** Features sections C and D. The tempo is marked **Allegro** (♩ = 120). The Winds and Strings play a rhythmic pattern of eighth notes, while the Trumpet and Trombone play a similar pattern. Section C is marked with a repeat sign.
- System 3:** Features sections E and F. The tempo is marked **Adagio** (♩ = 40). The Winds and Strings play a rhythmic pattern of eighth notes, while the Trombone plays a similar pattern. Section E is marked with a repeat sign.
- System 4:** Features sections G and H. The tempo is marked **Adagio** (♩ = 40). The Winds and Strings play a rhythmic pattern of eighth notes, while the Trombone plays a similar pattern. Section G is marked with a repeat sign.

## Vertically aligned StaffGroups without connecting SystemStartBar

This snippet shows how to achieve vertically aligned StaffGroups with a SystemStartBar for each StaffGroup, but without connecting them.

```
#(set-global-staff-size 18)
```

```
\header { tagline = ##f }
```

```
\paper {
  indent = 0
  ragged-right = ##f
  print-all-headers = ##t
}
```

```
\layout {
  \context {
    \StaffGroup
    \consists Text_mark_engraver
    \consists Staff_collecting_engraver
    systemStartDelimiterHierarchy =
      #'(SystemStartBrace (SystemStartBracket a b))
  }
}
```

```
\context {
  \Score
  \remove Text_mark_engraver
  \remove Staff_collecting_engraver
  \override SystemStartBrace.style = #'bar-line
  \omit SystemStartBar
  \override SystemStartBrace.padding = #-0.1
  \override SystemStartBrace.thickness = #1.6
  \override StaffGrouper.staffgroup-staff-spacing.basic-distance = #15
}
```

%%% EXAMPLE

```

txt =
\lyricmode {
  Wer4 nur den lie -- ben Gott läßt wal2 -- ten4
  und4 hof -- fet auf ihn al -- le Zeit2.
}

% First StaffGroup "exercise"

eI =
\relative c' {
  \textMark \markup {
    \bold Teacher:
    This is a simple setting of the choral. Please improve it.
  }
  \key a \minor
  \time 4/4
  \voiceOne

  \partial 4
  e4
  a b c b
  a b gis2
  e4\fermata g! g f
  e a a gis
  a2.\fermata
  \bar ":|."
}

eII =
\relative c' {
  \key a \minor
  \time 4/4
  \voiceTwo
  \partial 4
  c4
  e e e gis
  a f e2
  b4 b d d
  c c d d
  c2.
  \bar ":|."
}

eIII =
\relative c' {
  \key a \minor
  \time 4/4
  \clef bass
  \voiceOne

```

```

\partial 4
a4
c b a b
c d b2
gis4 g g b
c a f e
e2.
}

eIV =
\relative c' {
  \key a \minor
  \time 4/4
  \clef bass
  \voiceTwo

  \partial 4
  a,4
  a' gis a e
  a, d e2
  e,4\fermata e' b g
  c f d e
  a,2.\fermata
  \bar ":|."
}

exercise =
\new StaffGroup = "exercise"
<<

  \new Staff
  <<
    \new Voice \eI
    \new Voice \eII
  >>

  \new Lyrics \txt

  \new Staff
  <<
    \new Voice \eIII
    \new Voice \eIV
  >>
>>

% Second StaffGroup "simple Bach"

sbI =
\relative c' {
  \textMark \markup { \bold" Pupil:" Here's my version! }
  \key a \minor

```

```

\time 4/4
\voiceOne

\partial 4
e4
a b c b
a b gis2
e4\fermata g! g f
e a a gis
a2.\fermata
\bar " : | ."
}

```

```

sbII =
\relative c' {
  \key a \minor
  \time 4/4
  \voiceTwo
  \partial 4
  c8 d
  e4 e e8 f g4
  f f e2
  b4 b8 c d4 d
  e8 d c4 b8 c d4
  c2.
  \bar " : | ."
}

```

```

sbIII =
\relative c' {
  \key a \minor
  \time 4/4
  \clef bass
  \voiceOne

  \partial 4
  a8 b
  c4 b a b8 c
  d4 d8 c b2
  gis4 g g8 a b4
  b a8 g f4 e
  e2.
}

```

```

sbIV =
\relative c' {
  \key a \minor
  \time 4/4
  \clef bass
  \voiceTwo

  \partial 4

```



```

a,4
a' gis a e
f8 e d4 e2
e,4\fermata e' b a8 g
c4 f8 e d4 e
a,2.\fermata
\bar " : | . "
}

simpleBach =
\new StaffGroup = "simple Bach"
<<

\new Staff
<<
  \new Voice \sbI
  \new Voice \sbII
>>

\new Lyrics \txt

\new Staff
<<
  \new Voice \sbIII
  \new Voice \sbIV
>>
>>

% Third StaffGroup "chromatic Bach"

cbI =
\relative c' {
  \textMark \markup {
    \bold "Teacher:"
    \column {
      "Well, you simply copied and transposed a version of J.S.Bach."
      "Do you know this one?"
    }
  }
}
\key a \minor
\time 4/4
\voiceOne

\partial 4
e4
a b c b
a b gis4. fis8
e4\fermata g! g f
e a a8 b gis4
a2.\fermata
\bar " : | . "
}

```

```

cbII =
\relative c' {
  \key a \minor
  \time 4/4
  \voiceTwo
  \partial 4
  c8 d
  e4 e e8 fis gis4
  a8 g! f!4 e2
  b4 e e d
  d8[ cis] d dis e fis e4
  e2.
  \bar ":|."
}

cbIII =
\relative c' {
  \key a \minor
  \time 4/4
  \clef bass
  \voiceOne

  \partial 4
  a8 b
  c[ b] a gis8 a4 d,
  e8[ e'] d c b4. a8
  gis4 b c d8 c
  b[ a] a b c b b c16 d
  c2.
}

cbIV =
\relative c' {
  \key a \minor
  \time 4/4
  \clef bass
  \voiceTwo

  \partial 4
  a4
  c, e a, b
  c d e2
  e4\fermata e a b8 c
  gis[ g] fis f e dis e4
  a,2.\fermata
  \bar ":|."
}

chromaticBach =
\new StaffGroup = "chromatic Bach"
<<

```

```

\new Staff
  <<
    \new Voice \cbI
    \new Voice \cbII
  >>

\new Lyrics \txt

\new Staff
  <<
    \new Voice \cbIII
    \new Voice \cbIV
  >>
>>

% Score

\score {
  <<
    \exercise
    \simpleBach
    \chromaticBach
  >>

  \header {
    title = \markup
      \column {
        \combine \null \vspace #1
        "Exercise: Improve the given choral"
        " "
      }
  }

  \layout {
    \context {
      \Lyrics
      \override LyricText.X-offset = #-1
    }
  }
}

```

## Exercise: Improve the given choral

**Teacher:** This is a simple setting of the choral. Please improve it.

A musical score for a simple setting of the choral, presented in a grand staff (treble and bass clefs) with a common time signature (C). The melody is written in the treble clef, and the bass line is in the bass clef. The lyrics are: "Wer nur den lie - ben Gott läßt wal -". The melody is simple, using mostly whole and half notes, with a few accidentals (sharps and naturals).

**Pupil:** Here's my version!

A musical score for the Pupil's version of the choral, presented in a grand staff (treble and bass clefs) with a common time signature (C). The melody is written in the treble clef, and the bass line is in the bass clef. The lyrics are: "Wer nur den lie - ben Gott läßt wal -". The melody is more complex than the Teacher's version, using more eighth and sixteenth notes, and includes some accidentals (sharps and naturals).

**Teacher:** Well, you simply copied and transposed a version of J.S.Bach.  
Do you know this one?

A musical score for the Teacher's reference version of the choral, presented in a grand staff (treble and bass clefs) with a common time signature (C). The melody is written in the treble clef, and the bass line is in the bass clef. The lyrics are: "Wer nur den lie - ben Gott läßt wal -". The melody is more complex than the Pupil's version, using more eighth and sixteenth notes, and includes some accidentals (sharps and naturals).

ten und hof - fet auf ihn al - le Zeit

ten und hof - fet auf ihn al - le Zeit

ten und hof - fet auf ihn al - le Zeit

## Wiederholungs-(Volta-)Klammern unterhalb der Akkordsymbole

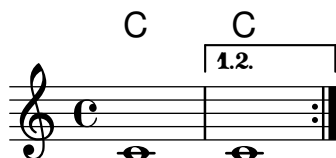
Indem man den `Volta_engraver` zu dem entsprechenden Notensystem hinzufügt, können Wiederholungsklammern unterhalb der Akkorde gesetzt werden.

```
\score {
  <<
    \chords {
      c1
      c1
    }
    \new Staff \with {
      \consists "Volta_engraver"
    }
    {
      \repeat volta 2 { c'1 }
      \alternative { c' }
    }
  >>
  \layout {
    \context {
```

```

\Score
\remove "Volta_engraver"
}
}
}

```



## Volta multi staff

By adding the `Volta_engraver` to the relevant staff, voltes can be put over staves other than the topmost one in a score.

```

voltaMusic = \relative c'' {
  \repeat volta 2 {
    c1
    \alternative {
      \volta 1 { d1 }
      \volta 2 { e1 }
    }
  }
}

<<
\new StaffGroup <<
  \new Staff \voltaMusic
  \new Staff \voltaMusic
>>
\new StaffGroup <<
  \new Staff \with { \consists "Volta_engraver" }
    \voltaMusic
  \new Staff \voltaMusic
>>
>>

```

## Editorial annotations

Abschnitt “Editorial annotations” in *Notationsreferenz*

### Adding fingerings to a score

Fingering instructions can be entered using a simple syntax.

```
\relative c' ' {
  c4-1 d-2 f-4 e-3
}
```



### Adding links to objects

To add a link to a grob stencil you can use `add-link` as defined here. It works both with `\override` and `\tweak`.

Drawback: point-and-click is disturbed for the linked grobs.

Limitation: Works for PDF only.

The linked objects are colored with a separate command. Note that the links are not displayed and are not clickable from inside the LSR.

```
#(define (add-link url-strg)
  (lambda (grob)
    (let* ((stil (ly:grob-property grob 'stencil)))
      (if (ly:stencil? stil)
          (let* ((x-ext (ly:stencil-extent stil X))
                 (y-ext (ly:stencil-extent stil Y))
                 (url-expr `(url-link ,url-strg ,x-ext ,y-ext))
                 (new-stil
                  (ly:stencil-add
                   (ly:make-stencil url-expr x-ext y-ext)
                   stil)))
            (ly:grob-set-property! grob 'stencil new-stil))))))
```

```
%%% test
```

```
%% For easier maintenance of this snippet the URL is formatted to use the
%% actually used LilyPond version.
%% Of course a literal URL would work as well.
```

```
#(define major.minor-version
  (string-join (take (string-split (lilypond-version) #\.) 2) "."))

urlI =
#(format #f
  "http://lilypond.org/doc/v~a/Documentation/notation/writing-pitches"
  major.minor-version)

urlII =
#(format #f
```

```

"http://lilypond.org/doc/v~a/Documentation/notation/rhythms"
major.minor-version)

urlIII =
#(format #f
  "http://lilypond.org/doc/v~a/Documentation/notation/note-heads"
  major.minor-version)

urlIV =
#(format #f
  "http://lilypond.org/doc/v~a/Documentation/notation/beams"
  major.minor-version)

urlV =
#(format #f
  "http://lilypond.org/doc/v~a/Documentation/notation/note-head-styles"
  major.minor-version)

urlVI =
#(format #f
  "http://lilypond.org/doc/v~a/Documentation/notation/writing-pitches"
  major.minor-version)

\relative c' {
  \key cis \minor

  \once \override Staff.Clef.color = #green
  \once \override Staff.Clef.after-line-breaking =
    #(add-link urlI)

  \once \override Staff.TimeSignature.color = #green
  \once \override Staff.TimeSignature.after-line-breaking =
    #(add-link urlII)

  \once \override NoteHead.color = #green
  \once \override NoteHead.after-line-breaking =
    #(add-link urlIII)

  cis'1
  \once \override Beam.color = #green
  \once \override Beam.after-line-breaking =
    #(add-link urlIV)
  cis8 dis e fis gis2
  <gis,
    \tweak Accidental.color #green
    \tweak Accidental.after-line-breaking #(add-link urlVI)
    \tweak color #green
    \tweak after-line-breaking #(add-link urlV)
    \tweak style #'harmonic
  bis
  dis
  fis

```



```
>1
<cis, cis' e>
}
```



## Adding markups in a tablature

By default markups does not show in a tablature.

To make them appear, simply use the command `\revert TabStaff.TextScript.stencil`

*%% http://lsr.di.unimi.it/LSR/Item?id=919*

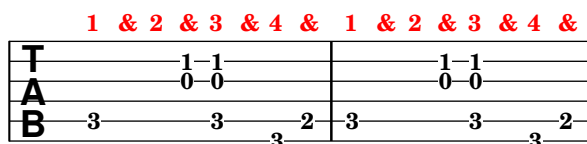
*% by P.P.Schneider on June 2014*

```
high = { r4 r8 <g c'> q r8 r4 }
```

```
low = { c4 r4 c8 r8 g,8 b, }
```

```
pulse = { s8^"1" s^"&" s^"2" s^"&" s^"3" s^"&" s^"4" s^"&" }
```

```
\score {
  \new TabStaff {
    \repeat unfold 2 << \high \\\ \low \\\ \pulse >>
  }
  \layout {
    \context {
      \TabStaff
      \clef moderntab
      \revert TextScript.stencil
      \override TextScript.font-series = #'bold
      \override TextScript.font-size = #-2
      \override TextScript.color = #red
    }
  }
  \context {
    \Score
    proportionalNotationDuration = \musicLength 8
  }
}
```



## Fingersatz auch innerhalb des Systems setzen

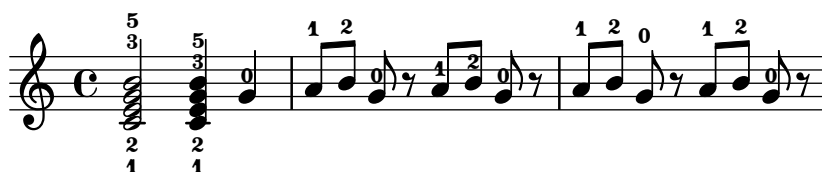
Normalerweise werden vertikal orientierte Fingersatzzahlen außerhalb des Systems gesetzt. Das kann aber verändert werden.

```
\relative c' {
  <c-1 e-2 g-3 b-5>2
```

```

\override Fingering.staff-padding = #'()
<c-1 e-2 g-3 b-5>4 g'-0
a8[-1 b]-2 g-0 r
\override Fingering.add-stem-support = ##f
a[-1 b]-2 g-0 r
\override Fingering.add-stem-support = ##t
a[-1 b]-2 g-0 r
\override Fingering.add-stem-support = #only-if-beamed
a[-1 b]-2 g-0 r
}

```



## Alternative Taktnummerierung

Zwei alternative Methoden können eingestellt werden, die die Taktnummerierung beeinflussen, insbesondere bei Wiederholungen.

```

music = \relative c' {
  \repeat volta 3 {
    c4 d e f |
    \alternative {
      \volta 1 { c4 d e f | c2 d \break }
      \volta 2 { f4 g a b | f4 g a b | f2 a | \break }
      \volta 3 { c4 d e f | c2 d } } }
  c1 \bar "|"
}

\markup "default"
{
  \music
}

\markup \typewriter "'numbers"
{
  \set Score.alternativeNumberingStyle = #'numbers
  \music
}

\markup \typewriter "'numbers-with-letters"
{
  \set Score.alternativeNumberingStyle = #'numbers-with-letters
  \music
}

\paper { tagline = ##f }

default

```

A musical score in treble clef with a common time signature 'C'. It consists of three staves. The first staff has a first ending bracket labeled '1.' above it. The second staff is preceded by a measure rest '4' and has a second ending bracket labeled '2.' above it. The third staff is preceded by a measure rest '7' and has a third ending bracket labeled '3.' above it. Each ending bracket spans the final measure of the staff.

'numbers

A musical score in treble clef with a common time signature 'C'. It consists of three staves. The first staff has a first ending bracket labeled '1.' above it. The second staff is preceded by a measure rest '2' and has a second ending bracket labeled '2.' above it. The third staff is preceded by a measure rest '2' and has a third ending bracket labeled '3.' above it. Each ending bracket spans the final measure of the staff.

'numbers-with-letters

A musical score in treble clef with a common time signature 'C'. It consists of three staves. The first staff has a first ending bracket labeled '1.' above it. The second staff is preceded by a measure rest '2b' and has a second ending bracket labeled '2.' above it. The third staff is preceded by a measure rest '2c' and has a third ending bracket labeled '3.' above it. Each ending bracket spans the final measure of the staff.

## Analysis brackets above the staff

Simple horizontal analysis brackets are added below the staff by default. The following example shows a way to place them above the staff instead.

```
\layout {
  \context {
    \Voice
    \consists "Horizontal_bracket_engraver"
  }
}
```

```
\relative c' {
  \once \override HorizontalBracket.direction = #UP
  c2\startGroup
  d2\stopGroup
}
```



## Analysis brackets with labels

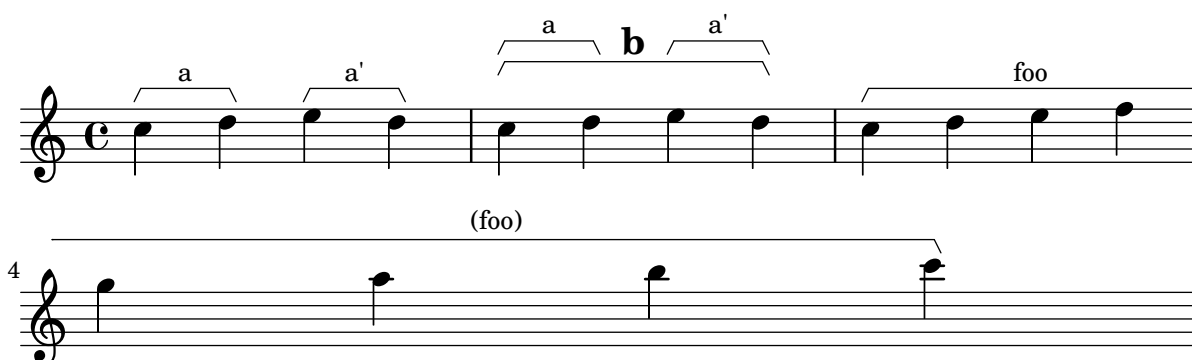
Text markup may be added to analysis brackets through the `text` property of the `HorizontalBracketText` grob. Adding different texts to brackets beginning at the same time requires the `\tweak` command.

Bracket text will be parenthesized after a line break.

```
\paper { tagline = ##f }
```

```
\layout {
  \context {
    \Voice
    \consists "Horizontal_bracket_engraver"
    \override HorizontalBracket.direction = #UP
  }
}

{
  \once\override HorizontalBracketText.text = "a"
  c''\startGroup d''\stopGroup
  \once\override HorizontalBracketText.text = "a'"
  e''\startGroup d''\stopGroup |
  c''-\tweak HorizontalBracketText.text
    \markup \bold \huge "b" \startGroup
    -\tweak HorizontalBracketText.text "a" \startGroup
    d''\stopGroup
  e''-\tweak HorizontalBracketText.text "a'" \startGroup
  d''\stopGroup\stopGroup |
  c''-\tweak HorizontalBracketText.text foo \startGroup
  d'' e'' f'' | \break
  g'' a'' b'' c'''\stopGroup
}
```



## Notenkopfstile basierend auf der Tonleiterstufe erstellen

Die `shapeNoteStyles`-(NotenFormenStile)-Eigenschaft kann benutzt werden, um verschiedene Notenstile für jeden Schritt der Tonleiter zu definieren (vorgegeben von der Tonart oder der „tonic“ (Tonika)-Eigenschaft. Diese Eigenschaft braucht eine Anzahl von Symbolen, welche beliebig sein können (geometrische Ausdrücke wie `triangle` (Dreieck), `cross` (Kreuz) und `xcircle` (X-Kreis) sind erlaubt) oder basierend auf einer alten amerikanischen Notensatztradition (einige lateinische Notenbezeichnungen sind auch erlaubt).

Um alte amerikanische Liederbücher zu imitieren, gibt es einige vordefinierte Notenstile wie etwa `\aikenHeads` (im Stil von Aiken) oder `\sacredHarpHeads` (im Stil der Sacred Harp-Tradition).

Dieses Beispiel zeigt, wie man unterschiedlich geformte Noten erhält und eine Melodie transponieren kann, ohne dass das Verhältnis zwischen den harmonischen Funktionen und dem Notenstil verloren geht.

```
fragment = {
  \key c \major
  c2 d
  e2 f
  g2 a
  b2 c
}

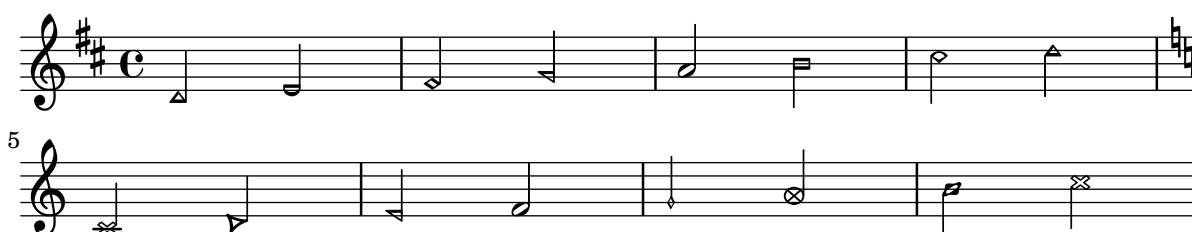
\new Staff {
  \transpose c d
  \relative c' {
    \set shapeNoteStyles = ##(do re mi fa
                          #f la ti)

    \fragment
  }

  \break

  \relative c' {
    \set shapeNoteStyles = ##(cross triangle fa #f
                          mensural xcircle diamond)

    \fragment
  }
}
```



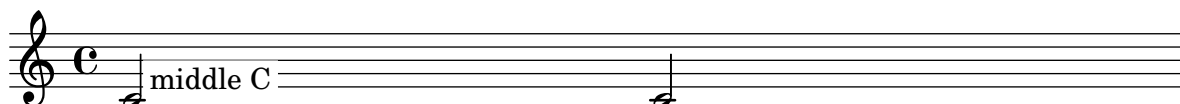
## Blanking staff lines using the `\whiteout` command

The `\whiteout` command underlays a markup with a white box. Since staff lines are in a lower layer than most other grobs, this white box will not overlap any other grob.

```
\layout {
  ragged-right = ##f
```

}

```
\relative c' {
  \override TextScript.extra-offset = #'(2 . 4)
  c2-\markup { \whiteout \pad-markup #0.5 "middle C" } c
}
```

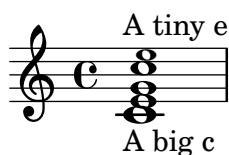


## Changing a single note's size in a chord

Individual note heads in a chord can be modified with the `\tweak` command inside a chord, by altering the `font-size` property.

Inside the chord (within the brackets `< >`), before the note to be altered, place the `\tweak` command, followed by `font-size` and define the proper size like `#-2` (a tiny note head).

```
\relative c' {
  <\tweak font-size #+2 c e g c
  \tweak font-size #-2 e>1
  ~\markup { A tiny e }_\markup { A big c }
}
```



## Changing the appearance of a slur from solid to dotted or dashed

The appearance of slurs may be changed from solid to dotted or dashed.

```
\relative c' {
  c4( d e c)
  \slurDotted
  c4( d e c)
  \slurSolid
  c4( d e c)
  \slurDashed
  c4( d e c)
  \slurSolid
  c4( d e c)
}
```



## Coloring notes depending on their pitch

It is possible to color note heads depending on their pitch and/or their names: the function used in this example even makes it possible to distinguish enharmonics.

```
%Association list of pitches to colors.
#(define color-mapping
  (list
    (cons (ly:make-pitch 0 0 NATURAL) (x11-color 'red))
    (cons (ly:make-pitch 0 0 SHARP) (x11-color 'green))
    (cons (ly:make-pitch 0 1 FLAT) (x11-color 'green))
    (cons (ly:make-pitch 0 2 NATURAL) (x11-color 'red))
    (cons (ly:make-pitch 0 2 SHARP) (x11-color 'green))
    (cons (ly:make-pitch 0 3 FLAT) (x11-color 'red))
    (cons (ly:make-pitch 0 3 NATURAL) (x11-color 'green))
    (cons (ly:make-pitch 0 4 SHARP) (x11-color 'red))
    (cons (ly:make-pitch 0 5 NATURAL) (x11-color 'green))
    (cons (ly:make-pitch 0 5 FLAT) (x11-color 'red))
    (cons (ly:make-pitch 0 6 SHARP) (x11-color 'red))
    (cons (ly:make-pitch 0 1 NATURAL) (x11-color 'blue))
    (cons (ly:make-pitch 0 3 SHARP) (x11-color 'blue))
    (cons (ly:make-pitch 0 4 FLAT) (x11-color 'blue))
    (cons (ly:make-pitch 0 5 SHARP) (x11-color 'blue))
    (cons (ly:make-pitch 0 6 FLAT) (x11-color 'blue))))

%Compare pitch and alteration (not octave).
#(define (pitch-equals? p1 p2)
  (and
    (= (ly:pitch-alteration p1) (ly:pitch-alteration p2))
    (= (ly:pitch-notename p1) (ly:pitch-notename p2))))

#(define (pitch-to-color pitch)
  (let ((color (assoc pitch color-mapping pitch-equals?)))
    (if color
      (cdr color))))

#(define (color-notehead grob)
  (pitch-to-color
    (ly:event-property (event-cause grob) 'pitch)))

\score {
  \new Staff \relative c' {
    \override NoteHead.color = #color-notehead
    c8 b d dis ees f g aes
  }
}
```



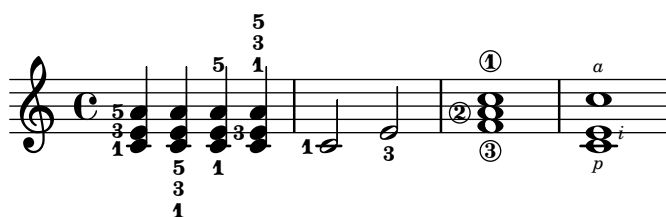
## Position von Fingersatz in Akkorden kontrollieren

Die Position von Fingersatzzahlen kann exakt kontrolliert werden.

```

\relative c' {
  \set fingeringOrientations = #'(left)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(down)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(down right up)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(up)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(left)
  <c-1>2
  \set fingeringOrientations = #'(down)
  <e-3>2
  \set stringNumberOrientations = #'(up left down)
  <f\3 a\2 c\1>1
  \set strokeFingerOrientations = #'(down right up)
  <c\rightHandFinger 1 e\rightHandFinger 2 c'\rightHandFinger 4 >
}

```



## Einen Doppelschlag mit Vorhalt erstellen

Einen Doppelschlag mit Vorhalt zu erstellen, wobei die untere Note das Vorzeichen benutzt, erfordert einige Einstellungsänderungen. Die `outside-staff-priority`-Eigenschaft muss auf falsch (`#f`) gesetzt werden, weil sie sonst über die Eigenschaft `avoid-slur` property dominieren würde. Der Wert von `halign` wird benutzt, um den Doppelschlag horizontal zu positionieren.

```

\relative c' {
  \after 2*2/3 \turn c2( d4) r |
  \after 4 \turn c4.( d8)
  \after 4
  {
    \once \set suggestAccidentals = ##t
    \once \override AccidentalSuggestion.outside-staff-priority = ##f
    \once \override AccidentalSuggestion.avoid-slur = #'inside
    \once \override AccidentalSuggestion.font-size = -3
    \once \override AccidentalSuggestion.script-priority = -1
    \once \hideNotes
    cis8\turn \noBeam
  }
  d4.( e8)
}

```





## Creating blank staves

To create blank staves, generate empty measures then remove the `Bar_number_engraver` from the `Score` context, and the `Time_signature_engraver`, `Clef_engraver` and `Bar_engraver` from the `Staff` context.

```

#(set-global-staff-size 20)

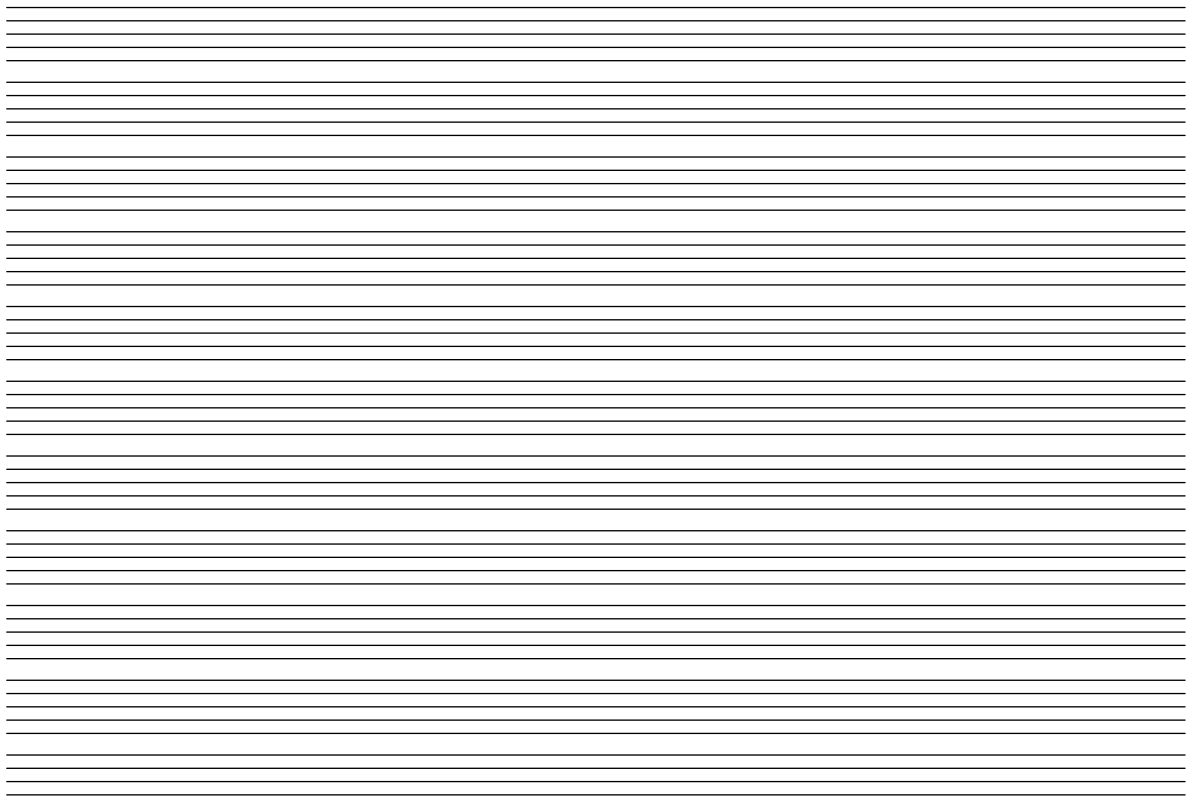
\score {
  {
    \repeat unfold 12 { s1 \break }
  }
  \layout {
    indent = 0\in
    \context {
      \Staff
      \remove "Time_signature_engraver"
      \remove "Clef_engraver"
      \remove "Bar_engraver"
    }
    \context {
      \Score
      \remove "Bar_number_engraver"
    }
  }
}

% uncomment these lines for "letter" size
%{
\paper {
  #(set-paper-size "letter")
  ragged-last-bottom = ##f
  line-width = 7.5\in
  left-margin = 0.5\in
  bottom-margin = 0.25\in
  top-margin = 0.25\in
}
%}

% uncomment these lines for "A4" size
%{
\paper {
  #(set-paper-size "a4")
  ragged-last-bottom = ##f
  line-width = 180
  left-margin = 15
  bottom-margin = 10
  top-margin = 10
}
%}

```

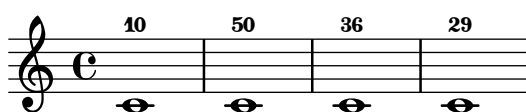




## Creating double-digit fingerings

Creating fingerings larger than 5 is possible.

```
\relative c' {
  c1-10
  c1-50
  c1-36
  c1-29
}
```



## Standardrichtung für Hälse auf der Mittellinie

Die Richtung von Hälse auf der mittleren Linie kann mit der Stem-Eigenschaft `neutral-direction` gesetzt werden.

```
\relative c' {
  a4 b c b
  \override Stem.neutral-direction = #up
  a4 b c b
  \override Stem.neutral-direction = #down
  a4 b c b
}
```



## Different font size settings for `instrumentName` and `shortInstrumentName`

Choose different font sizes for `instrumentName` and `shortInstrumentName` as a context override.

```

InstrumentNameFontSize =
#(define-music-function (font-size-pair) (pair?)
  "Sets the @code{font-size} of @code{InstrumentName}.
  The font-size for the initial @code{instrumentName} is taken from the first
  value in @var{font-size-pair}. @code{shortInstrumentName} will get the second
  value of @var{font-size-pair}."
  )

;; This code could be changed/extended to set different values for each
;; occurance of `shortInstrumentName'

#{
  \override InstrumentName.after-line-breaking =
    #(lambda (grob)
      (let* ((orig (ly:grob-original grob))
             (siblings (if (ly:grob? orig)
                           (ly:spanner-broken-into orig)
                           '()))))
        (if (pair? siblings)
            (begin
              (ly:grob-set-property!
               (car siblings)
               'font-size
               (car font-size-pair))
              (for-each
               (lambda (g)
                 (ly:grob-set-property! g 'font-size (cdr font-size-pair)))
               (cdr siblings))))))
    #)})

\paper { tagline = ##f }

\layout {
  \context {
    \Staff
    \InstrumentNameFontSize #'(6 . -3)
  }
}

\new StaffGroup <<
  \new Staff
    \with {
      instrumentName = "Flute"
      shortInstrumentName = "Fl."
    }
    { c''1 \break c'' \break c'' }
  \new Staff
    \with {
      instrumentName = "Violin"

```

```

    shortInstrumentName = "Vl."
  }
  { c''1 \break c'' \break c'' }
>>

```

The image shows three musical staves. The first staff is labeled 'Flute' and 'Violin' on the left. It contains two staves, each with a treble clef and a common time signature 'C'. The first staff has a single note 'c' on the first line. The second staff has a single note 'c' on the first line. The second staff is labeled 'Fl.' and 'Vl.' on the left. It contains two staves, each with a treble clef and a common time signature 'C'. The first staff has a single note 'c' on the first line. The third staff is labeled 'Fl.' and 'Vl.' on the left. It contains two staves, each with a treble clef and a common time signature 'C'. The first staff has a single note 'c' on the first line.

## Drawing boxes around grobs

The print-function can be overridden to draw a box around an arbitrary grob.

```

\relative c'' {
  \override TextScript.stencil =
    #(make-stencil-boxer 0.1 0.3 ly:text-interface::print)
  c'4^"foo"

  \override Stem.stencil =
    #(make-stencil-boxer 0.05 0.25 ly:stem::print)
  \override Score.RehearsalMark.stencil =
    #(make-stencil-boxer 0.15 0.3 ly:text-interface::print)
  b8

  \revert Stem.stencil
  \revert Flag.stencil
  c4. c4
  \mark \default
  c1
}

```

The image shows a musical staff with a treble clef and a common time signature 'C'. It contains a sequence of notes: a quarter note 'f', an eighth note 'f', a quarter note 'f', a quarter note 'f', and a half note 'f'. Above the first note is a box containing the text 'foo'. Above the fifth note is a box containing the text 'A'.

## Drawing circles around note heads

Here is how to circle a note.

```
circle =
\once \override NoteHead.stencil = #(lambda (grob)
  (let* ((note (ly:note-head::print grob))
        (combo-stencil (ly:stencil-add
                          note
                          (circle-stencil note 0.1 0.8))))
    (ly:make-stencil (ly:stencil-expr combo-stencil)
                     (ly:stencil-extent note X)
                     (ly:stencil-extent note Y))))

{ \circle c' ' }
```

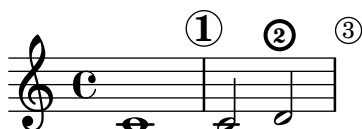


## Drawing circles around various objects

The `\circle` markup command draws circles around various objects, for example fingering indications. For other objects, specific tweaks may be required: this example demonstrates two strategies for rehearsal marks and measure numbers.

```
\relative c' {
  c1
  \set Score.rehearsalMarkFormatter =
    #(lambda (mark context)
      (make-circle-markup (format-mark-numbers mark context)))
  \mark \default

  c2 d^\markup {
    \override #'(thickness . 3) {
      \circle \finger 2
    }
  }
  \override Score.BarNumber.break-visibility = #all-visible
  \override Score.BarNumber.stencil =
    #(make-stencil-circler 0.1 0.25 ly:text-interface::print)
}
```



## Embedding native PostScript in a `\markup` block

PostScript code can be directly inserted inside a `\markup` block.

*% PostScript is a registered trademark of Adobe Systems Inc.*

```
\relative c' ' {
  a4-\markup { \postscript "3 4 moveto 5 3 rlineto stroke" }
  -\markup { \postscript "[ 0 1 ] 0 setdash 3 5 moveto 5 -3 rlineto stroke " }
```

```

b4-\markup { \postscript "3 4 moveto 0 0 1 2 8 4 20 3.5 rcurveto stroke" }
s2
a'1
}

```



## Gitternetzlinien: Aussehen verändern

Die Erscheinung der Gitternetzlinien kann durch einige Eigenschaften geändert werden.

```

\score {
  \new ChoirStaff <<
    \new Staff {
      \relative c'' {
        \stemUp
        c'4. d8 e8 f g4
      }
    }
    \new Staff {
      \relative c {
        % this moves them up one staff space from the default position
        \override Score.GridLine.extra-offset = #'(0.0 . 1.0)
        \stemDown
        \clef bass
        \once \override Score.GridLine.thickness = 5.0
        c4
        \once \override Score.GridLine.thickness = 1.0
        g'4
        \once \override Score.GridLine.thickness = 3.0
        f4
        \once \override Score.GridLine.thickness = 5.0
        e4
      }
    }
  }
}
>>
\layout {
  \context {
    \Staff
    % set up grids
    \consists "Grid_point_engraver"
    % set the grid interval to one quarter note
    gridInterval = \musicLength 4
  }
  \context {
    \Score
    \consists "Grid_line_span_engraver"
    % this moves them to the right half a staff space
    \override NoteColumn.X-offset = -0.5
  }
}

```

```
}
}
```



## Grid lines: emphasizing rhythms and notes synchronization

Regular vertical lines can be drawn between staves to show note synchronization; however, in case of monophonic music, you may want to make the second staff invisible, and make the lines shorter like in this snippet.

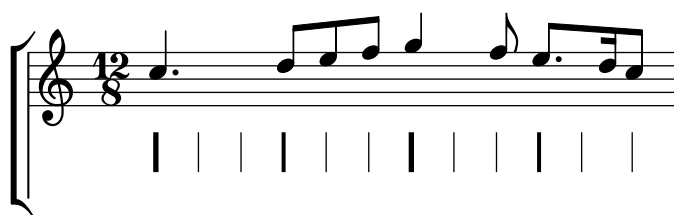
```
\score {
  \new ChoirStaff {
    \relative c'' <<
    \new Staff {
      \time 12/8
      \stemUp
      c4. d8 e8 f g4 f8 e8. d16 c8
    }
    \new Staff {
      % hides staff and notes so that only the grid lines are visible
      \hideNotes
      \hide Staff.BarLine
      \override Staff.StaffSymbol.line-count = #0
      \hide Staff.TimeSignature
      \hide Staff.Clef

      % dummy notes to force regular note spacing
      \once \override Score.GridLine.thickness = #4.0
      c8 c c
      \once \override Score.GridLine.thickness = #3.0
      c8 c c
      \once \override Score.GridLine.thickness = #4.0
      c8 c c
      \once \override Score.GridLine.thickness = #3.0
      c8 c c
    }
  }
  >>
}
\layout {
  \context {
    \Score
    \consists "Grid_line_span_engraver"
    % center grid lines horizontally below note heads
    \override NoteColumn.X-offset = #-0.5
  }
}
```

```

\context {
  \Staff
  \consists "Grid_point_engraver"
  gridInterval = \musicLength 8
  % set line length and positioning:
  % two staff spaces above center line on hidden staff
  % to four spaces below center line on visible staff
  \override GridPoint.Y-extent = #'(2 . -4)
}
ragged-right = ##t
}

```



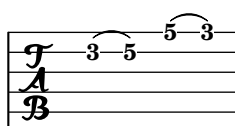
## Hammer on and pull off

Hammer-on and pull-off can be obtained using slurs.

```

\new TabStaff {
  \relative c' {
    d4( e\2)
    a( g)
  }
}

```



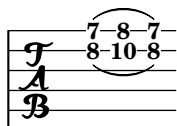
## Hammer on and pull off using chords

When using hammer-on or pull-off with chorded notes, only a single arc is drawn. However „double arcs“ are possible by setting the doubleSlurs property to #t.

```

\new TabStaff {
  \relative c' {
    % chord hammer-on and pull-off
    \set doubleSlurs = ##t
    <g' b>8( <a c> <g b>)
  }
}

```

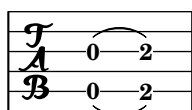




## Hammer on and pull off using voices

The arc of hammer-on and pull-off is upwards in voices one and three and downwards in voices two and four:

```
\new TabStaff {
  \relative c' {
    << { \voiceOne g2( a) }
    \\ { \voiceTwo a,( b) }
    >> \oneVoice
  }
}
```



## Eine Linie des Notensystems dicker als die anderen machen

Für den pädagogischen Einsatz kann eine Linie des Notensystems dicker gezeichnet werden (z. B. die Mittellinie, oder um den Schlüssel hervorzuheben). Das ist möglich, indem man zusätzliche Linien sehr nahe an der Linie, die dicker erscheinen soll, einfügt. Dazu wird die `line-positions`-Eigenschaft herangezogen.

```
{
  \override Staff.StaffSymbol.line-positions =
    #'(-4 -2 -0.2 0 0.2 2 4)
  d'4 e' f' g'
}
```



## Marking notes of spoken parts with a cross on the stem (Sprechstimme)

This example shows how to put crosses on stems. Mark the beginning of a spoken section with the `\speakOn` keyword, and end it with the `\speakOff` keyword.

```
\speakOn = {
  \override Stem.stencil =
    #(lambda (grob)
      (let* ((x-parent (ly:grob-parent grob X))
             (is-rest? (ly:grob? (ly:grob-object x-parent 'rest))))
        (if is-rest?
            empty-stencil
            (ly:stencil-combine-at-edge
              (ly:stem::print grob)
              Y
              (- (ly:grob-property grob 'direction))
              (grob-interpret-markup grob
                (markup #:center-align #:fontsize -4
                  #:musicglyph "noteheads.s2cross"))
              -2.3))))
}
```

```
speakOff = {
  \revert Stem.stencil
  \revert Flag.stencil
}
```

```
\score {
  \new Staff {
    \relative c'' {
      a4 b a c
      \speakOn
      g4 f r g
      b4 r d e
      \speakOff
      c4 a g f
    }
  }
}
```



## Measure counter

This snippet provides a workaround for emitting measure counters using transparent percent repeats.

```
<<
  \context Voice = "foo" {
    \clef bass
    c4 r g r
    c4 r g r
    c4 r g r
    c4 r g r
  }
  \context Voice = "foo" {
    \set countPercentRepeats = ##t
    \hide PercentRepeat
    \override PercentRepeatCounter.staff-padding = #1
    \repeat percent 4 { s1 }
  }
>>
```



## Measure spanner

Measure spanners are an alternate way to print annotated brackets. As opposed to horizontal brackets, they extend between two bar lines rather than two notes. The text is displayed in the center of the bracket.

```
\paper { tagline = ##f }
```

```

\layout {
  \context {
    \Staff
    \consists Measure_spanner_engraver
  }
}

<<
\new Staff \relative c' {
  \key d \minor
  R1*2
  \tweak text "Answer"
  \startMeasureSpanner
  \tuplet 3/2 8 {
    a16[ b c] d[ c b] c[ d e] f[ e d]
  }
  e8 a gis g
  fis f e d~ d c b e
  \stopMeasureSpanner
}
\new Staff \relative c' {
  \key d \minor
  \tweak text "Subject"
  \tweak direction #DOWN
  \startMeasureSpanner
  \tuplet 3/2 8 {
    d16[ e f] g[ f e] f[ g a] bes[ a g]
  }
  a8 d cis c
  b bes a g~ g f e a
  \stopMeasureSpanner
  \tweak text "Counter-subject"
  \tweak direction #DOWN
  \startMeasureSpanner
  f8 e a r r16 b, c d e fis g e
  a gis a b c fis, b a gis e a4 g8
  \stopMeasureSpanner
}
>>

```

Subject

The image shows a musical score snippet with two staves. The top staff is labeled "Answer" and contains a melodic line with triplets and a sharp sign. The bottom staff is labeled "Counter-subject" and contains a counter-melodic line. Both staves are in G major and 4/4 time.

## Numbering groups of measures

This snippet demonstrates the use of the `Measure_counter_engraver` to number groups of successive measures. Any stretch of measures may be numbered, whether consisting of repetitions or not.

The engraver must be added to the appropriate context. Here, a `Staff` context is used; another possibility is a `Dynamics` context.

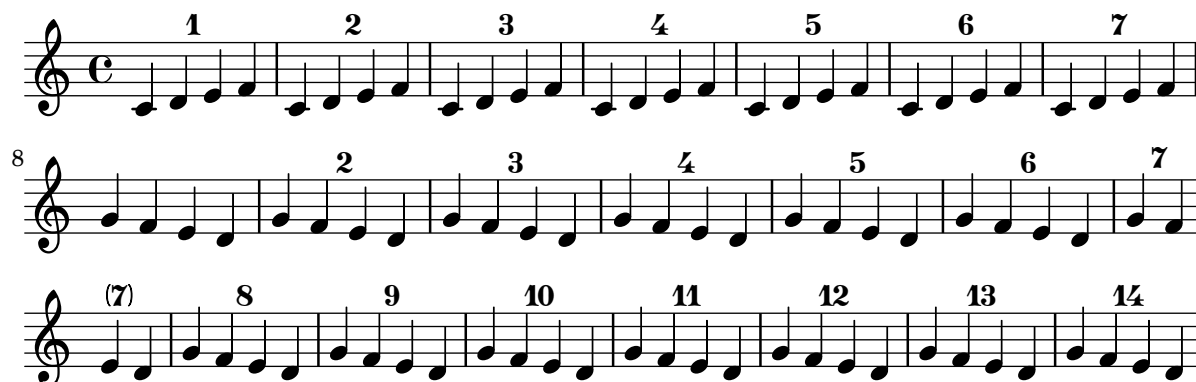
The counter is begun with `\startMeasureCount` and ended with `\stopMeasureCount`. Numbering will start by default with 1, but this behavior may be modified by overriding the `count-from` property.

When a measure extends across a line break, the number will appear twice, the second time in parentheses.

```
\layout {
  \context {
    \Staff
    \consists #Measure_counter_engraver
  }
}

\new Staff {
  \startMeasureCount
  \repeat unfold 7 {
    c'4 d' e' f'
  }
  \stopMeasureCount
  \bar "||"
  g'4 f' e' d'
  \override Staff.MeasureCounter.count-from = #2
  \startMeasureCount
  \repeat unfold 5 {
    g'4 f' e' d'
  }
  g'4 f'
  \bar ""
  \break
  e'4 d'
  \repeat unfold 7 {
    g'4 f' e' d'
  }
  \stopMeasureCount
}
```

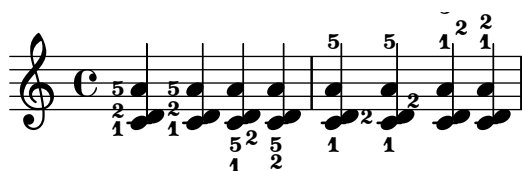
```
\paper { tagline = ##f }
```



## Positioning fingering indications precisely

Generally the options available for positioning the fingering of chords work well by default, but if one of the indications needs to be positioned more precisely the following tweak may be used. This is particularly useful for correcting the positioning when intervals of a second are involved.

```
\relative c' {
  \set fingeringOrientations = #'(left)
  <c-1 d-2 a'-5>4
  <c-1 d-\tweak extra-offset #'(0 . 0.2)-2 a'-5>4
  \set fingeringOrientations = #'(down)
  <c-1 d-2 a'-5>4
  <c-\tweak extra-offset #'(0 . -1.1)-1
    d-\tweak extra-offset #'(-1.2 . -1.8)-2 a'-5>4
  \set fingeringOrientations = #'(down right up)
  <c-1 d-\tweak extra-offset #'(-0.3 . 0)-2 a'-5>4
  <c-1 d-\tweak extra-offset #'(-1 . 1.2)-2 a'-5>4
  \set fingeringOrientations = #'(up)
  <c-1 d-\tweak extra-offset #'(0 . 1.1)-2
    a'-\tweak extra-offset #'(0 . 1)-5>4
  <c-1 d-\tweak extra-offset #'(-1.2 . 1.5)-2
    a'-\tweak extra-offset #'(0 . 1.4)-5>4
}
```



## Textbeschriftung innerhalb von Bögen positionieren

Textbeschriftung kann innerhalb von Bögen gesetzt werden, wenn die `outside-staff-priority`-Eigenschaft auf falsch gesetzt wird.

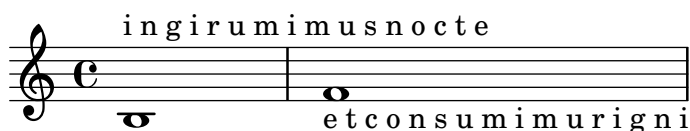
```
\relative c' {
  \override TextScript.avoid-slur = #'inside
  \override TextScript.outside-staff-priority = ##f
  c2(~\markup { \halign #-10 \natural } d4.) c8
}
```



## Printing text from right to left

It is possible to print text from right to left in a markup object, as demonstrated here.

```
{
  b1~\markup {
    \line { i n g i r u m i m u s n o c t e }
  }
  f'_\markup {
    \override #'(text-direction . -1)
    \line { i n g i r u m i m u s n o c t e }
  }
}
```

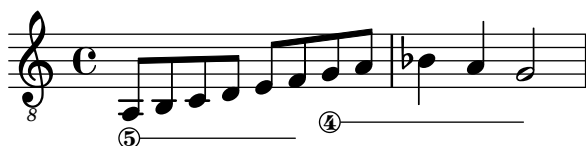


## String number extender lines

Make an extender line for string number indications, showing that a series of notes is supposed to be played all on the same string.

```
stringNumberSpanner =
  #(define-music-function (StringNumber) (string?)
    #{
      \override TextSpanner.style = #'solid
      \override TextSpanner.font-size = #-5
      \override TextSpanner.bound-details.left.stencil-align-dir-y = #CENTER
      \override TextSpanner.bound-details.left.text =
        \markup { \circle \number $StringNumber }
    #})
```

```
\relative c {
  \clef "treble_8"
  \stringNumberSpanner "5"
  \textSpannerDown
  a8\startTextSpan
  b c d e f\stopTextSpan
  \stringNumberSpanner "4"
  g\startTextSpan a
  bes4 a g2\stopTextSpan
}
```



## Using PostScript to generate special note head shapes

When a note head with a special shape cannot easily be generated with graphic markup, PostScript code can be used to generate the shape. This example shows how a parallelogram-shaped note head is generated.

```
%% Updaters remark:
%% For unknown reasons this snippet returns a gs-error, but only, if compiled
%% with multiple others like: lilypond *.ly
%% Thus changing to a path-stencil.
%% TODO description needs to get adjusted --harm
```

```
parallelogram =
  #(ly:make-stencil
    '(path 0.1
      (rmoveto 0 0.25
        lineto 1.3125 0.75
        lineto 1.3125 -0.25
        lineto 0 -0.75)
      round
      round
      #t)
    (cons 0 1.3125)
    (cons -.75 .75))

myNoteHeads = \override NoteHead.stencil = \parallelogram
normalNoteHeads = \revert NoteHead.stencil

\relative c' {
  \myNoteHeads
  g4 d'
  \normalNoteHeads
  <f, \tweak stencil \parallelogram b e>4 d
}
```



## Using the whiteout property

Any graphical object can be printed over a white background to mask parts of objects that lie beneath. This can be useful to improve the appearance of collisions in complex situations when repositioning objects is impractical. It is necessary to explicitly set the layer property to control which objects are masked by the white background.

In this example the collision of the tie with the time signature is improved by masking out the part of the tie that crosses the time signature, setting the whiteout property of TimeSignature. To do this, TimeSignature is moved to a layer above Tie, which is left in the default layer 1, and StaffSymbol is moved to a layer above TimeSignature so it is not masked.

```
{
  \override Score.StaffSymbol.layer = 4
  \override Staff.TimeSignature.layer = 3
  b'2 b'~
}
```

```
\once \override Staff.TimeSignature.whiteout = ##t  
\time 3/4  
b' r4  
}
```





## Text

Abschnitt “Text” in *Notationsreferenz*

### [OBSOLETE] Adding a QR code

This snippet lets you draw a QR-code, for example to provide a link to the composer’s, or the music editor’s website.

Actually encoding the URL into a QR-code is not done here (this just draws the QR-code from a grid of "black" or "white" values), but see the code for a short Python snippet you can use to avoid having to fill for each small square if it’s black or white.

*This snippet is obsolete starting from LilyPond 2.25.3, which adds a `\qr-code markup` command that takes a URL directly instead of a grid of "black" and "white" values. It is used like `\markup \qr-code #10 "https://lilypond.org"`.*

*%% Original thread: <https://lists.gnu.org/archive/html/lilypond-user-fr/2022-07/msg00005.html>*

*%% (snippet author: Jean Abou Samra <jean@abou-samra.fr>)*

```
\paper { tagline = ##f }

#(define (index-map f . lsts)
  "Applies @code{f} to corresponding elements of @code{lists}, just as @code{map},
  providing an additional counter starting at zero. @code{f} needs to have the
  counter in its arguments like @code{(index-map (lambda (i arg) <body>) lists)}"
  (let loop ((lsts lsts)
             (acc '())
             (i 0))
    (if (any null? lsts)
        (reverse! acc)
        (loop (map cdr lsts)
              (cons (apply f i (map car lsts))
                    acc)
              (1+ i)))))

#(define-markup-command (qr-code layout props data) (string?)
  #:properties ((width 10))
  (let* (; Return lines in reversed order, since translating in Y-axis
        ;; uses increasing values. Meaning lines will be stacked upwards.
        (lines (reverse
                  (remove
                    string-null?
                    (map string-trim-both (string-split data #\newline))))))
    (n (length lines))
    (square-width (/ width n))
    (box (make-filled-box-stencil `(0 . ,square-width)
                                   `(0 . ,square-width))))

  ;; Build the final qr-code-stencil from line-stencils list
  (apply ly:stencil-add
    ;; Get a list of line-stencils
    (index-map
      (lambda (i line)
```

```

;; Build a line-stencil from square-stencils list
(apply ly:stencil-add
  ;; Get a list of (already translated) square-stencils
  ;; per line
  (index-map
    (lambda (j char)
      (ly:stencil-translate
        (stencil-with-color
          box
          (case char
            ((#\0)
             white)
            ((#\1)
             black)
            (else
             (ly:warning
              "unrecognized character ~a, should be 0 or 1"
              char)
             red))))
      (cons (* j square-width)
            (* i square-width))))
    (string->list line))))
lines))))

```

```
%{
```

A string representation of the QR code. 0 means white, 1 means black.  
 You can generate this automatically using Python and the pyqrcode module  
 ("pip install pyqrcode"). Use this line of code in a Python prompt:

```
>>> import pyqrcode; print(pyqrcode.create("https://lilypond.org").text(quiet_zone=0))
%}
```

```
lilypondDotOrg =
```

```

"11111110011100011110101111111
10000010010000010111101000001
10111010010110001000101011101
10111010001010111101001011101
10111010110100000111001011101
10000010011100011001101000001
11111110101010101010101111111
00000000111000111110100000000
00110011101100001000111010000
10101001111000001000001111101
00110111010100000110001011010
01010001100110010111000110001
01111011110010011110010100111
01111101001101010001001101101
01111011000001000011001111011
11001001001011001000111011010
11100110111011011001110111000
00001100010001001011100100100

```

```

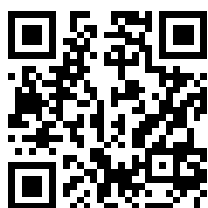
10111111011001010011001000100
00001100001000101011011011100
01010010000011000000111111111
00000000110011100010100011001
11111110101001101011101010110
10000010000110111110100010011
10111010011010111100111111111
10111010110001101111000011110
10111010100101101010100101001
10000010001001000100000010010
11111110010100110010111100010"

```

```
\markup \qr-code \lilypondDotOrg
```

```
\markup \vspace #5
```

```
\markup \override #'(width . 15) \qr-code \lilypondDotOrg
```



## Adding markups in a tablature

By default markups does not show in a tablature.

To make them appear, simply use the command `\revert TabStaff.TextScript.stencil`

```
%% http://lsr.di.unimi.it/LSR/Item?id=919
```

```
% by P.P.Schneider on June 2014
```

```
high = { r4 r8 <g c'> q r8 r4 }
```

```
low = { c4 r4 c8 r8 g,8 b, }
```

```
pulse = { s8^"1" s^"&" s^"2" s^"&" s^"3" s^"&" s^"4" s^"&" }
```

```

\score {
  \new TabStaff {
    \repeat unfold 2 << \high \\\ \low \\\ \pulse >>

```

```

}
\layout {
  \context {
    \TabStaff
    \clef moderntab
    \revert TextScript.stencil
    \override TextScript.font-series = #'bold
    \override TextScript.font-size = #-2
    \override TextScript.color = #red
  }
  \context {
    \Score
    proportionalNotationDuration = \musicLength 8
  }
}

```

	1	&	2	&	3	&	4	&	1	&	2	&	3	&	4	&
<b>T</b>					1-1						1-1					
<b>A</b>					0-0						0-0					
<b>B</b>	3				3			2	3				3			2
						3								3		

## Adding the current date to a score

With a little Scheme code, the current date can easily be added to a score.

```
\paper { tagline = ##f }
```

```
% first, define a variable to hold the formatted date:
date = #(strftime "%d-%m-%Y" (localtime (current-time)))
```

```
% use it in the title block:
```

```
\header {
  title = "Including the date!"
  subtitle = \date
}
```

```
\score {
  \relative c'' {
    c4 c c c
  }
}
```

```
% and use it in a \markup block:
```

```
\markup {
  \date
}
```

## Including the date!

07-01-2024



07-01-2024

## Adjusting lyrics vertical spacing

This snippet shows how to bring the lyrics line closer to the staff.

*% Default layout:*

```
<<
\new Staff \new Voice = melody \relative c' {
  c4 d e f
  g4 f e d
  c1
}
\new Lyrics \lyricsto melody { aa aa aa aa aa aa aa aa aa }

\new Staff {
  \new Voice = melody \relative c' {
    c4 d e f
    g4 f e d
    c1
  }
}
% Reducing the minimum space below the staff and above the lyrics:
\new Lyrics \with {
  \override VerticalAxisGroup.nonstaff-relatedstaff-spacing =
    #'((basic-distance . 1))
}
\lyricsto melody { aa aa aa aa aa aa aa aa aa }
>>
```



## Aligning and centering instrument names

The horizontal alignment of instrument names is tweaked by changing the `Staff.InstrumentName.self-alignment-X` property. The `\layout` variables `indent` and `short-indent` define the space in which the instrument names are aligned before the first and the following systems, respectively.

```
\paper { left-margin = 3\cm }

\score {
  \new StaffGroup <<

    \new Staff \with {
      \override InstrumentName.self-alignment-X = #LEFT
      instrumentName = \markup \left-column {
        "Left aligned"
        "instrument name"
      }
    }
  >>
}
```

```

    }
    shortInstrumentName = "Left"
  }

  { c''1 \break c''1 }

\new Staff \with {
  \override InstrumentName.self-alignment-X = #CENTER
  instrumentName = \markup \center-column {
    Centered
    "instrument name"
  }
  shortInstrumentName = "Centered"
}

{ g'1 g'1}

\new Staff \with {
  \override InstrumentName.self-alignment-X = #RIGHT
  instrumentName = \markup \right-column {
    "Right aligned"
    "instrument name"
  }
  shortInstrumentName = "Right"
}

{ e'1 e'1 }

>>


\layout {
  ragged-right = ##t
  indent = 4\cm
  short-indent = 2\cm
}

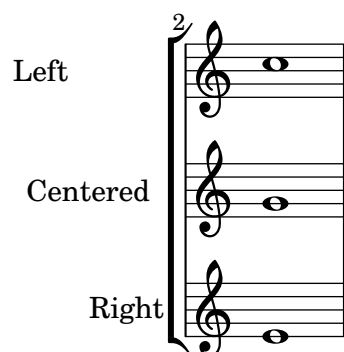
```

Left aligned  
instrument name

Centered  
instrument name

Right aligned  
instrument name





## Aligning syllables with melisma

By default, lyrics syllables that start a melisma are left aligned on their note. The alignment can be altered using the `lyricMelismaAlignment` property.

```
\score {
  <<
    \new Staff {
      \relative c''
      \new Voice = "vocal" {
        c d~\markup default d e
        c d~\markup "right aligned" d e
        c d~\markup "center aligned" d e
        c d~\markup "reset to default" d e
      }
    }
    \new Lyrics \lyricsto "vocal" {
      word word word
      \set lyricMelismaAlignment = #RIGHT
      word word word
      \set lyricMelismaAlignment = #CENTER
      word word word
      \unset lyricMelismaAlignment
      word word word
    }
  >>
}
```



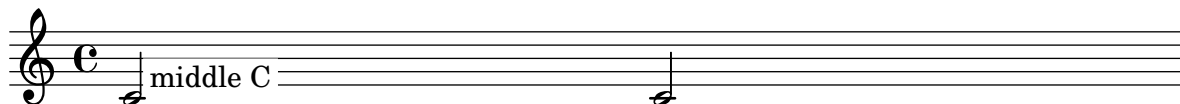
## Blanking staff lines using the `\whiteout` command

The `\whiteout` command underlays a markup with a white box. Since staff lines are in a lower layer than most other grobs, this white box will not overlap any other grob.

```
\layout {
  ragged-right = ##f
}
```

```
\relative c' {
  \override TextScript.extra-offset = #'(2 . 4)
```

```
c2-\markup { \whiteout \pad-markup #0.5 "middle C" } c
}
```



## Center text below hairpin dynamics

This example provides a function to typeset a hairpin (de)crescendo with some additional text below it, such as „molto“ or „poco“. The added text will change the direction according to the direction of the hairpin. The Hairpin is aligned to DynamicText.

The example also illustrates how to modify the way an object is normally printed, using some Scheme code.

```
\paper { tagline = ##f }

hairpinWithCenteredText =
#(define-music-function (text) (markup?)
  #{
    \once \override Voice.Hairpin.after-line-breaking =
      #(lambda (grob)
        (let* ((stencil (ly:hairpin::print grob))
              (par-y (ly:grob-parent grob Y))
              (dir (ly:grob-property par-y 'direction))
              (staff-line-thickness
                (ly:output-def-lookup (ly:grob-layout grob) 'line-thickness))
              (new-stencil (ly:stencil-aligned-to
                            (ly:stencil-combine-at-edge
                              (ly:stencil-aligned-to stencil X CENTER)
                              Y dir
                              (ly:stencil-aligned-to
                                (grob-interpret-markup
                                  grob
                                  (make-fontsize-markup
                                    (magnification->font-size
                                      (+ (ly:staff-symbol-staff-space grob)
                                        (/ staff-line-thickness 2)))
                                    text)) X CENTER))
                              X LEFT))
              (staff-space (ly:output-def-lookup
                            (ly:grob-layout grob) 'staff-space))
              (par-x (ly:grob-parent grob X))
              (dyn-text (grob::has-interface par-x 'dynamic-text-interface))
              (dyn-text-stencil-x-length
                (if dyn-text
                  (interval-length
                    (ly:stencil-extent (ly:grob-property par-x 'stencil) X))
                  0))
              (x-shift
                (if dyn-text
                  (-
```



```

      (+ staff-space dyn-text-stencil-x-length)
      (* 0.5 staff-line-thickness)) 0)))

(ly:grob-set-property! grob 'Y-offset 0)
(ly:grob-set-property! grob 'stencil
  (ly:stencil-translate-axis
    new-stencil
    x-shift X))))
#})

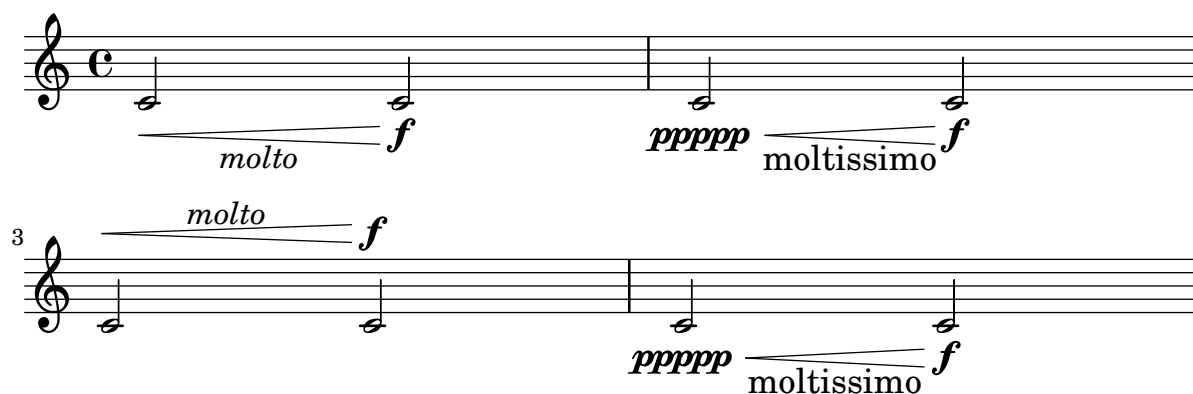
hairpinMolto =
\hairpinWithCenteredText \markup { \italic molto }

hairpinMore =
\hairpinWithCenteredText \markup { \larger moltissimo }

\layout { ragged-right = ##f }

\relative c' {
  \hairpinMolto
  c2\< c\f
  \hairpinMore
  c2\ppppp\< c\f
  \break
  \hairpinMolto
  c2^\< c\f
  \hairpinMore
  c2\ppppp\< c\f
}

```



## Changing ottava text

Internally, `\ottava` sets the properties `ottavation` (for example, to 8va or 8vb) and `middleCPosition`. To override the text of the bracket, set `ottavation` after invoking `\ottava`.

Short text is especially useful when a brief `ottava` is used.

```

{
  c'2
  \ottava 1
  \set Staff.ottavation = "8"
  c''2
}

```

```

\ottava 0
c'1
\ottava 1
\set Staff.ottavation = "Text"
c''1
}

```



## Changing the default text font family

The default font families for text can be overridden.

```
%{
```

*You may have to install additional fonts.*

*Red Hat Fedora*

```
dejavu-fonts-all
```

*Debian GNU/Linux, Ubuntu*

```
fonts-dejavu-core
```

```
fonts-dejavu-extra
```

```
%}
```

```

\paper {
  %{
    run
      lilypond -dshow-available-fonts
      to show all fonts available in the process log.
  %}
  property-defaults.fonts.serif = "DejaVu Serif"
  property-defaults.fonts.sans = "DejaVu Sans"
  property-defaults.fonts.typewriter = "DejaVu Sans Mono"
}

```

```

{
  g'''4~\markup {
    DejaVu Serif: \bold bold
                  \italic italic
                  \italic \bold { bold italic }
  }
  g4_~\markup {
    \override #'(font-family . sans) {
      DejaVu Sans: \bold bold
                  \italic italic
                  \italic \bold { bold italic }
    }
  }
  g''2~\markup {

```

```

\override #'(font-family . typewriter) {
  DeJaVu Sans Mono: \bold bold
                    \italic italic
                    \italic \bold { bold italic }
}
}
}

```



## Combining dynamics with markup texts

Some dynamics may involve text indications (such as „più forte“ or „piano subito“). These can be produced using a `\markup` block.

```

piuF = \markup { \italic più \dynamic f }

```

```

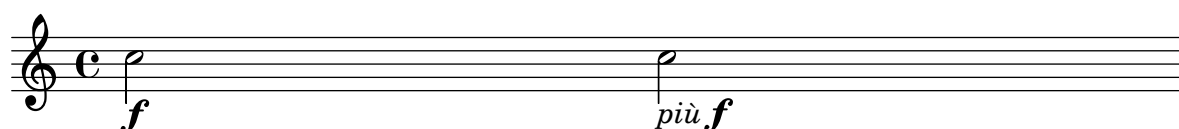
\layout { ragged-right = ##f }

```

```

\relative c'' {
  c2\f c-\piuF
}

```



## Zwei Stimmen auf einem System kombinieren

Die Funktion, die Stimmen kombiniert (also der `\partCombine`-Befehl) ermöglicht die Kombination unterschiedlicher Stimmen auf einem System. Textanweisungen wie "solo" oder "a2" werden automatisch hinzugefügt. Wenn man sie entfernen will, muss man die Eigenschaft `printPartCombineTexts` auf falsch setzen. Für Klavierauszüge muss natürlich kein "solo"/"a2" usw. hinzugefügt werden, man sollte sie also ausschalten. Wenn aber Solo-Stellen in einem Klavierauszug oder einer Chorpartitur angezeigt werden, ist es besser, normale Polyphonie zu verwenden, weil so die Solostellen angezeigt werden, auch wenn der Text des Stimmenkombinierers ausgeschaltet ist.

Der Schnipsel zeigt drei Möglichkeiten, Stimmen auf einem System zu kombinieren: Standardpolyphonie, `\partCombine` ohne Text und `\partCombine` mit Text.

```

musicUp = \relative c'' {
  \time 4/4
  a4 c4.( g8) a4 |
  g4 e' g,( a8 b) |
  c b a2.
}

```

```

musicDown = \relative c'' {
  g4 e4.( d8) c4 |
}

```

```

r2 g'4( f8 e) |
d2 \stemDown a
}

\score {
  <<
    \new Staff \with {
      instrumentName = "standard polyphony"
    } << \musicUp \\\musicDown >>

    \new Staff \with {
      instrumentName =
        \markup { \typewriter "\\partCombine" without text}
      printPartCombineTexts = ##f
    } \partCombine \musicUp \musicDown

    \new Staff \with {
      instrumentName =
        \markup { \typewriter "\\partCombine" with text}
    } \partCombine \musicUp \musicDown
  >>

  \layout {
    indent = 6.0\cm
    \context {
      \Score
      % Setting this to a large value avoids a bar line at the
      % beginning that would connect the three staves otherwise.
      \override SystemStartBar.collapse-height = 30
    }
  }
}

```

standard polyphony	
\partCombine without text	
\partCombine with text	

## Creating "real" parenthesized dynamics

Although the easiest way to add parentheses to a dynamic mark is to use a `\markup` block, this method has a downside: the created objects will behave like text markups, and not like dynamics.

However, it is possible to create a similar object using the equivalent Scheme code (as described in the Notation Reference), combined with the `make-dynamic-script` function. This way,

the markup will be regarded as a dynamic, and therefore will remain compatible with commands such as `\dynamicUp` or `\dynamicDown`.

```
paren =
#(define-event-function (dyn) (ly:event?)
  (make-dynamic-script
    #{ \markup \concat {
      \normal-text \italic \fontsize #2 (
\pad-x #0.2 #(ly:music-property dyn 'text)
\normal-text \italic \fontsize #2 )
    }
    #})))
```

```
\relative c' ' {
  c4\paren\f c c \dynamicUp c\paren\p
}
```



## Creating text spanners

The `\startTextSpan` and `\stopTextSpan` commands allow the creation of text spanners as easily as pedal indications or octavations. Override some properties of the `TextSpanner` object to modify its output.

```
\paper { ragged-right = ##f }
```

```
\relative c' ' {
  \override TextSpanner.bound-details.left.text = #"bla"
  \override TextSpanner.bound-details.right.text = #"blu"
  a4 \startTextSpan
  b4 c
  a4 \stopTextSpan

  \override TextSpanner.style = #'line
  \once \override TextSpanner.bound-details.left.stencil-align-dir-y = #CENTER
  a4 \startTextSpan
  b4 c
  a4 \stopTextSpan

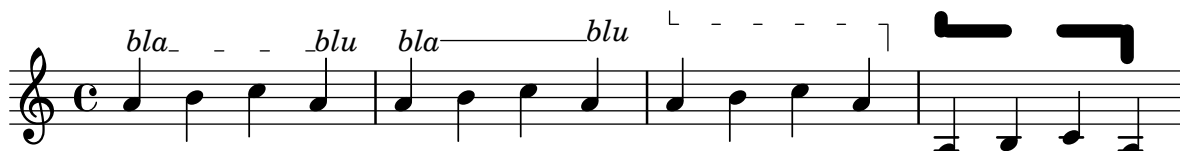
  \override TextSpanner.style = #'dashed-line
  \override TextSpanner.bound-details.left.text =
    \markup { \draw-line #'(0 . 1) }
  \override TextSpanner.bound-details.right.text =
    \markup { \draw-line #'(0 . -2) }
  \once \override TextSpanner.bound-details.right.padding = #-2

  a4 \startTextSpan
  b4 c
  a4 \stopTextSpan
```

```

\set Staff.middleCPosition = #-13
\override TextSpanner.dash-period = #10
\override TextSpanner.dash-fraction = #0.5
\override TextSpanner.thickness = #10
a4 \startTextSpan
b4 c
a4 \stopTextSpan
}

```



## Demonstrating all headers

All header fields with special meanings.

```

\header {
  copyright = "copyright"
  title = "title"
  subtitle = "subtitle"
  composer = "composer"
  arranger = "arranger"
  instrument = "instrument"
  meter = "meter"
  opus = "opus"
  piece = "piece"
  poet = "poet"
  texidoc = "All header fields with special meanings."
  copyright = "public domain"
  enteredby = "jcn"
  source = "urtext"
}

\layout {
  ragged-right = ##f
}

\score {
  \relative c'' { c1 | c | c | c }
}

\score {
  \relative c'' { c1 | c | c | c }
  \header {
    title = "localtitle"
    subtitle = "localsubtitle"
    composer = "localcomposer"
    arranger = "localarranger"
    instrument = "localinstrument"
    metre = "localmetre"
    opus = "localopus"
  }
}

```

```

    piece = "localpiece"
    poet = "localpoet"
    copyright = "localcopyright"
  }
}

```

## title

### subtitle

poet

instrument

composer

meter

arranger

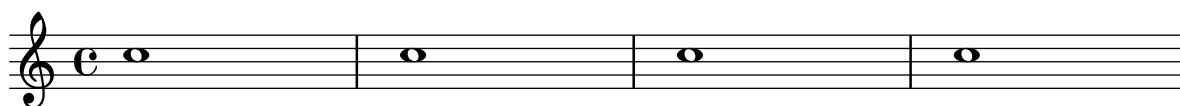
piece

opus



localpiece

localopus



## Embedding native PostScript in a \markup block

PostScript code can be directly inserted inside a \markup block.

*% PostScript is a registered trademark of Adobe Systems Inc.*

```

\relative c'' {
  a4-\markup { \postscript "3 4 moveto 5 3 rlineto stroke" }
  -\markup { \postscript "[ 0 1 ] 0 setdash 3 5 moveto 5 -3 rlineto stroke " }

  b4-\markup { \postscript "3 4 moveto 0 0 1 2 8 4 20 3.5 rcurveto stroke" }
  s2
  a'1
}

```



## Silben im Gesangstext formatieren

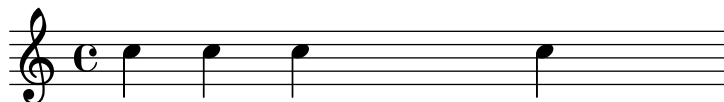
Textbeschriftungsmodus kann eingesetzt werden, um individuelle Silben im Gesangstext zu formatieren.

```

mel = \relative c'' { c4 c c c }
lyr = \lyricmode {
  Lyrics \markup { \italic can } \markup { \with-color #red contain }
  \markup { \fontsize #8 \bold Markup! }
}

```

```
\new Voice = melody \mel
\new Lyrics \lyricsto melody \lyr
>>
```



Lyrics *can* **contain** **Markup!**

## How to put ties between syllables in lyrics

This can be achieved by separating those syllables by tildes.

```
\lyrics {
  wa~o~a
}
```

wa o a

## Ausrichtung von Gesangstext

Die horizontale Ausrichtung von Gesangstext kann eingestellt werden, indem man die self-alignment-X-Eigenschaft des LyricText-Objekts verändert. #-1 bedeutet links, #0 bedeutet mittig und #1 bedeutet rechts, man kann aber genauso gut auch #LEFT, #CENTER und #RIGHT benutzen.

```
\layout { ragged-right = ##f }

\relative c' {
  c1
  c1
  c1
}

\addlyrics {
  \once \override LyricText.self-alignment-X = #LEFT
  "This is left-aligned"
  \once \override LyricText.self-alignment-X = #CENTER
  "This is centered"
  \once \override LyricText.self-alignment-X = 1
  "This is right-aligned"
}
```



This is left-aligned This is centered This is right-aligned

## Markup list

Text that can spread over pages is entered with the \markuplist command.

%% updated/modified by P.P.Schneider on Feb. 2014

```
\paper { tagline = ##f }
```



```

#(set-default-paper-size "a6")

#(define-markup-list-command (paragraph layout props args) (markup-list?)
  (interpret-markup-list layout props
    (make-justified-lines-markup-list (cons (make-hspace-markup 2) args))))

% Candide, Voltaire
\markuplist {
  \override-lines #'(baseline-skip . 2.5) {
    \paragraph {
      Il y avait en Westphalie, dans le château de M. le baron de
      Thunder-ten-tronckh, un jeune garçon à qui la nature avait donné
      les mœurs les plus douces. Sa physionomie annonçait son âme.
      Il avait le jugement assez droit, avec l'esprit le plus
      \concat { simple \hspace #.3 ; }
      c'est, je crois, pour cette raison qu'on le nommait Candide. Les
      anciens domestiques de la maison soupçonnaient qu'il était fils
      de la sœur de monsieur le baron et d'un bon et honnête
      gentilhomme du voisinage, que cette demoiselle ne voulut jamais
      épouser parce qu'il n'avait pu prouver que soixante et onze
      quartiers, et que le reste de son arbre généalogique avait été
      perdu par l'injure du temps.
    }
    \vspace #.3
    \paragraph {
      Monsieur le baron était un des plus puissants seigneurs de la
      Westphalie, car son château avait une porte et des fenêtres. Sa
      grande salle même était ornée d'une tapisserie. Tous les chiens
      de ses basses-cours composaient une meute dans le
      \concat { besoin \hspace #.3 ; }
      ses palefreniers étaient ses
      \concat { piqueurs \hspace #.3 ; }
      le vicaire du village était
      son grand-aumônier. Ils l'appelaient tous monseigneur, et ils
      riaient quand il faisait des contes.
    }
  }
}

```

Il y avait en Westphalie, dans le château de M. le baron de Thunder-ten-tronckh, un jeune garçon à qui la nature avait donné les mœurs les plus douces. Sa physionomie annonçait son âme. Il avait le jugement assez droit, avec l'esprit le plus simple ; c'est, je crois, pour cette raison qu'on le nommait Candide. Les anciens domestiques de la maison

soupçonnaient qu'il était fils de la sœur de monsieur le baron et d'un bon et honnête gentilhomme du voisinage, que cette demoiselle ne voulut jamais épouser parce qu'il n'avait pu prouver que soixante et onze quartiers, et que le reste de son arbre généalogique avait été perdu par l'injure du temps.

Monsieur le baron était un des plus puissants seigneurs de la Westphalie, car son château avait une porte et des fenêtres. Sa grande salle même était ornée d'une tapisserie. Tous les chiens de ses basses-cours composaient une meute dans le besoin; ses palefreniers étaient ses piqueurs; le vicaire du village était son grand-aumônier. Ils l'appelaient tous monseigneur, et ils riaient quand il faisait des contes.

## Textbeschriftung und Mehrtaktpausen

Textbeschriftungen, die an Mehrtaktpausen gehängt wird, wird über oder unter der Pause zentriert. Lange Beschriftungen lassen den Takt nicht breiter werden. Um eine Mehrtaktpause einer Beschriftung anzupassen, muss eine unsichtbare Pause mit der Beschriftung direkt vor der Mehrtaktpause eingesetzt werden.

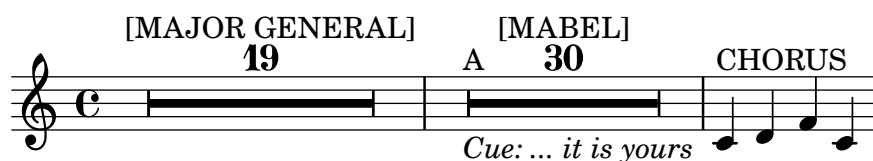
Man sollte beachten, dass unsichtbare Pausen automatische Taktstriche nach sich ziehen. Text, der an eine unsichtbare Pause gehängt wird, ist links ausgerichtet an der Position, wo die Pause erscheinen würde. Wenn aber die Länge des Taktes durch die Länge des Textes bestimmt wird, sieht es so aus, als ob der Text zentriert gesetzt ist.

```
\relative c' {
  \compressMMRests {
    \textLengthOn
    <>^\markup { [MAJOR GENERAL] }
    R1*19
    <>_\markup { \italic { Cue: ... it is yours } }
```

```

<>^\markup { A }
R1*30^\markup { [MABEL] }
\textLengthOff
c4^\markup { CHORUS } d f c
}
}

```



## Of the ubiquity of markup objects

Text objects are entered either as simple strings between double quotes or as `\markup` blocks that can accept a variety of advanced text formatting and graphical enhancements.

As such, markup blocks may be used:

- in any `TextScript` object (attached to notes with `-`, `^` or `_`),
- any `TextMark` introduced with the `\textMark` keyword, or `\textEndMark` command, or other similar objects such as `MetronomeMark` introduced with `\tempo`,
- as standalone markup blocks, entered at the top level outside of any `\score` block,
- in any definition inside the `\header` block (e.g. title, subtitle, composer) or in some variables defined inside the `\paper` block such as `evenHeaderMarkup` for page numbers.

`\markup` may additionally be used for lyrics, in chord names, and as dynamics. In fact, it is possible to use `\markup` to customize the appearance of virtually any object, as demonstrated in this example using various methods.

*%% Thanks to Aaron Hill [https://lists.gnu.org/archive/html/lilypond-user/2019-01/msg00437.h](https://lists.gnu.org/archive/html/lilypond-user/2019-01/msg00437.html)*

```

\paper {
  paper-width = 8\cm paper-height = 8\cm
}

\header {
  title = \markup "Header"
  tagline = \markup "(tagline)"
}

\markup "Top-level markup"

dyn = #(make-dynamic-script #{ \markup \serif "DynamicText" #})

\score {
  <<
    \new ChordNames
    \with { majorSevenSymbol = \markup "majorSevenSymbol" }
    \chordmode { c1:maj7 }
    \new Staff {
      \tempo \markup "MetronomeMark"
      \textMark "TextMark"
      \once \override TupletNumber.text = \markup "TupletNumber"
    }
  }
}

```

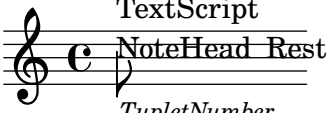
```

\tuplet 3/2 {
  \once \override NoteHead.stencil = #ly:text-interface::print
  \once \override NoteHead.text = \markup \lower #0.5 "NoteHead"
  c''8^\markup "TextScript"
  \once \override Rest.stencil = #(lambda (grob)
    (grob-interpret-markup grob #{
      \markup "Rest"
    #}))
  r4
}
}
\new Lyrics \lyricmode { \markup "LyricText" 1 }
\new Dynamics { s1\dyn }
>>
}

```

## Header

Top-level markup

**MetronomeMark**  
**TextMark**  
 C<sup>majorSevenSymbol</sup>  
 TextScript  
  
 TupletNumber  
 LyricText  
**DynamicText**

## Outputting the version number

It is possible to print the version number of LilyPond in markup.

```
\markup { Processed with LilyPond version #(lilypond-version) }
```

Processed with LilyPond version 2.25.12

## Piano template with centered lyrics

Anstatt ein eigenes System für Melodie und Text zu schreiben, können Sie den Text auch zwischen die beiden Klaviersysteme schreiben (und damit das zusätzliche System für die Gesangsstimme auslassen).

```

upper = \relative c'' {
  \clef treble
  \key c \major
  \time 4/4

  a4 b c d
}

```

```

lower = \relative c {
  \clef bass
  \key c \major
}

```

```

\time 4/4

a2 c
}

text = \lyricmode {
  Aaa Bee Cee Dee
}

\score {
  \new PianoStaff <<
    \new Staff = upper { \new Voice = "singer" \upper }
    \new Lyrics \lyricsto "singer" \text
    \new Staff = lower { \lower }
  >>
  \layout { }
  \midi { }
}

```



## Printing bar numbers with changing regular intervals

Using the `set-bar-number-visibility` context function, bar number intervals can be changed.

```

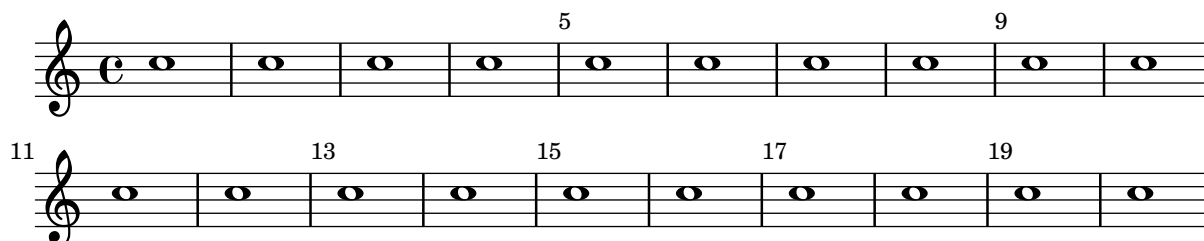
\relative c' {
  \override Score.BarNumber.break-visibility = #end-of-line-invisible
  \context Score \applyContext #(set-bar-number-visibility 4)
  \repeat unfold 10 c'1
  \context Score \applyContext #(set-bar-number-visibility 2)
  \repeat unfold 10 c
}

```

```

\paper { tagline = ##f }

```



## Zeichen über jedem System ausgeben

Normalerweise werden Textzeichen nur über dem obersten Notensystem gesetzt. Sie können aber auch über jedem System ausgegeben werden.

```

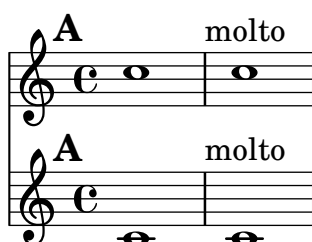
\score {
  <<

```

```

\new Staff { \mark \default c''1 \textMark "molto" c'' }
\new Staff { \mark \default c'1 \textMark "molto" c' }
>>
\layout {
  \context {
    \Score
    \remove Mark_engraver
    \remove Text_mark_engraver
    \remove Staff_collecting_engraver
  }
  \context {
    \Staff
    \consists Mark_engraver
    \consists Text_mark_engraver
    \consists Staff_collecting_engraver
  }
}

```



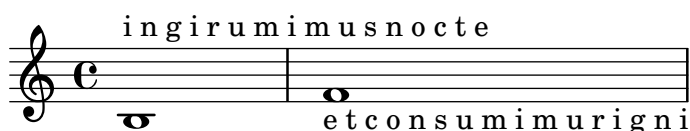
## Printing text from right to left

It is possible to print text from right to left in a markup object, as demonstrated here.

```

{
  b1^\markup {
    \line { i n g i r u m i m u s n o c t e }
  }
  f'_\markup {
    \override #'(text-direction . -1)
    \line { i n g i r u m i m u s n o c t e }
  }
}

```



## Putting lyrics inside the staff

Lyrics can be moved vertically to place them inside the staff. The lyrics are moved with `\override LyricText.extra-offset = #'(0 . dy)` and there are similar commands to move the extenders and hyphens. The offset needed is established with trial and error.

```

<<
\new Staff <<
  \new Voice = "voc" \relative c' { \stemDown a bes c8 b c4 }
>>

```

```
\new Lyrics \with {
  \override LyricText.extra-offset = #'(0 . 8.6)
  \override LyricExtender.extra-offset = #'(0 . 8.6)
  \override LyricHyphen.extra-offset = #'(0 . 8.6)
} \lyricsto "voc" { La la -- la __ _ la }
>>
```



## Isolierter Text in zwei Spalten

Isolierter Text kann in mehreren Spalten mit \markup-Befehlen angeordnet werden:

```
\markup {
  \fill-line {
    \hspace #1
    \column {
      \line { 0 sacrum convivium }
      \line { in quo Christus sumitur, }
      \line { recolitur memoria passionis ejus, }
      \line { mens impletur gratia, }
      \line { futurae gloriae nobis pignus datur. }
      \line { Amen. }
    }
  }
  \hspace #2
  \column italic {
    \line { 0 sacred feast }
    \line { in which Christ is received, }
    \line { the memory of His Passion is renewed, }
    \line { the mind is filled with grace, }
    \line { and a pledge of future glory is given to us. }
    \line { Amen. }
  }
  \hspace #1
}
```

O sacrum convivium  
in quo Christus sumitur,  
recolitur memoria passionis ejus,  
mens impletur gratia,  
futuræ gloriæ nobis pignus datur.  
Amen.

*O sacred feast  
in which Christ is received,  
the memory of His Passion is renewed,  
the mind is filled with grace,  
and a pledge of future glory is given to us.  
Amen.*

## String number extender lines

Make an extender line for string number indications, showing that a series of notes is supposed to be played all on the same string.

```
stringNumberSpanner =
```

```

#(define-music-function (StringNumber) (string?)
  #{
    \override TextSpanner.style = #'solid
    \override TextSpanner.font-size = #-5
    \override TextSpanner.bound-details.left.stencil-align-dir-y = #CENTER
    \override TextSpanner.bound-details.left.text =
      \markup { \circle \number $StringNumber }
  #})

\relative c {
  \clef "treble_8"
  \stringNumberSpanner "5"
  \textSpannerDown
  a8\startTextSpan
  b c d e f\stopTextSpan
  \stringNumberSpanner "4"
  g\startTextSpan a
  bes4 a g2\stopTextSpan
}

```



## Three-sided box

This example shows how to add a markup command to get a three sided box around some text (or other markup).

```

% New command to add a three sided box, with sides north, west and south
% Based on the box-stencil command defined in scm/stencil.scm
% Note that ";;" is used to comment a line in Scheme
#(define-public (NWS-box-stencil stencil thickness padding)
  "Add a box around STENCIL, producing a new stencil."
  (let* ((x-ext (interval-widen (ly:stencil-extent stencil X) padding))
        (y-ext (interval-widen (ly:stencil-extent stencil Y) padding))
        (y-rule (make-filled-box-stencil (cons 0 thickness) y-ext))
        (x-rule (make-filled-box-stencil
                  (interval-widen x-ext thickness) (cons 0 thickness))))
    ;; (set! stencil (ly:stencil-combine-at-edge stencil X 1 y-rule padding))
    (set! stencil (ly:stencil-combine-at-edge stencil X LEFT y-rule padding))
    (set! stencil (ly:stencil-combine-at-edge stencil Y UP x-rule 0.0))
    (set! stencil (ly:stencil-combine-at-edge stencil Y DOWN x-rule 0.0))
    stencil))

% The corresponding markup command, based on the \box command defined
% in scm/define-markup-commands.scm
#(define-markup-command (NWS-box layout props arg) (markup?)
  #:properties ((thickness 0.1) (font-size 0) (box-padding 0.2))
  "Draw a box round @var{arg}. Looks at @code{thickness},
@code{box-padding} and @code{font-size} properties to determine line

```



```
thickness and padding around the markup."
  (let ((pad (* (magstep font-size) box-padding))
        (m (interpret-markup layout props arg)))
    (NWS-box-stencil m thickness pad)))
```

```
% Test it:
```

```
\relative c' {
  c1^\markup { \NWS-box ABCD }
  c1^\markup { \NWS-box \note {4} #1.0 }
}
```



## UTF-8

Various scripts may be used for texts (like titles and lyrics) by entering them in UTF-8 encoding, and using a Pango based backend. Depending on the fonts installed, this fragment will render Bulgarian (Cyrillic), Hebrew, Japanese and Portuguese.

```
%{
You may have to install additional fonts.
```

```
Red Hat Fedora
```

```
linux-libertine-fonts (Latin, Cyrillic, Hebrew)
google-noto-serif-jp-fonts (Japanese)
```

```
Debian GNU/Linux, Ubuntu
```

```
fonts-linuxlibertine (Latin, Cyrillic, Hebrew)
fonts-noto-cjk (Japanese)
%}
```

```
% 'Linux Libertine' fonts also contain Cyrillic and Hebrew glyphs.
```

```
\paper {
  property-defaults.fonts.serif =
    "Linux Libertine O, Noto Serif CJK JP, Noto Serif JP"
}
```

```
bulgarian = \lyricmode {
  Жълтата дюля беше щастлива, че пухът, който цъфна, замръзна като гьон.
}
```

```
hebrew = \lyricmode {
  .
}
```

```
japanese = \lyricmode {
```

}

% "a nice song for you"

**portuguese** = \lyricmode {

à vo -- cê uma can -- çao le -- gal

}

\relative c' {

c2 d

e2 f

g2 f

e2 d

}

\addlyrics { \bulgarian }

\addlyrics { \hebrew }

\addlyrics { \japanese }

\addlyrics { \portuguese }

Жълтата дюля беше щастлива,  
 הַיְלָה הַדְּלִיָּה הָיְתָה שְׂמֵחָה  
 いろはにほへと ちりぬるを わがよたれぞ つねならむ  
 à vo - - cê uma

3  
 че пухът, който цъфна,  
 אֵךְ תַּנְצַח קָרָפֶד עֵץ  
 うるのおくや まけふこえて あさきゆめみじ ゑひもせず  
 can - - ção le - - gal

## Vorlage für Vokalensemble mit dem Gesangstext über und unter dem System

In diesem Beispiel werden die Texte mit den Befehlen `alignAboveContext` und `alignBelowContext` über und unter dem System angeordnet.

```
global = {
  \key c \major
  \time 4/4
}
```

```
sopMusic = \relative c'' {
  c4 c c8[( b)] c4
}
sopWords = \lyricmode {
  hi hi hi hi
```

```

}

altoMusic = \relative c' {
  e4 f d e
}
altoWords = \lyricmode {
  ha ha ha ha
}

tenorMusic = \relative c' {
  g4 a f g
}
tenorWords = \lyricmode {
  hu hu hu hu
}

bassMusic = \relative c {
  c4 c g c
}
bassWords = \lyricmode {
  ho ho ho ho
}

\score {
  \new ChoirStaff <<
    \new Staff = "women" <<
      \new Voice = "sopranos" { \voiceOne << \global \sopMusic >> }
      \new Voice = "altos" { \voiceTwo << \global \altoMusic >> }
    >>
    \new Lyrics \with { alignAboveContext = "women" }
      \lyricsto "sopranos" \sopWords
    \new Lyrics \with { alignBelowContext = "women" }
      \lyricsto "altos" \altoWords
    % we could remove the line about this with the line below, since
    % we want the alto lyrics to be below the alto Voice anyway.
    % \new Lyrics \lyricsto "altos" \altoWords

    \new Staff = "men" <<
      \clef bass
      \new Voice = "tenors" { \voiceOne << \global \tenorMusic >> }
      \new Voice = "basses" { \voiceTwo << \global \bassMusic >> }
    >>
    \new Lyrics \with { alignAboveContext = "men" }
      \lyricsto "tenors" \tenorWords
    \new Lyrics \with { alignBelowContext = "men" }
      \lyricsto "basses" \bassWords
    % again, we could replace the line above this with the line below.
    % \new Lyrics \lyricsto "basses" \bassWords
  >>
}

```



## Volta text markup using repeatCommands

Though voltes are best specified using `\repeat volta`, the context property `repeatCommands` must be used in cases where the volta text needs more advanced formatting with `\markup`.

Since `repeatCommands` takes a list, the simplest method of including markup is to use an identifier for the text and embed it in the command list using the Scheme syntax `#(list (list 'volta textIdentifier))`. Start- and end-repeat commands can be added as separate list elements:

```
voltaAdLib = \markup { \volta-number { 1. 2. 3... } \italic { ad lib. } }

\relative c' ' {
  c1
  \set Score.repeatCommands = #(list (list 'volta voltaAdLib) 'start-repeat)
  c4 b d e
  \set Score.repeatCommands = #'((volta #f) (volta "4.") end-repeat)
  f1
  \set Score.repeatCommands = #'((volta #f))
}
```



## Vocal music

Abschnitt “Vocal music” in *Notationsreferenz*

### Ambitus pro Stimme hinzufügen

Ambitus können pro Stimme gesetzt werden. In diesem Fall müssen sie manuell verschoben werden, um Zusammenstöße zu verhindern.

```
\new Staff <<
  \new Voice \with {
    \consists "Ambitus_engraver"
  } \relative c'' {
    \override Ambitus.X-offset = 2.0
    \voiceOne
    c4 a d e
    f1
  }
  \new Voice \with {
    \consists "Ambitus_engraver"
  } \relative c' {
    \voiceTwo
    es4 f g as
    b1
  }
}>>
```



### Adding indicators to staves which get split after a break

This snippet defines the commands `\splitStaffBarLine`, `\convUpStaffBarLine`, and `\convDownStaffBarLine`. These add arrows at a bar line to denote that several voices sharing a staff will each continue on a staff of their own in the next system, or that voices split in this way recombine.

```
#(define-markup-command (arrow-at-angle layout props angle-deg length fill)
  (number? number? boolean?)
  (let* (
    (PI-OVER-180 (/ (atan 1 1) 34))
    (degrees->radians (lambda (degrees) (* degrees PI-OVER-180)))
    (angle-rad (degrees->radians angle-deg))
    (target-x (* length (cos angle-rad)))
    (target-y (* length (sin angle-rad))))
    (interpret-markup layout props
      (markup
        #:translate (cons (/ target-x 2) (/ target-y 2))
        #:rotate angle-deg
        #:translate (cons (/ length -2) 0)
        #:concat (:#draw-line (cons length 0)
          #:arrow-head X RIGHT fill))))))
```

```
splitStaffBarLineMarkup = \markup \with-dimensions #'(0 . 0) #'(0 . 0) {
  \combine
  \arrow-at-angle #45 #(\sqrt 8) ##t
  \arrow-at-angle #-45 #(\sqrt 8) ##t
}
```

```
splitStaffBarLine = {
  \once \override Staff.BarLine.stencil =
  #(\lambda (grob)
    (ly:stencil-combine-at-edge
      (ly:bar-line::print grob)
      X RIGHT
      (grob-interpret-markup grob splitStaffBarLineMarkup)
    0))
  \break
}
```

```
convDownStaffBarLine = {
  \once \override Staff.BarLine.stencil =
  #(\lambda (grob)
    (ly:stencil-combine-at-edge
      (ly:bar-line::print grob)
      X RIGHT
      (grob-interpret-markup grob #{
        \markup\with-dimensions #'(0 . 0) #'(0 . 0) {
          \translate #'(0 . -.13)\arrow-at-angle #-45 #(\sqrt 8) ##t
        }#})
    0))
  \break
}
```

```
convUpStaffBarLine = {
  \once \override Staff.BarLine.stencil =
  #(\lambda (grob)
    (ly:stencil-combine-at-edge
      (ly:bar-line::print grob)
      X RIGHT
      (grob-interpret-markup grob #{
        \markup\with-dimensions #'(0 . 0) #'(0 . 0) {
          \translate #'(0 . .14)\arrow-at-angle #45 #(\sqrt 8) ##t
        }#})
    0))
  \break
}
```

```
\header { tagline = ##f }
```

```
\paper {
  ragged-right = ##t
  short-indent = 10\mm
}
```

```

}

separateSopranos = {
  \set Staff.instrumentName = "AI AII"
  \set Staff.shortInstrumentName = "AI AII"
  \splitStaffBarLine
  \change Staff = "up"
}

convSopranos = {
  \convDownStaffBarLine
  \change Staff = "shared"
  \set Staff.instrumentName = "S A"
  \set Staff.shortInstrumentName = "S A"
}

sI = {
  \voiceOne
  \repeat unfold 4 f''2
  \separateSopranos
  \repeat unfold 4 g''2
  \convSopranos
  \repeat unfold 4 c''2
}

sII = {
  s1*2
  \voiceTwo
  \change Staff = "up"
  \repeat unfold 4 d''2
}

aI = {
  \voiceTwo
  \repeat unfold 4 a'2
  \voiceOne
  \repeat unfold 4 b'2
  \convUpStaffBarLine
  \voiceTwo
  \repeat unfold 4 g'2
}

aII = {
  s1*2
  \voiceTwo
  \repeat unfold 4 g'2
}

ten = {
  \voiceOne
  \repeat unfold 4 c'2
  \repeat unfold 4 d'2
  \repeat unfold 4 c'2
}

bas = {
  \voiceTwo
  \repeat unfold 4 f2

```

```

\repeat unfold 4 g2
\repeat unfold 4 c2
}

\score {
  <<
    \new ChoirStaff <<
      \new Staff = up \with {
        instrumentName = "SI SII"
        shortInstrumentName = "SI SII"
      } {
        s1*4
      }

      \new Staff = shared \with {
        instrumentName = "S A"
        shortInstrumentName = "S A"
      } <<
        \new Voice = sopI \sI
        \new Voice = sopII \sII
        \new Voice = altI \aI
        \new Voice = altII \aII
      >>
      \new Lyrics \with {
        alignBelowContext = up
      }
      \lyricsto sopII { e f g h }
      \new Lyrics \lyricsto altI { a b c d e f g h i j k l }

      \new Staff = men \with {
        instrumentName = "T B"
        shortInstrumentName = "T B"
      } <<
        \clef F
        \new Voice = ten \ten
        \new Voice = bas \bas
      >>
      \new Lyrics \lyricsto bas { a b c d e f g h i j k l }
    >>
  >>
  \layout {
    \context {
      \Staff \RemoveEmptyStaves
      \override VerticalAxisGroup.remove-first = ##t
    }
  }
}

```



Three musical staves showing vocal parts with lyrics. The first staff has Soprano (S A) and Tenor/Bass (T B) parts with lyrics 'a b c d'. The second staff has Soprano I (SI SII), Alto I (AI AII), and Tenor/Bass (T B) parts with lyrics 'e f g h'. The third staff has Soprano (S A) and Tenor/Bass (T B) parts with lyrics 'i j k l'. All parts are in common time (C) and use whole notes.

## Orchesterstichnoten zu einem Klavierauszug hinzufügen

Hier wird gezeigt, wie man das Hinzufügen von vielen Orchesterstichnoten zu einem Klavierauszug hinzufügen kann. Die musikalische Funktion `\cueWhile` braucht vier Argumente: Die Noten, von denen die Stichnoten formatiert werden sollen, definiert durch `\addQuote`, die Bezeichnung, die mit den Noten angegeben werden soll, dann entweder `#UP` (hoch) oder `#DOWN` (runter) zur Angabe von entweder `\voiceOne` mit der Bezeichnung über dem System oder `\voiceTwo` mit der Bezeichnung unter dem System, und schließlich die Klaviermusik, die parallel zu den Stichnoten gespielt werden soll. Die Bezeichnung des Stichnoteninstruments wird links der Stichnoten positioniert. Viele Abschnitte können zitiert werden, aber sie dürfen sich nicht überlappen.

`cueWhile =`

```
#(define-music-function
  (instrument name dir music)
  (string? string? ly:dir? ly:music?)
  #{
    \cueDuring $instrument #dir {
      \once \override TextScript.self-alignment-X = #RIGHT
      \once \override TextScript.direction = $dir
```

```

        <>-\markup { \tiny #name }
        $music
    }
    #})

flute = \relative c'' {
    \transposition c'
    s4 s4 e g
}
\addQuote "flute" { \flute }

clarinet = \relative c' {
    \transposition bes
    fis4 d d c
}
\addQuote "clarinet" { \clarinet }

singer = \relative c'' { c4. g8 g4 bes4 }
words = \lyricmode { here's the lyr -- ics }

pianoRH = \relative c'' {
    \transposition c'
    \cueWhile "clarinet" "Clar." #DOWN { c4. g8 }
    \cueWhile "flute" "Flute" #UP { g4 bes4 }
}
pianoLH = \relative c { c4 <c' e> e, <g c> }

\score {
  <<
    \new Staff {
      \new Voice = "singer" {
        \singer
      }
    }
    \new Lyrics {
      \lyricsto "singer"
      \words
    }
    \new PianoStaff <<
      \new Staff {
        \new Voice {
          \pianoRH
        }
      }
      \new Staff {
        \clef "bass"
        \pianoLH
      }
    >>
  >>
}

```



## Adjusting lyrics vertical spacing

This snippet shows how to bring the lyrics line closer to the staff.

*% Default layout:*

```
<<
\new Staff \new Voice = melody \relative c' {
  c4 d e f
  g4 f e d
  c1
}
\new Lyrics \lyricsto melody { aa aa aa aa aa aa aa aa aa }

\new Staff {
  \new Voice = melody \relative c' {
    c4 d e f
    g4 f e d
    c1
  }
}
% Reducing the minimum space below the staff and above the lyrics:
\new Lyrics \with {
  \override VerticalAxisGroup.nonstaff-relatedstaff-spacing =
    #'((basic-distance . 1))
}
\lyricsto melody { aa aa aa aa aa aa aa aa aa }
>>
```



## Aligning syllables with melisma

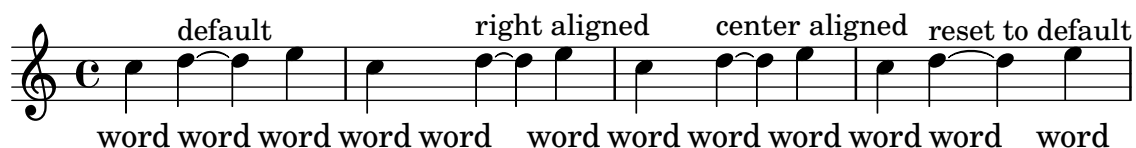
By default, lyrics syllables that start a melisma are left aligned on their note. The alignment can be altered using the `lyricMelismaAlignment` property.

```
\score {
  <<
```

```

\new Staff {
  \relative c''
  \new Voice = "vocal" {
    c d~\markup default d e
    c d~\markup "right aligned" d e
    c d~\markup "center aligned" d e
    c d~\markup "reset to default" d e
  }
}
\new Lyrics \lyricsto "vocal" {
  word word word
  \set lyricMelismaAlignment = #RIGHT
  word word word
  \set lyricMelismaAlignment = #CENTER
  word word word
  \unset lyricMelismaAlignment
  word word word
}
>>
}

```



## Ambitus

Ambitus indicate pitch ranges for voices.

Accidentals only show up if they are not part of the key signature. AmbitusNoteHead grobs also have ledger lines.

```

\layout {
  \context {
    \Voice
    \consists "Ambitus_engraver"
  }
}

<<
\new Staff {
  \relative c' {
    \time 2/4
    c4 f'
  }
}
\new Staff {
  \relative c' {
    \time 2/4
    \key d \major
    cis4 as'
  }
}

```

&gt;&gt;



## Ambitus after key signature

By default, ambitus are positioned at the left of the clef. The `\ambitusAfter` function allows for changing this placement. Syntax is `\ambitusAfter grob-interface` (see Graphical Object Interfaces (<http://lilypond.org/doc/v2.22/Documentation/internals/graphical-object-interfaces>) for a list of possible values for `grob-interface`.)

A common use case is printing the ambitus between key signature and time signature.

```
\new Staff \with {
  \consists Ambitus_engraver
} \relative {
  \ambitusAfter key-signature
  \key d \major
  es'8 g bes cis d2
}
```



## Ambitus mit vielen Stimmen

Indem man den `Ambitus_engraver` im `Staff`-Kontext hinzufügt, erhält man einen einzigen Ambitus pro System, auch in dem Fall, dass mehrere Stimmen sich im gleichen System befinden.

```
\new Staff \with {
  \consists "Ambitus_engraver"
}
<<
  \new Voice \relative c' {
    \voiceOne
    c4 a d e
    f1
  }
  \new Voice \relative c' {
    \voiceTwo
    es4 f g as
    b1
  }
>>
```



## Vorlage für Alte Notation – moderne Transkription des gregorianischen Chorals

Dieses Beispiel zeigt eine moderne Transkription des Gregorianischen Chorals. Hier gibt es keine Takte, keine Notenhälsen und es werden nur halbe und Viertelnoten verwendet. Zusätzliche Zeichen zeigen die Länge von Pausen an.

```
chant = \relative c' {
  \set Score.timing = ##f
  f4 a2 \divisioMinima
  g4 b a2 f2 \divisioMaior
  g4( f) f( g) a2 \finalis
}

verba = \lyricmode {
  Lo -- rem ip -- sum do -- lor sit a -- met
}

\score {
  \new GregorianTranscriptionStaff <<
    \new GregorianTranscriptionVoice = "melody" \chant
    \new GregorianTranscriptionLyrics = "one" \lyricsto melody \verba
  >>
}
```



## Vorlage für anglikanischen Psalm

Diese Vorlage zeigt eine Art, anglikanische Psalmengesänge zu setzen. Hier wird auch gezeigt, wie Strophen als einfacher Text unter den Noten hinzugefügt werden können. Zwei Strophen sind in unterschiedlicher Weise notiert um mehr Möglichkeiten darzustellen.

```
\paper { tagline = ##f }

SopranoMusic = \relative g' {
  g1 | c2 b | a1 | \bar "||"
  a1 | d2 c | c b | c1 | \bar "||"
}

AltoMusic = \relative c' {
  e1 | g2 g | f1 |
  f1 | f2 e | d d | e1 |
}

TenorMusic = \relative a {
  c1 | c2 c | c1 |
  d1 | g,2 g | g g | g1 |
}

BassMusic = \relative c {
  c1 | e2 e | f1 |
  d1 | b2 c | g' g | c,1 |
}
```

```

}

global = {
  \time 2/2
}

dot = \markup {
  \raise #0.7 \musicglyph "dots.dot"
}

tick = \markup {
  \raise #1 \fontsize #-5 \musicglyph "scripts.rvarcomma"
}

% Use markup to center the chant on the page
\markup {
  \fill-line {
    \score { % centered
      <<
        \new ChoirStaff <<
          \new Staff <<
            \global
            \clef "treble"
            \new Voice = "Soprano" <<
              \voiceOne
              \SopranoMusic
            >>
            \new Voice = "Alto" <<
              \voiceTwo
              \AltoMusic
            >>
          >>
        \new Staff <<
          \clef "bass"
          \global
          \new Voice = "Tenor" <<
            \voiceOne
            \TenorMusic
          >>
          \new Voice = "Bass" <<
            \voiceTwo
            \BassMusic
          >>
        >>
      >>
    }
  }
  \layout {
    \context {
      \Score
      \override SpacingSpanner.base-shortest-duration =
        \musicLength 2
    }
  }
}

```

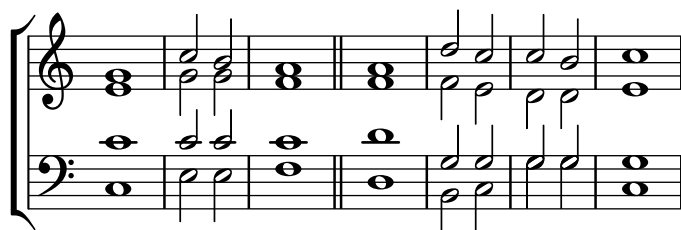
```

        \context {
          \Staff
          \remove "Time_signature_engraver"
        }
      }
    } % End score
  }
} % End markup

\markup {
  \fill-line {
    \column {
      \left-align {
        \null \null \null
        \line {
          \fontsize #5 0
          \fontsize #3 come
          let us \bold sing | unto \dot the | Lord : let
        }
        \line {
          us heartily
          \concat { re \bold joice }
          in the | strength of | our
        }
        \line {
          sal | vation.
        }
        \null
        \line {
          \hspace #2.5 8. Today if ye will hear his voice *
        }
        \line {
          \concat { \bold hard en }
          \tick not your \tick hearts : as in the pro-
        }
        \line {
          vocation * and as in the \bold day of tempt- \tick
        }
        \line {
          -ation \tick in the \tick wilderness.
        }
      }
    }
  }
}

```





**O** come let us **sing** | unto • the | Lord : let  
us heartily **rejoice** in the | strength of | our  
sal | vation.

8. Today if ye will hear his voice \*  
**harden** ' not your ' hearts : as in the pro-  
vocation \* and as in the **day** of tempt- '  
-ation ' in the ' wilderness.

## Arranging separate lyrics on a single line

Sometimes you may want to put lyrics for different performers on a single line: where there is rapidly alternating text, for example. This snippet shows how this can be done with `\override VerticalAxisGroup.nonstaff-nonstaff-spacing.minimum-distance = ##f`.

```
\header { tagline = ##f }

\layout {
  \context {
    \Lyrics
    \override VerticalAxisGroup
      .nonstaff-nonstaff-spacing
      .minimum-distance = ##f
  }
}

aliceSings = \markup { \smallCaps "Alice" }
eveSings = \markup { \smallCaps "Eve" }

<<
\new Staff <<
  \new Voice = "alice" {
    f'4^\aliceSings g' r2 |
    s1 |
    f'4^\aliceSings g' r2 |
    s1 | \break
    % ...

    \voiceOne
    s2 a'8^\aliceSings a' b'4 |
    \oneVoice
    g'1
```

```

}
\new Voice = "eve" {
  s1 |
  a'2^\eveSings g' |
  s1 |
  a'2^\eveSings g'
  % ...

  \voiceTwo
  f'4^\eveSings a'8 g' f'4 e' |
  \oneVoice
  s1
}
>>
\new Lyrics \lyricsto "alice" {
  may -- be
  sec -- ond
  % ...
  Shut up, you fool!
}
\new Lyrics \lyricsto "eve" {
  that the
  words are
  % ...
  ...and then I was like--
}
>>

```

ALICE EVE ALICE EVE

may - be that the sec - ond words are

5 EVE ALICE

...and then I was Shut up, you fool!

like--

## Changing stanza fonts

Fonts can be changed independently for each stanza, including the font used for printing the stanza number.

```

%{
You may have to install additional fonts.

```

Red Hat Fedora

*dejavu-fonts-all*

Debian GNU/Linux, Ubuntu

```

    fonts-dejavu-core
    fonts-dejavu-extra
%}

\relative c'' {
  \time 3/4
  g2 e4
  a2 f4
  g2.
}
\addlyrics {
  \set stanza = #"1. "
  Hi, my name is Bert.
}
\addlyrics {
  \override StanzaNumber.fonts.serif = "DejaVu Sans"
  \set stanza = #"2. "
  \override LyricText.font-family = #'typewriter
  Oh, ché -- ri, je t'aime
}

```



1. Hi, my name is Bert.
2. Oh, ché-ri, je t'aime

## Psalmennotation

Diese Form der Notation wird benutzt für die Notation von Psalmen, in denen die Strophen nicht die gleiche Länge haben.

```

stemOff = \hide Staff.Stem
stemOn  = \undo \stemOff

\score {
  \new Staff \with { \remove "Time_signature_engraver" }
  {
    \key g \minor
    \cadenzaOn
    \stemOff a'\breve bes'4 g'4
    \stemOn a'2 \section
    \stemOff a'\breve g'4 a'4
    \stemOn f'2 \section
    \stemOff a'\breve~\markup { \italic flexe }
    \stemOn g'2 \fine
  }
}

```



## Forcing hyphens to be shown

If LilyPond does not think there is space for a hyphen, it will be omitted. The behaviour can be overridden with the minimum-distance property of `LyricHyphen`.

```
\relative c'' {
  c32 c c c
  c32 c c c
  c32 c c c
  c32 c c c
}
\addlyrics {
  syl -- lab word word
  \override LyricHyphen.minimum-distance = #1.0
  syl -- lab word word
  \override LyricHyphen.minimum-distance = #2.0
  syl -- lab word word
  \revert LyricHyphen.minimum-distance
  syl -- lab word word
}
```



## Silben im Gesangstext formatieren

Textbeschriftungsmodus kann eingesetzt werden, um individuelle Silben im Gesangstext zu formatieren.

```
mel = \relative c'' { c4 c c c }
lyr = \lyricmode {
  Lyrics \markup { \italic can } \markup { \with-color #red contain }
  \markup { \fontsize #8 \bold Markup! }
}
```

```
<<
  \new Voice = melody \mel
  \new Lyrics \lyricsto melody \lyr
>>
```



## How to put ties between syllables in lyrics

This can be achieved by separating those syllables by tildes.

```
\lyrics {
  wa~o~a
}

wa_o_a
```

## Hymnus-Vorlage

Dieses Beispiel zeigt eine Möglichkeit, eine Hymnusmelodie zu setzen, in der jede Zeile mit einem Auftakt beginnt und einem unvollständigen Takt abschließt. Es zeigt auch, wie man die Strophen als allein stehenden Text unter die Noten hinzufügt.

```

Timeline = {
  \time 4/4
  \tempo 4=96
  \partial 2
  s2 | s1 | s2 \breathe s2 | s1 | s2 \caesura \break
  s2 | s1 | s2 \breathe s2 | s1 | s2 \fine
}

SopranoMusic = \relative g' {
  g4 g | g g g g | g g g g | g g g g | g2
  g4 g | g g g g | g g g g | g g g g | g2
}

AltoMusic = \relative c' {
  d4 d | d d d d | d d d d | d d d d | d2
  d4 d | d d d d | d d d d | d d d d | d2
}

TenorMusic = \relative a {
  b4 b | b b b b | b b b b | b b b b | b2
  b4 b | b b b b | b b b b | b b b b | b2
}

BassMusic = \relative g {
  g4 g | g g g g | g g g g | g g g g | g2
  g4 g | g g g g | g g g g | g g g g | g2
}

global = {
  \key g \major
}

\score { % Start score
  <<
    \new PianoStaff << % Start pianostaff
    \new Staff << % Start Staff = RH
    \global
    \clef "treble"
    \new Voice = "Soprano" << % Start Voice = "Soprano"
    \Timeline
    \voiceOne
    \SopranoMusic
  >> % End Voice = "Soprano"
  \new Voice = "Alto" << % Start Voice = "Alto"
  \Timeline
  \voiceTwo
  \AltoMusic
}

```

```

    >> % End Voice = "Alto"
>> % End Staff = RH
\new Staff << % Start Staff = LH
  \global
  \clef "bass"
  \new Voice = "Tenor" << % Start Voice = "Tenor"
    \Timeline
    \voiceOne
    \TenorMusic
  >> % End Voice = "Tenor"
  \new Voice = "Bass" << % Start Voice = "Bass"
    \Timeline
    \voiceTwo
    \BassMusic
  >> % End Voice = "Bass"
>> % End Staff = LH
>> % End pianostaff
>>
} % End score

\markup {
  \fill-line {
    ""
    {
      \column {
        \left-align {
          "This is line one of the first verse"
          "This is line two of the same"
          "And here's line three of the first verse"
          "And the last line of the same"
        }
      }
    }
  }
  ""
}

\layout {
  \context {
    \Score
    caesuraType = #'((bar-line . "||"))
    fineBarType = "||"
  }
}

\paper { % Start paper block
  indent = 0 % don't indent first system
  line-width = 130 % shorten line length to suit music
  tagline = ##f % Don't print tag line, can be removed
} % End paper block

```



This is line one of the first verse  
 This is line two of the same  
 And here's line three of the first verse  
 And the last line of the same

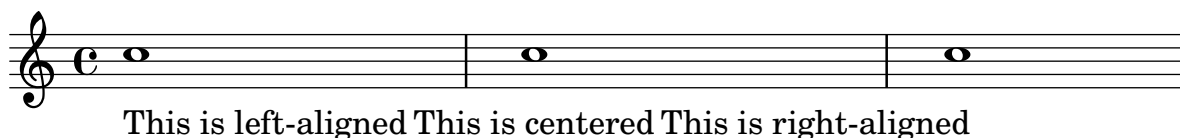
## Ausrichtung von Gesangstext

Die horizontale Ausrichtung von Gesangstext kann eingestellt werden, indem man die `self-alignment-X`-Eigenschaft des `LyricText`-Objekts verändert. #-1 bedeutet links, #0 bedeutet mittig und #1 bedeutet rechts, man kann aber genauso gut auch `#LEFT`, `#CENTER` und `#RIGHT` benutzen.

```
\layout { ragged-right = ##f }

\relative c' ' {
  c1
  c1
  c1
}

\addlyrics {
  \once \override LyricText.self-alignment-X = #LEFT
  "This is left-aligned"
  \once \override LyricText.self-alignment-X = #CENTER
  "This is centered"
  \once \override LyricText.self-alignment-X = 1
  "This is right-aligned"
}
```



## Marking notes of spoken parts with a cross on the stem (Sprechstimme)

This example shows how to put crosses on stems. Mark the beginning of a spoken section with the `\speakOn` keyword, and end it with the `\speakOff` keyword.

```
speakOn = {
```

```

\override Stem.stencil =
  #(lambda (grob)
    (let* ((x-parent (ly:grob-parent grob X))
      (is-rest? (ly:grob? (ly:grob-object x-parent 'rest))))
      (if is-rest?
        empty-stencil
        (ly:stencil-combine-at-edge
          (ly:stem::print grob)
          Y
          (- (ly:grob-property grob 'direction))
          (grob-interpret-markup grob
            (markup #:center-align #:fontsize -4
              #:musicglyph "noteheads.s2cross")))
          -2.3))))))
}

speakOff = {
  \revert Stem.stencil
  \revert Flag.stencil
}

\score {
  \new Staff {
    \relative c' {
      a4 b a c
      \speakOn
      g4 f r g
      b4 r d e
      \speakOff
      c4 a g f
    }
  }
}

```



## Platzverteilung von Gesangstext wie in 2.12 für neuere Versionen

Die Maschine für die vertikale Platzverteilung hat sich in Version 2.14 verändert. Dadurch wurde Gesangstext auf andere Art verteilt. Es ist möglich, Eigenschaften von Lyric- und Staff-Kontexten einzustellen, um die Platzverteilung so aussehen zu lassen wie für Version 2.12.

```
\header { tagline = ##f }
```

```

global = {
  \key d \major
  \time 3/4
}

```

```
sopMusic = \relative c' {
```



```

% VERSE ONE
fis4 fis fis | \break
fis4. e8 e4
}

altoMusic = \relative c' {
  % VERSE ONE
  d4 d d |
  d4. b8 b4 |
}

tenorMusic = \relative c' {
  a4 a a |
  b4. g8 g4 |
}

bassMusic = \relative c {
  d4 d d |
  g,4. g8 g4 |
}

words = \lyricmode {
  Great is Thy faith -- ful -- ness,
}

\score {
  \new ChoirStaff <<
    \new Lyrics = sopranos
    \new Staff = women <<
      \new Voice = "sopranos" {
        \voiceOne
        \global \sopMusic
      }
      \new Voice = "altos" {
        \voiceTwo
        \global \altoMusic
      }
    >>
    \new Lyrics = "altos"
    \new Lyrics = "tenors"
    \new Staff = men <<
      \clef bass
      \new Voice = "tenors" {
        \voiceOne
        \global \tenorMusic
      }
      \new Voice = "basses" {
        \voiceTwo \global \bassMusic
      }
    >>
    \new Lyrics = basses
    \context Lyrics = sopranos \lyricsto sopranos \words

```

```

\context Lyrics = altos \lyricsto altos \words
\context Lyrics = tenors \lyricsto tenors \words
\context Lyrics = basses \lyricsto basses \words
>>
\layout {
  \context {
    \Lyrics
    \override VerticalAxisGroup.staff-affinity = ##f
    \override VerticalAxisGroup.staff-staff-spacing =
      #'((basic-distance . 0)
        (minimum-distance . 2)
        (padding . 2))
  }
  \context {
    \Staff
    \override VerticalAxisGroup.staff-staff-spacing =
      #'((basic-distance . 0)
        (minimum-distance . 2)
        (padding . 2))
  }
}
}

```

Great is Thy

Great is Thy

Great is Thy

Great is Thy

2. faith - - - ful - ness,

faith - - - ful - ness,

faith - - - ful - ness,

faith - - - ful - ness,

## Orchester, Chor und Klavier

Diese Vorlage zeigt die Benutzung von geschachtelten `StaffGroup`- und `GrandStaff`-Kontexte, um Instrumente in Untergruppen zu unterteilen, und die Benutzung von `\transpose` für transponierende Instrumente. Alle Noten werden in C geschrieben. Noten können in C eingegeben werden, oder auch in der Tonart des Instrumentes: dann müssen sie zuerst nach C transponiert werden, bevor sie einer Variable zugewiesen werden.

```
#(set-global-staff-size 17)

\paper {
  indent = 3.0\cm % add space for instrumentName
  short-indent = 1.5\cm % add less space for shortInstrumentName
}

\header { tagline = ##f }

fluteMusic = \relative c' { \key g \major g'1 b }

% Pitches as written on a manuscript for Clarinet in A
% are transposed to concert pitch.

clarinetMusic = \transpose c' a
  \relative c'' { \key bes \major bes1 d }

trumpetMusic = \relative c { \key g \major g''1 b }

% Key signature is often omitted for horns

hornMusic = \transpose c' f
  \relative c { d'1 fis }

percussionMusic = \relative c { \key g \major g1 b }

sopranoMusic = \relative c'' { \key g \major g'1 b }

sopranoLyrics = \lyricmode { Lyr -- ics }

altoIMusic = \relative c' { \key g \major g'1 b }

altoIIMusic = \relative c' { \key g \major g'1 b }

altoILyrics = \sopranoLyrics

altoIIILyrics = \lyricmode { Ah -- ah }

tenorMusic = \relative c' { \clef "treble_8" \key g \major g1 b }

tenorLyrics = \sopranoLyrics

pianoRHMus = \relative c { \key g \major g''1 b }
```

```

pianoLHMusic = \relative c { \clef bass \key g \major g1 b }

violinIMusic = \relative c' { \key g \major g'1 b }

violinIIMusic = \relative c' { \key g \major g'1 b }

violaMusic = \relative c { \clef alto \key g \major g'1 b }

celloMusic = \relative c { \clef bass \key g \major g1 b }

bassMusic = \relative c { \clef "bass_8" \key g \major g,1 b }

\score {
  <<
    \new StaffGroup = "StaffGroup_woodwinds" <<
      \new Staff = "Staff_flute" \with { instrumentName = "Flute" }
      \fluteMusic

      \new Staff = "Staff_clarinet" \with {
        instrumentName = \markup { \concat { "Clarinet in B" \flat } }
      }

      % Declare that written Middle C in the music
      % to follow sounds a concert B flat, for
      % output using sounded pitches such as MIDI.
      %\transposition bes

      % Print music for a B-flat clarinet
      \transpose bes c' \clarinetMusic
    >>

    \new StaffGroup = "StaffGroup_brass" <<
      \new Staff = "Staff_hornI" \with { instrumentName = "Horn in F" }
      % \transposition f
      \transpose f c' \hornMusic

      \new Staff = "Staff_trumpet" \with { instrumentName = "Trumpet in C" }
      \trumpetMusic

    >>
    \new RhythmicStaff = "RhythmicStaff_percussion"
    \with { instrumentName = "Percussion" }
    <<
      \percussionMusic
    >>
    \new PianoStaff \with { instrumentName = "Piano" }
    <<
      \new Staff { \pianoRHMUSIC }
      \new Staff { \pianoLHMusic }
    >>
    \new ChoirStaff = "ChoirStaff_choir" <<
      \new Staff = "Staff_soprano" \with { instrumentName = "Soprano" }

```

```

\new Voice = "soprano"
\sopranoMusic

\new Lyrics \lyricsto "soprano" { \sopranoLyrics }
\new GrandStaff = "GrandStaff_altoI"
\with { \accepts Lyrics } <<
  \new Staff = "Staff_altoI" \with { instrumentName = "Alto I" }
  \new Voice = "altoI"
  \altoIMusic

  \new Lyrics \lyricsto "altoI" { \altoILyrics }
  \new Staff = "Staff_altoII" \with { instrumentName = "Alto II" }
  \new Voice = "altoII"
  \altoIIMusic

  \new Lyrics \lyricsto "altoII" { \altoIIILyrics }
  >>

\new Staff = "Staff_tenor" \with { instrumentName = "Tenor" }
  \new Voice = "tenor"
  \tenorMusic

\new Lyrics \lyricsto "tenor" { \tenorLyrics }
  >>
\new StaffGroup = "StaffGroup_strings" <<
  \new GrandStaff = "GrandStaff_violins" <<
    \new Staff = "Staff_violinI" \with { instrumentName = "Violin I" }
    \violinIMusic

    \new Staff = "Staff_violinII" \with { instrumentName = "Violin II" }
    \violinIIMusic
  >>

  \new Staff = "Staff_viola" \with { instrumentName = "Viola" }
  \violaMusic

  \new Staff = "Staff_cello" \with { instrumentName = "Cello" }
  \celloMusic

  \new Staff = "Staff_bass" \with { instrumentName = "Double Bass" }
  \bassMusic
  >>
  >>
\layout { }
}

```

Flute

Clarinet in B $\flat$

Horn in F

Trumpet in C

Percussion

Piano

Soprano

Alto I

Alto II

Tenor

Violin I

Violin II

Viola

Cello

Double Bass

Lyr - ics

Lyr - ics

Lyr - ics

Ah - ah

Lyr - ics

8

## Vorlage für Klavier und Gesangsstimme

Das nächste Beispiel ist typisch für ein Lied: Im oberen System die Melodie mit Text, darunter Klavierbegleitung.

```
melody = \relative c'' {
  \clef treble
  \key c \major
  \time 4/4

  a b c d
}

text = \lyricmode {
  Aaa Bee Cee Dee
}

upper = \relative c'' {
  \clef treble
```

```

\key c \major
\time 4/4

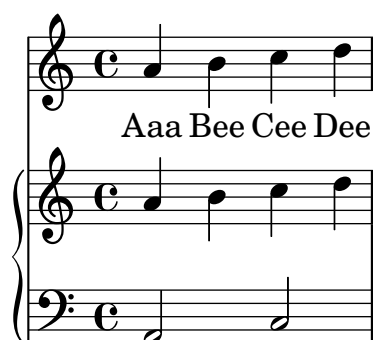
a4 b c d
}

lower = \relative c {
  \clef bass
  \key c \major
  \time 4/4

  a2 c
}

\score {
  <<
    \new Voice = "mel" { \autoBeamOff \melody }
    \new Lyrics \lyricsto mel \text
    \new PianoStaff <<
      \new Staff = "upper" \upper
      \new Staff = "lower" \lower
    >>
  >>
  \layout {
    \context { \Staff \RemoveEmptyStaves }
  }
  \midi { }
}

```



## Putting lyrics inside the staff

Lyrics can be moved vertically to place them inside the staff. The lyrics are moved with `\override LyricText.extra-offset = #'(0 . dy)` and there are similar commands to move the extenders and hyphens. The offset needed is established with trial and error.

```

<<
  \new Staff <<
    \new Voice = "voc" \relative c' { \stemDown a bes c8 b c4 }
  >>
  \new Lyrics \with {
    \override LyricText.extra-offset = #'(0 . 8.6)
    \override LyricExtender.extra-offset = #'(0 . 8.6)
    \override LyricHyphen.extra-offset = #'(0 . 8.6)
  }

```

```

} \lyricsto "voc" { La la -- la _ _ la }
>>

```



## SATB-Chorvorlage auf vier Systemen

SATB-Chorvorlage auf vier Systemen

```

global = {
  \key c \major
  \time 4/4
  \dynamicUp
}
sopranonotes = \relative c'' {
  c2 \p \< d c d \f
}
sopranowords = \lyricmode { do do do do }
altonotes = \relative c'' {
  c2 \p d c d
}
altowords = \lyricmode { re re re re }
tenornotes = {
  \clef "G_8"
  c2 \mp d c d
}
tenorwords = \lyricmode { mi mi mi mi }
bassnotes = {
  \clef bass
  c2 \mf d c d
}
basswords = \lyricmode { mi mi mi mi }

\score {
  \new ChoirStaff <<
    \new Staff <<
      \new Voice = "soprano" <<
        \global
        \sopranonotes
      >>
      \new Lyrics \lyricsto "soprano" \sopranowords
    >>
    \new Staff <<
      \new Voice = "alto" <<
        \global
        \altonotes
      >>
      \new Lyrics \lyricsto "alto" \altowords
    >>
  >>
}

```



```

\new Staff <<
  \new Voice = "tenor" <<
    \global
    \tenornotes
  >>
  \new Lyrics \lyricsto "tenor" \tenorwords
  >>
\new Staff <<
  \new Voice = "bass" <<
    \global
    \bassnotes
  >>
  \new Lyrics \lyricsto "bass" \basswords
  >>
>>
}

```

*p* *f*  
do do do do  
*p*  
re re re re  
*mp*  
mi mi mi mi  
*mf*  
mi mi mi mi

## Vorlage für eine Notenzeile mit Noten, Text und Akkorden

Mit diesem Beispiel können Sie einen Song mit Melodie, Text und Akkorden schreiben.

```

melody = \relative c' {
  \clef treble
  \key c \major
  \time 4/4

  a4 b c d
}

text = \lyricmode {
  Aaa Bee Cee Dee
}

harmonies = \chordmode {
  a2 c
}

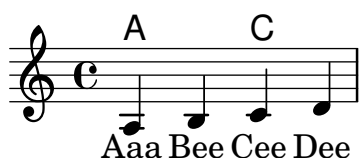
```

```

}

\score {
  <<
    \new ChordNames {
      \set chordChanges = ##t
      \harmonies
    }
    \new Voice = "one" { \autoBeamOff \melody }
    \new Lyrics \lyricsto "one" \text
  >>
  \layout { }
  \midi { }
}

```



## Single staff template with notes, lyrics, chords and frets

Here is a simple lead sheet template with melody, lyrics, chords and fret diagrams.

```

verseI = \lyricmode {
  \set stanza = #"1."
  This is the first verse
}

verseII = \lyricmode {
  \set stanza = #"2."
  This is the second verse.
}

theChords = \chordmode {
  % insert chords for chordnames and fretboards here
  c2 g4 c
}

staffMelody = \relative c' {
  \key c \major
  \clef treble
  % Type notes for melody here
  c4 d8 e f4 g
  \bar "|"
}

\score {
  <<
    \context ChordNames { \theChords }
    \context FretBoards { \theChords }
    \new Staff {
      \context Voice = "voiceMelody" { \staffMelody }

```

```

    }
    \new Lyrics = "lyricsI" {
      \lyricsto "voiceMelody" \verseI
    }
    \new Lyrics = "lyricsII" {
      \lyricsto "voiceMelody" \verseII
    }
  >>
  \layout { }
  \midi { }
}

```

The image shows a musical score for two verses. The notation is in treble clef, 4/4 time, with a key signature of one flat (B-flat). The melody consists of four notes: a quarter note (B-flat), a quarter note (A), a half note (G), and a quarter note (F). Above the first three notes are guitar chord diagrams for C major (C, E, G), G major (G, B, D), and C major (C, E, G). The diagrams show fingerings: the first C chord has fingers 1, 2, and 3 on strings 1, 2, and 3 respectively; the G chord has fingers 1, 2, and 3 on strings 1, 2, and 3 respectively; and the second C chord has fingers 1, 2, and 3 on strings 1, 2, and 3 respectively. Below the notation, the lyrics are: 1. This is the first verse, 2. This is the second verse.

## Vorlage für ein Notensystem mit Noten und Gesangstext

Das nächste Beispiel zeigt eine einfache Melodie mit Text. Kopieren Sie es in Ihre Datei, fügen Sie Noten und Text hinzu und übersetzen Sie es mit LilyPond. In dem Beispiel wird die automatische Balkenverbindung ausgeschaltet (mit dem Befehl `\autoBeamOff`), wie es für Vokalmusik üblich ist. Wenn Sie die Balken wieder einschalten wollen, müssen Sie die entsprechende Zeile entweder ändern oder auskommentieren.

```

melody = \relative c' {
  \clef treble
  \key c \major
  \time 4/4

  a4 b c d
}

text = \lyricmode {
  Aaa Bee Cee Dee
}

\score{
  <<
    \new Voice = "one" {
      \autoBeamOff
      \melody
    }
    \new Lyrics \lyricsto "one" \text
  >>
  \layout { }
  \midi { }
}

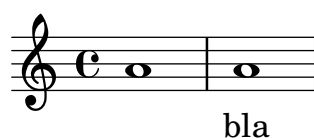
```



## Skips in lyric mode

The `s` syntax for skips is only available in note mode and chord mode. In other situations, for example, when entering lyrics, using the `\skip` command is recommended.

```
<<
  \relative c'' { a1 | a }
  \new Lyrics \lyricmode { \skip 1 bla1 }
>>
```

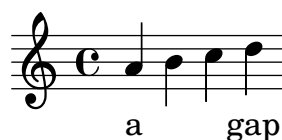


## Skips in lyric mode (2)

Although `s` skips cannot be used in `\lyricmode` (it is taken to be a literal „s“, not a space), double quotes (") or underscores (\_) are available.

So for example:

```
<<
  \relative c'' { a4 b c d }
  \new Lyrics \lyricmode { a4 "" _ gap }
>>
```



## Arpeggio-Klammern benutzen, um geteilte Stimmen besser sichtbar zu machen

Das `arpeggioBracket`-Klammerobjekt kann benutzt werden, um geteilte Stimmen anzuzeigen, wenn keine Hälse diese Information bieten. Das sieht man oft in Chormusik.

```
\include "english.ly"
```

```
\score {
  \relative c'' {
    \key a \major
    \time 2/2
    <<
      \new Voice = "upper"
      <<
        { \voiceOne \arpeggioBracket
          a2( b2
            <b d>1\arpeggio)
            <cs e>\arpeggio ~
            <cs e>4
```

```

    }
    \addlyrics { \lyricmode { A -- men. } }
  >>
  \new Voice = "lower"
  { \voiceTwo
    a1 ~
    a
    a ~
    a4 \bar "|"
  }
  >>
}
\layout { ragged-right = ##t }
}

```



## Using tags to produce mensural and modern music from the same source

Using tags, it is possible to produce both mensural and modern notation from the same music. In this snippet, a function `\menrest` is introduced, allowing mensural rests to be pitched as in the original, but with modern rests in the standard staff position.

Tags can also be used where other differences are needed: for example using „whole measure rests“ (`R1`, `R\breve`, etc.) in modern music, but normal rests (`r1`, `r\breve`, etc.) in the mensural version. Converting mensural music to its modern equivalent is usually referred to as *transcription*.

```

\header { tagline = ##f }

menrest =
#(define-music-function (note)
  (ly:music?)
  #{
    \tag #'mens $(make-music 'RestEvent note)
    \tag #'mod $(make-music 'RestEvent note 'pitch '())
  })

MenStyle = {
  \autoBeamOff
  \override NoteHead.style = #'petrucci
  \override Score.BarNumber.transparent = ##t
  \override Stem.neutral-direction = #up
}

finalis = \section

Music = \relative c'' {
  \set Score.tempoHideNote = ##t
  \key f \major

```

```

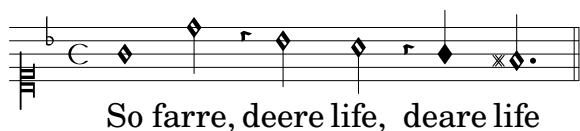
\time 4/4
g1 d'2 \menrest bes4 bes2 a2 r4 g4 fis2.
\finalis
}

MenLyr = \lyricmode { So farre, deere life, deare life }
ModLyr = \lyricmode { So far, dear life, dear life }

\score {
  \keepWithTag #'mens {
    <<
      \new MensuralStaff
      {
        \new MensuralVoice = Cantus
        \clef "mensural-c1" \MenStyle \Music
      }
      \new Lyrics \lyricsto Cantus \MenLyr
    >>
  }
}

\score {
  \keepWithTag #'mod {
    \new ChoirStaff <<
      \new Staff
      {
        \new Voice = Sop \with {
          \remove "Note_heads_engraver"
          \consists "Completion_heads_engraver"
          \remove "Rest_engraver"
          \consists "Completion_rest_engraver" }
        {
          \shiftDurations 1 0 { \autoBeamOff \Music }
        }
      }
      \new Lyrics \lyricsto Sop \ModLyr
    >>
  }
}

```



## Gesangstext und Ossia vertikal ausrichten

Dieser Schnipsel zeigt, wie man die Kontexteigenschaften `alignBelowContext` und `alignAboveContext` benutzen kann, um die Positionierung von Gesangstext und Ossia-Abschnitten zu kontrollieren.

```
\relative c' <<
  \new Staff = "1" { c4 c s2 }
  \new Staff = "2" { c4 c s2 }
  \new Staff = "3" { c4 c s2 }
  { \skip 2
    <<
      \lyrics {
        \set alignBelowContext = "1"
        lyrics4 below
      }
      \new Staff \with {
        alignAboveContext = "3"
        fontSize = -2
        \override StaffSymbol.staff-space = #(magstep -2)
        \remove "Time_signature_engraver"
      } {
        \tuplet 6/4 {
          \override TextScript.padding = 3
          c8[~"ossia above" d e d e f]
        }
      }
    >>
  }
>>

\paper {
  ragged-right = ##t
}
```



## Vertically centered common lyrics

In a vocal piece where there are several (two, four or more) lines of lyrics and common lyrics for all voices at some point, the common lyrics may be made to appear vertically centered, as shown in the following example:

```

dropLyrics = {
  \override LyricText.extra-offset = #'(0 . -4.5)
  \override LyricHyphen.extra-offset = #'(0 . -4.5)
  \override LyricExtender.extra-offset = #'(0 . -4.5)
  \override StanzaNumber.extra-offset = #'(0 . -4.5)
}

raiseLyrics = {
  \revert LyricText.extra-offset
  \revert LyricHyphen.extra-offset
  \revert LyricExtender.extra-offset
  \revert StanzaNumber.extra-offset
}

skipFour = \repeat unfold 4 { \skip 8 }

lyricsA = \lyricmode {
  The first verse has
  \dropLyrics
  \set stanza = #"    All:"
  the com -- mon __ words
  \raiseLyrics
  used in all four.
}

lyricsB = \lyricmode { In stan -- za two,    \skipFour al -- so ap -- pear. }

lyricsC = \lyricmode { By the third verse,  \skipFour are get -- ting dull. }


lyricsD = \lyricmode { Last stan -- za, and \skipFour get used once more. }

melody = \relative c' {
  c4 d e f |
  g f e8( e f) d |
  c4 e d c |
}

\score {
  <<
    \new Voice = m \melody
    \new Lyrics \lyricsto m \lyricsA
    \new Lyrics \lyricsto m \lyricsB
    \new Lyrics \lyricsto m \lyricsC
    \new Lyrics \lyricsto m \lyricsD
  >>
}

```





The first verse has used in all four.  
 In stan - za two, al - so ap - pear.  
 By the third verse, **All:** the common words are get - ting dull.  
 Last stan - za, and get used once more.

## Vorlage für Vokalensemble

Dieses Beispiel ist für vierstimmigen Gesang (SATB). Bei größeren Stücken ist es oft sinnvoll, eine allgemeine Variable zu bestimmen, die in allen Stimmen eingefügt wird. Taktart und Vorzeichen etwa sind fast immer gleich in allen Stimmen.

```
\paper {
  top-system-spacing.basic-distance = 10
  score-system-spacing.basic-distance = 20
  system-system-spacing.basic-distance = 20
  last-bottom-spacing.basic-distance = 10
}
```

```
global = {
  \key c \major
  \time 4/4
}
```

```
sopMusic = \relative {
  c'4 c c8[( b)] c4
}
sopWords = \lyricmode {
  hi hi hi hi
}
```

```
altoMusic = \relative {
  e'4 f d e
}
altoWords = \lyricmode {
  ha ha ha ha
}
```

```
tenorMusic = \relative {
  g4 a f g
}
tenorWords = \lyricmode {
  hu hu hu hu
}
```

```
bassMusic = \relative {
  c4 c g c
}
bassWords = \lyricmode {
  ho ho ho ho
}
```

```

\score {
  \new ChoirStaff <<
    \new Lyrics = "sopranos" \with {
      % this is needed for lyrics above a staff
      \override VerticalAxisGroup.staff-affinity = #DOWN
    }
    \new Staff = "women" <<
      \new Voice = "sopranos" {
        \voiceOne
        << \global \sopMusic >>
      }
      \new Voice = "altos" {
        \voiceTwo
        << \global \altoMusic >>
      }
    >>
    \new Lyrics = "altos"
    \new Lyrics = "tenors" \with {
      % this is needed for lyrics above a staff
      \override VerticalAxisGroup.staff-affinity = #DOWN
    }
    \new Staff = "men" <<
      \clef bass
      \new Voice = "tenors" {
        \voiceOne
        << \global \tenorMusic >>
      }
      \new Voice = "basses" {
        \voiceTwo << \global \bassMusic >>
      }
    >>
    \new Lyrics = "basses"
    \context Lyrics = "sopranos" \lyricsto "sopranos" \sopWords
    \context Lyrics = "altos" \lyricsto "altos" \altoWords
    \context Lyrics = "tenors" \lyricsto "tenors" \tenorWords
    \context Lyrics = "basses" \lyricsto "basses" \bassWords
  >>
}

```



## Vocal ensemble template with automatic piano reduction

In diesem Beispiel wird ein automatischer Klavierauszug zu der Chorpartitur hinzugefügt. Das zeigt eine der Stärken von LilyPond – man kann eine Variable mehr als einmal benutzen. Wenn Sie irgendeine Änderung an einer Chorstimme vornehmen, (etwa `tenorMusic`), verändert sich auch der Klavierauszug entsprechend.

```
\paper {
  top-system-spacing.basic-distance = 10
  score-system-spacing.basic-distance = 20
  system-system-spacing.basic-distance = 20
  last-bottom-spacing.basic-distance = 10
}

global = {
  \key c \major
  \time 4/4
}

sopMusic = \relative {
  c'4 c c8[( b)] c4
}
sopWords = \lyricmode {
  hi hi hi hi
}

altoMusic = \relative {
  e'4 f d e
}
altoWords = \lyricmode {
  ha ha ha ha
}

tenorMusic = \relative {
  g4 a f g
}
tenorWords = \lyricmode {
  hu hu hu hu
}

bassMusic = \relative {
  c4 c g c
}
bassWords = \lyricmode {
  ho ho ho ho
}

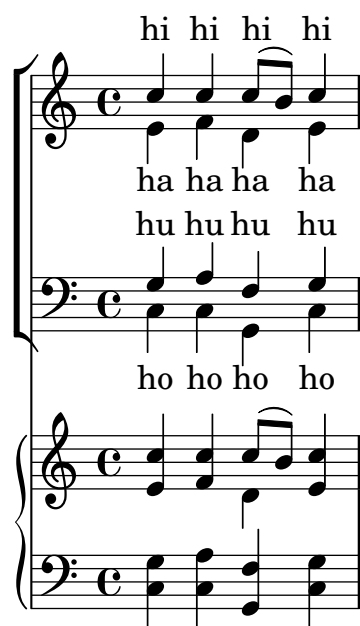
\score {
  <<
  \new ChoirStaff <<
  \new Lyrics = "sopranos" \with {
    % This is needed for lyrics above a staff
    \override VerticalAxisGroup.staff-affinity = #DOWN
  }
```

```

}
\new Staff = "women" <<
  \new Voice = "sopranos" { \voiceOne << \global \sopMusic >> }
  \new Voice = "altos" { \voiceTwo << \global \altoMusic >> }
>>
\new Lyrics = "altos"
\new Lyrics = "tenors" \with {
  % This is needed for lyrics above a staff
  \override VerticalAxisGroup.staff-affinity = #DOWN
}

\new Staff = "men" <<
  \clef bass
  \new Voice = "tenors" { \voiceOne << \global \tenorMusic >> }
  \new Voice = "basses" { \voiceTwo << \global \bassMusic >> }
>>
\new Lyrics = "basses"
\context Lyrics = "sopranos" \lyricsto "sopranos" \sopWords
\context Lyrics = "altos" \lyricsto "altos" \altoWords
\context Lyrics = "tenors" \lyricsto "tenors" \tenorWords
\context Lyrics = "basses" \lyricsto "basses" \bassWords
>>
\new PianoStaff <<
  \new Staff <<
    \set Staff.printPartCombineTexts = ##f
    \partCombine
    << \global \sopMusic >>
    << \global \altoMusic >>
  >>
  \new Staff <<
    \clef bass
    \set Staff.printPartCombineTexts = ##f
    \partCombine
    << \global \tenorMusic >>
    << \global \bassMusic >>
  >>
>>
>>
>>
}

```



## Vorlage für Vokalensemble mit dem Gesangstext über und unter dem System

In diesem Beispiel werden die Texte mit den Befehlen `alignAboveContext` und `alignBelowContext` über und unter dem System angeordnet.

```
global = {
  \key c \major
  \time 4/4
}

sopMusic = \relative c'' {
  c4 c c8[( b)] c4
}
sopWords = \lyricmode {
  hi hi hi hi
}

altoMusic = \relative c' {
  e4 f d e
}
altoWords = \lyricmode {
  ha ha ha ha
}

tenorMusic = \relative c' {
  g4 a f g
}
tenorWords = \lyricmode {
  hu hu hu hu
}

bassMusic = \relative c {
  c4 c g c
}
```

```

}
bassWords = \lyricmode {
  ho ho ho ho
}

\score {
  \new ChoirStaff <<
    \new Staff = "women" <<
      \new Voice = "sopranos" { \voiceOne << \global \sopMusic >> }
      \new Voice = "altos" { \voiceTwo << \global \altoMusic >> }
    >>
    \new Lyrics \with { alignAboveContext = "women" }
      \lyricsto "sopranos" \sopWords
    \new Lyrics \with { alignBelowContext = "women" }
      \lyricsto "altos" \altoWords
    % we could remove the line about this with the line below, since
    % we want the alto lyrics to be below the alto Voice anyway.
    % \new Lyrics \lyricsto "altos" \altoWords

    \new Staff = "men" <<
      \clef bass
      \new Voice = "tenors" { \voiceOne << \global \tenorMusic >> }
      \new Voice = "basses" { \voiceTwo << \global \bassMusic >> }
    >>
    \new Lyrics \with { alignAboveContext = "men" }
      \lyricsto "tenors" \tenorWords
    \new Lyrics \with { alignBelowContext = "men" }
      \lyricsto "basses" \bassWords
    % again, we could replace the line above this with the line below.
    % \new Lyrics \lyricsto "basses" \bassWords
  >>
}

```



## Sologesang und zweistimmiger Refrain

Diese Vorlage erstellt eine Partitur, die mit Sologesang beginnt und einen Refrain für zwei Stimmen enthält. Sie zeigt auch die Benutzung von Platzhalter-Pausen innerhalb der `\global`-Variable, um Taktwechsel (und andere Elemente, die für alle Stimmen gleich sind) für das gesamte Stück zu definieren.

```
\header { tagline = ##f }
```

```

global = {
  \key g \major

  % verse
  \time 3/4
  s2.*2
  \break

  % refrain
  \time 2/4
  s2*2
  \bar "|."
}

SoloNotes = \relative g' {
  \clef "treble"

  % verse
  g4 g g |
  b4 b b |

  % refrain
  R2*2 |
}

SoloLyrics = \lyricmode {
  One two three |
  four five six |
}

SopranoNotes = \relative c'' {
  \clef "treble"

  % verse
  R2.*2 |

  % refrain
  c4 c |
  g4 g |
}

SopranoLyrics = \lyricmode {
  la la |
  la la |
}

BassNotes = \relative c {
  \clef "bass"

  % verse
  R2.*2 |
}

```

```

% refrain
c4 e |
d4 d |
}

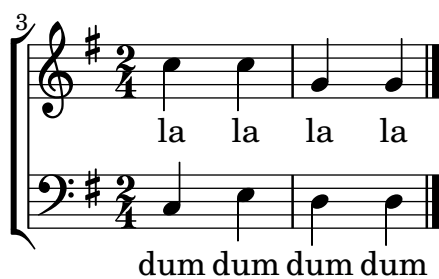
BassLyrics = \lyricmode {
  dum dum |
  dum dum |
}

\score {
  <<
    \new Voice = "SoloVoice" << \global \SoloNotes >>
    \new Lyrics \lyricsto "SoloVoice" \SoloLyrics

    \new ChoirStaff <<
      \new Voice = "SopranoVoice" << \global \SopranoNotes >>
      \new Lyrics \lyricsto "SopranoVoice" \SopranoLyrics

      \new Voice = "BassVoice" << \global \BassNotes >>
      \new Lyrics \lyricsto "BassVoice" \BassLyrics
    >>
  >>
  \layout {
    ragged-right = ##t
    \context { \Staff
      % these lines prevent empty staves from being printed
      \RemoveEmptyStaves
      \override VerticalAxisGroup.remove-first = ##t
    }
  }
}

```





## Chords

Abschnitt “Chord notation” in *Notationsreferenz*

### Adding a figured bass above or below the notes

When writing a figured bass, you can place the figures above or below the bass notes, by defining the `BassFigureAlignmentPositioning.direction` property (exclusively in a `Staff` context). Choices are `#UP` (or `#1`), `#CENTER` (or `#0`) and `#DOWN` (or `#-1`).

This property can be changed as many times as you wish. Use `\once \override` if you don’t want the override to apply to the whole score.

```
bass = {
  \clef bass
  g4 b, c d
  e d8 c d2
}

continuo = \figuremode {
  <_>4 <6>4 <5/>4
  \override Staff.BassFigureAlignmentPositioning.direction = #UP
  %\bassFigureStaffAlignmentUp
  <_+ >4 <6>
  \set Staff.useBassFigureExtenders = ##t
  \override Staff.BassFigureAlignmentPositioning.direction = #DOWN
  %\bassFigureStaffAlignmentDown
  <4>4. <4>8 <_+>4
}

\score {
  <<
    \new Staff = bassStaff \bass
    \context Staff = bassStaff \continuo
  >>
}
```



### Tatkstriche in einen ChordNames-Kontext hinzufügen

Um Taktstriche in einem `ChordNames`-Kontext anzeigen zu lassen, muss der `Bar_engraver` hinzugefügt werden.

```
\new ChordNames \with {
  \override BarLine.bar-extent = #'(-2 . 2)
  \consists "Bar_engraver"
}

\chordmode {
  f1:maj7 f:7 bes:7
}
```

$F^{\Delta}$  |  $F^7$  |  $Bb^7$  |

## Adjusting figured bass alteration glyphs

In figured bass, specially designed glyphs for 6\\, 7\\, and 9\\ are used by default. Similarly, specially designed glyphs for symbols 2\\+, 4\\+, and 5\\+ are used by default if plus signs appear after the number.

To change that, pass an alist to `figuredBassPlusStrokedAlist` and set the glyph in question to #f (or omit it).

```
\figures {
  \set figuredBassPlusDirection = #RIGHT
  <6\\> <7\\> <9\\> r
  <2\\+> <4\\+> <5\\+> r

  \set figuredBassPlusStrokedAlist =
    #'((2 . "figbass.twoplus")
      ;; (4 . "figbass.fourplus")
      ;; (5 . "figbass.fiveplus")
      (6 . "figbass.sixstroked")
      ;; (7 . "figbass.sevenstroked")
      ;; (9 . "figbass.ninestroked")
    )
  <6\\> <7\\> <9\\> r
  <2\\+> <4\\+> <5\\+> r
}
```

6 7 9      2, 4, 5      6 7 9      2, 4, 5

## Akkordsymboltrenner verändern

Der Trenner zwischen unterschiedlichen Teilen eines Akkordsymbols kann beliebiger Text sein.

```
\chords {
  c:7sus4
  \set chordNameSeparator
    = \markup { \typewriter | }
  c:7sus4
}
```

$C^7$  sus4  $C^7$ |sus4

## Changing the chord names to German or semi-German notation

The english naming of chords (default) can be changed to german (`\germanChords` replaces B and Bes with H and B) or semi-german (`\semiGermanChords` replaces B and Bes with H and Bb).

```
scl = \chordmode {
  c1/c | cis/cis
  b1/b | bis/bis | bes/bes
}
```

```
\layout {
  ragged-right = ##t
  \context {
    \ChordNames
    \consists "Instrument_name_engraver"
  }
}
```

```
<<
\new ChordNames {
  \set instrumentName = #"default"
  \scm
}
\new ChordNames {
  \set instrumentName = #"german"
  \germanChords \scm
}
\new ChordNames {
  \set instrumentName = #"semi-german"
  \semiGermanChords \scm
}
\new ChordNames {
  \set instrumentName = #"italian"
  \italianChords \scm
}
\new ChordNames {
  \set instrumentName = #"french"
  \frenchChords \scm
}
\context Voice { \scm }
>>
```

default	C/C	C#/C#	B/B	B#/B#	Bb/Bb
german	C/c	C#/cis	H/h	H#/his	B/b
semi-german	C/c	C#/cis	H/h	H#/his	Bb/b
italian	Do/Do	Do#/Do#	Si/Si	Si#/Si#	Si b/Si b
french	Do/Do	Do#/Do#	Si/Si	Si#/Si#	Si b/Si b



## Positionen von Generalbass-Alterationszeichen verändern

Versetzungszeichen und Pluszeichen können vor oder nach den Ziffern erscheinen, je nach den Einstellungen der `figuredBassAlterationDirection` und `figuredBassPlusDirection`-Eigenschaften.

```
\figures {
  <5\+> <5+ 4\+> <6 4- 2\+> r
```

```

\set figuredBassAlterationDirection = #RIGHT
<5\+> <5+ 4\+> <6 4- 2\+> r
\set figuredBassPlusDirection = #RIGHT
<5\+> <5+ 4\+> <6 4- 2\+> r
\set figuredBassAlterationDirection = #LEFT
<5\+> <5+ 4\+> <6 4- 2\+> r
}

```

```

+5  #5  6      +5  5#  6      5*  5#  6      5*  #5  6
  +4  b4      +4  4b      4*  4*  2b      4*  4*  b4
    +2          +2          2*          2*

```

## Akkordsymbolausnahmen

Die Eigenschaft `chordNameExceptions` kann benutzt werden, um eine Liste an besonderen Notationen für bestimmte Akkorde zu speichern.

```

% modify maj9 and 6(add9)
% Exception music is chords with markups
chExceptionMusic = {
  <c e g b d'>1-\markup { \super "maj9" }
  <c e g a d'>1-\markup { \super "6(add9)" }
}

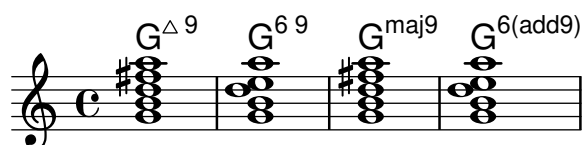
% Convert music to list and prepend to existing exceptions.
chExceptions = #(append
  (sequential-music-to-chord-exceptions chExceptionMusic #t)
  ignatzekExceptions)

theMusic = \chordmode {
  g1:maj9 g1:6.9
  \set chordNameExceptions = #chExceptions
  g1:maj9 g1:6.9
}

\layout {
  ragged-right = ##t
}

<<
  \new ChordNames \theMusic
  \new Voice \theMusic
>>

```



## Akkordbezeichnung maj7

Das Aussehen des großen Septakkords kann mit `majorSevenSymbol` verändert werden.

```

\chords {
  c:7+
  \set majorSevenSymbol = \markup { j7 }
}

```

```
c:7+
}

CΔ Ci7
```

## Chord names alternative

Chord names are generated from a list of pitches. The functions which construct these names can be customised.

Here are shown chords following Ignatzek (pp. 17-18, 1995), used by default since LilyPond 1.7.20, compared with an alternative Jazz chord notation and Harald Banter's (1987) notation. A smaller font is used in the latter case, as these tend to be overly verbose.

This mirrors the mechanism originally used in early LilyPond versions (pre-1.7); not having been properly maintained, however, some features have been lost (mainly chord exception lists) and bugs have been introduced.

```
%%% Legacy chord naming functions (formerly in scm/chord-generic-names.scm)
%%% Copyright (C) 2003--2023 Jan Nieuwenhuizen <janneke@gnu.org>
```

```
#(set-global-staff-size 19.7)

#(define-public (banter-chordnames pitches bass inversion context)
  (old_chord->markup 'banter pitches bass inversion context))

#(define-public (jazz-chordnames pitches bass inversion context)
  (old_chord->markup 'jazz pitches bass inversion context))

#(define (define-translator-property symbol type? description)
  (if (not (and (symbol? symbol)
                (procedure? type?)
                (string? description)))
      (ly:error "error in call of define-translator-property"))
  (if (not (equal? (object-property symbol 'translation-doc) #f))
      (ly:error (G_ "symbol ~S redefined") symbol))

  (set-object-property! symbol 'translation-type? type?)
  (set-object-property! symbol 'translation-doc description)
  symbol)

#(for-each
  (lambda (x)
    (apply define-translator-property x))
  `((chordNameExceptionsFull ,list? "An alist of full chord
exceptions. Contains @code{(@var{chord} . @var{markup})} entries.")
    (chordNameExceptionsPartial ,list? "An alist of partial chord
exceptions. Contains @code{(@var{chord} . (@var{prefix-markup}
@var{suffix-markup}))} entries.")))

#(define-public (old_chord->markup
  style pitches bass inversion context)
  "Entry point for @code{Chord_name_engraver}.
@var{pitches}, @var{bass}, and @var{inversion} are lily pitches."
  (define (default-note-namer pitch)
```

```

(note-name->markup pitch #f))

(define (markup-or-empty-markup markup)
  "Return MARKUP if markup, else empty-markup"
  (if (markup? markup) markup empty-markup))

(define (accidental->markup alteration)
  "Return accidental markup for ALTERATION."
  (if (= alteration 0)
      (make-line-markup (list empty-markup))
      (conditional-kern-before
       (alteration->text-accidental-markup alteration)
       (= alteration FLAT) 0.094725))))

(define (list-minus a b)
  "Return list of elements in A that are not in B."
  (lset-difference eq? a b))

(define (markup-join markups sep)
  "Return line-markup of MARKUPS, joining them with markup SEP"
  (if (pair? markups)
      (make-line-markup (list-insert-separator markups sep))
      empty-markup))

(define (conditional-kern-before markup bool amount)
  "Add AMOUNT of space before MARKUP if BOOL is true."
  (if bool
      (make-line-markup
       (list (make-hspace-markup amount)
             markup))
      markup))

(define (step-nr pitch)
  (let* ((pitch-nr (+ (* 7 (ly:pitch-octave pitch))
                     (ly:pitch-notename pitch)))
        (root-nr (+ (* 7 (ly:pitch-octave (car pitches)))
                   (ly:pitch-notename (car pitches)))))
    (+ 1 (- pitch-nr root-nr))))

(define (next-third pitch)
  (+ pitch
     (ly:make-pitch 0 2 (if (or (= (step-nr pitch) 3)
                                (= (step-nr pitch) 5))
                           FLAT 0))))

(define (step-alteration pitch)
  (let* ((normalized-pitch (- pitch (car pitches)))
        (alteration (ly:pitch-alteration normalized-pitch)))
    (if (= (step-nr pitch) 7) (+ alteration SEMI-TONE) alteration)))

(define (pitch-unalter pitch)
  (let ((alteration (step-alteration pitch)))

```

```

    (if (= alteration 0)
        pitch
        (ly:make-pitch (ly:pitch-octave pitch) (ly:pitch-notename pitch)
            (- (ly:pitch-alteration pitch) alteration))))

(define (step-even-or-altered? pitch)
  (let ((nr (step-nr pitch)))
    (if (!= (modulo nr 2) 0)
        (!= (step-alteration pitch) 0)
        #t)))

(define (step->markup-plusminus pitch)
  (let ((alt (step-alteration pitch)))
    (make-line-markup
      (list
        (number->string (step-nr pitch))
        (cond
          ((= alt DOUBLE-FLAT) "--")
          ((= alt FLAT) "-")
          ((= alt NATURAL) "")
          ((= alt SHARP) "+")
          ((= alt DOUBLE-SHARP) "++"))))))

(define (step->markup-accidental pitch)
  (make-line-markup
    (list (accidental->markup (step-alteration pitch))
      (make-simple-markup (number->string (step-nr pitch))))))

(define (step->markup-ignatzek pitch)
  (make-line-markup
    (if (and (= (step-nr pitch) 7)
      (= (step-alteration pitch) 1))
      (list (ly:context-property context 'majorSevenSymbol))
      (list (accidental->markup (step-alteration pitch))
        (make-simple-markup (number->string (step-nr pitch))))))

;; tja, kennok
(define (make-sub->markup step->markup)
  (lambda (pitch)
    (make-line-markup (list (make-simple-markup "no")
      (step->markup pitch)))))

(define (step-based-sub->markup step->markup pitch)
  (make-line-markup (list (make-simple-markup "no") (step->markup pitch))))

(define (get-full-list pitch)
  (if (<= (step-nr pitch) (step-nr (last pitches)))
      (cons pitch (get-full-list (next-third pitch)))
      '()))

(define (get-consecutive nr pitches)
  (if (pair? pitches)

```

```

(let* ((pitch-nr (step-nr (car pitches)))
      (next-nr (if (!= (modulo pitch-nr 2) 0) (+ pitch-nr 2) nr)))
  (if (<= pitch-nr nr)
      (cons (car pitches) (get-consecutive next-nr (cdr pitches)))
      '()))
'()))

;;; FIXME -- exceptions no longer work. -vv

(define (full-match exceptions)
  (if (pair? exceptions)
      (let* ((e (car exceptions))
            (e-pitches (car e)))
        (if (equal? e-pitches pitches)
            e
            (full-match (cdr exceptions)))))
      #f))

(define (partial-match exceptions)
  (if (pair? exceptions)
      (let* ((e (car exceptions))
            (e-pitches (car e)))
        (if (equal? e-pitches (take pitches (length e-pitches)))
            e
            (partial-match (cdr exceptions)))))
      #f))

;;; FIXME: exceptions don't work anyway.
(if #f (begin
  (write-me "pitches: " pitches))
  (let* ((full-exceptions
    (ly:context-property context 'chordNameExceptionsFull))
    (full-exception (full-match full-exceptions))
    (full-markup (if full-exception (cadr full-exception) '()))
    (partial-exceptions
    (ly:context-property context 'chordNameExceptionsPartial))
    (partial-exception (partial-match partial-exceptions))
    (partial-pitches (if partial-exception (car partial-exception) '()))
    (partial-markup-prefix
    (if partial-exception (markup-or-empty-markup
      (cadr partial-exception)) empty-markup))
    (partial-markup-suffix
    (if (and partial-exception (pair? (caddr partial-exception)))
      (markup-or-empty-markup (caddr partial-exception)) empty-markup))
    (root (car pitches))
    (full (get-full-list root))
    ;; kludge alert: replace partial matched lower part of all with
    ;; 'normal' pitches from full
    ;; (all pitches)
    (all (append (take full (length partial-pitches))
      (drop pitches (length partial-pitches)))))

```



```

(highest (last all))
(missing (list-minus full (map pitch-unalter all)))
(consecutive (get-consecutive 1 all))
(rest (list-minus all consecutive))
(altered (filter step-even-or-altered? all))
(cons-alt (filter step-even-or-altered? consecutive))
(base (list-minus consecutive altered)))

(if #f (begin
  (write-me "full:" full)
  ;; (write-me "partial-pitches:" partial-pitches)
  (write-me "full-markup:" full-markup)
  (write-me "partial-markup-perfix:" partial-markup-prefix)
  (write-me "partial-markup-suffix:" partial-markup-suffix)
  (write-me "all:" all)
  (write-me "altered:" altered)
  (write-me "missing:" missing)
  (write-me "consecutive:" consecutive)
  (write-me "rest:" rest)
  (write-me "base:" base)))

(case style
  ((banter)
   ;; root
   ;; + steps:altered + (highest all -- if not altered)
   ;; + subs:missing

  (let* ((root->markup default-note-namer)
         (step->markup step->markup-plusminus)
         (sub->markup (lambda (x)
                        (step-based-sub->markup step->markup x)))
         (sep (make-simple-markup "/")))

    (if
      (pair? full-markup)
      (make-line-markup (list (root->markup root) full-markup))

      (make-line-markup
       (list
        (root->markup root)
        partial-markup-prefix
        (make-super-markup
         (markup-join
          (append
           (map step->markup
                (append altered
                        (if (and (> (step-nr highest) 5)
                                (not
                                 (step-even-or-altered? highest)))
                          (list highest) '()))))
           (list partial-markup-suffix)

```



%%%

%%%

```

chs = \transpose c' c' {
  <c e g>1
  <c es g> % m = minor triad
  <c e gis>
  <c es ges> \break
  <c e g bes>
  <c es g bes>
  <c e g b> % triangle = maj
  <c es ges beses>
  <c es ges b> \break
  <c e gis bes>
  <c es g b>
  <c e gis b>
  <c es ges bes> \break
  <c e g a> % 6 = major triad with added sixth
  <c es g a> % m6 = minor triad with added sixth
  <c e g bes d'>
  <c es g bes d'> \break
  <c es g bes d' f' a' >
  <c es g bes d' f' >
  <c es ges bes d' >
  <c e g bes des' > \break
  <c e g bes dis'>
  <c e g bes d' f'>
  <c e g bes d' fis'>
  <c e g bes d' f' a'> \break
  <c e g bes d' fis' as'>
  <c e gis bes dis'>
  <c e g bes dis' fis'>
  <c e g bes d' f' as'> \break
  <c e g bes des' f' as'>
  <c e g bes d' fis'>
  <c e g b d'>
  <c e g bes d' f' as'> \break
  <c e g bes des' f' as'>
  <c e g bes des' f' a'>
  <c e g b d'>
  <c e g b d' f' a'> \break
  <c e g b d' fis'>
  <c e g bes des' f' ' a'>
  <c f g>
  <c f g bes> \break
  <c f g bes d'>
  <c e g d'> % add9
  <c es g f'>
  <c e g b fis'> % Lydian
  <c e g bes des' ees' fis' aes'> % altered chord
}

```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% alternate Jazz notation
```

```
efullmusicJazzAlt = {
  <c e gis>1-\markup { "+" }
  <c e g b>-\markup {
    \normal-size-super
    % \override #'(font-family . math) "N"
    \override #'(font-family . math) "M"
  }
  %%c:3.5.7 = \markup { \override #'(font-family . math) "M" }
  %%c:3.5.7 = \markup { \normal-size-super "maj7" }

  <c es ges>-\markup { \super "o" } % should be $\circ$ ?
  <c es ges bes>-\markup { \super \combine "o" "/" }
  <c es ges beses>-\markup { \super "o7" }
}
```

```
efullJazzAlt = #(sequential-music-to-chord-exceptions efullmusicJazzAlt #f)
```

```
epartialmusicJazzAlt = {
  <c d>1-\markup { \normal-size-super "2" }
  <c es>-\markup { "m" }
  <c f>-\markup { \normal-size-super "sus4" }
  <c g>-\markup { \normal-size-super "5" }
  %% TODO, partial exceptions
  <c es f>-\markup { "m" }-\markup { \normal-size-super "sus4" }
  <c d es>-\markup { "m" }-\markup { \normal-size-super "sus2" }
}
```

```
epartialJazzAlt = #(sequential-music-to-chord-exceptions epartialmusicJazzAlt #f)
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
\score {
  <<
    \new ChordNames {
      %% Already set by default:
      %\set chordNameFunction = #ignatzek-chord-names
      \set instrumentName = "Ignatzek"
      \set shortInstrumentName = "Def"
      \chs
    }

    \new ChordNames {
      \set chordNameFunction = #jazz-chordnames
      \set majorSevenSymbol = \whiteTriangleMarkup
      \set chordNameSeparator = "/"
      \set chordNameExceptionsFull = \efullJazzAlt
      \set chordNameExceptionsPartial = \epartialJazzAlt
      \set instrumentName = "Alternative"
    }
  }
}
```

```

\set shortInstrumentName = "Alt"
\chs
}

%% This is the Banter (1987) style. It gives exceedingly
%% verbose (wide) names, making the output file take up to 4 pages.

\new ChordNames {
  \set chordNameFunction = #banter-chordnames
  \override ChordName.font-size = -3
  \set instrumentName = "Banter"
  \set shortInstrumentName = "Ban"
  \chs
}

\new Staff \transpose c c' { \chs }
>>
\layout {
  #(layout-set-staff-size 16)
  system-system-spacing.basic-distance = 0
  \context {
    \ChordNames
    \consists "Instrument_name_engraver"
  }
  \context {
    \Score
    \remove "Bar_number_engraver"
  }
}
}

```

Ignatzek	C	Cm	C+	C <sup>o</sup>
Alternative	C	C <sup>b3</sup>	C <sup>#5</sup>	C <sup>b3 b5</sup>
Banter	C <sup>/no3/no5</sup>	C <sup>3-/no3/no5</sup>	C <sup>5+/no3/no5</sup>	C <sup>3-/5-/no3/no5</sup>
Def	C <sup>7</sup>	Cm <sup>7</sup>	C <sup>Δ</sup>	C <sup>o7</sup>
Alt	C <sup>7</sup>	C <sup>7 b3</sup>	C <sup>#7</sup>	C <sup>b3 b5 b7</sup>
Ban	C <sup>7/no3/no5/no7</sup>	C <sup>3-/7/no3/no5/no7</sup>	C <sup>7+/no3/no5/no7</sup>	C <sup>3-/5-/7-/no3/no5/no7</sup>
Def	C <sup>7 #5</sup>	Cm <sup>Δ</sup>	C <sup>Δ #5</sup>	C <sup>o</sup>
Alt	C <sup>7 #5</sup>	C <sup>b3 #7</sup>	C <sup>#5 #7</sup>	C <sup>7 b3 b5</sup>
Ban	C <sup>5+/7/no3/no5/no7</sup>	C <sup>3-/7+/no3/no5/no7</sup>	C <sup>5+/7+/no3/no5/no7</sup>	C <sup>3-/5-/7-/no3/no5/no7</sup>
Def	C <sup>6</sup>	Cm <sup>6</sup>	C <sup>9</sup>	Cm <sup>9</sup>
Alt	C <sup>6</sup>	C <sup>b3 6</sup>	C <sup>9</sup>	C <sup>9 b3</sup>
Ban	C <sup>6/no3/no5</sup>	C <sup>3-/6/no3/no5</sup>	C <sup>9/no3/no5/no7/no9</sup>	C <sup>3-/9/no3/no5/no7/no9</sup>

Def	$Cm^{13}$	$Cm^{11}$	$Cm^7 \flat 5^9$	$C^7 \flat 9$
Alt	$C^{13} \flat 3$	$C^{11} \flat 3$	$C^9 \flat 3 \flat 5$	$C^7 \flat 9$
Ban	$C^{3-/13//no3/no5/no7/no9/no11+/no13+}$	$C^{3-/11//no3/no5/no7/no9/no11+}$	$C^{3-/5-/9//no3/no5/no7/no9}$	$C^{9-/no3/no5/no7/no9}$
Def	$C^7 \sharp 9$	$C^{11}$	$C^7 \sharp 11$	$C^{13}$
Alt	$C^7 \sharp 9$	$C^{11}$	$C^9 \sharp 11$	$C^{13}$
Ban	$C^{9+/no3/no5/no7/no9}$	$C^{11//no3/no5/no7/no9/no11+}$	$C^{11+/no3/no5/no7/no9/no11+}$	$C^{13//no3/no5/no7/no9/no11+/no13+}$
Def	$C^7 \sharp 11 \flat 13$	$C^7 \sharp 5^9$	$C^7 \sharp 9 \sharp 11$	$C^7 \flat 13$
Alt	$C^9 \sharp 11 \flat 13$	$C^7 \sharp 5^9$	$C^7 \sharp 9 \sharp 11$	$C^{11} \flat 13$
Ban	$C^{11+/13-/no3/no5/no7/no9/no11+/no13+}$	$C^{5+/9+/no3/no5/no7/no9}$	$C^{9+/11+/no3/no5/no7/no9/no11+}$	$C^{13-/no3/no5/no7/no9/no11+/no13+}$
Def	$C^7 \flat 9 \flat 13$	$C^7 \sharp 11$	$C^{\Delta 9}$	$C^7 \flat 13$
Alt	$C^{11} \flat 9 \flat 13$	$C^9 \sharp 11$	$C^9 \sharp 7$	$C^{11} \flat 13$
Ban	$C^{9-/13-/no3/no5/no7/no9/no11+/no13+}$	$C^{11+/no3/no5/no7/no9/no11+}$	$C^{7+/9//no3/no5/no7/no9}$	$C^{13-/no3/no5/no7/no9/no11+/no13+}$
Def	$C^7 \flat 9 \flat 13$	$C^7 \flat 9 13$	$C^{\Delta 9}$	$C^{\Delta 13}$
Alt	$C^{11} \flat 9 \flat 13$	$C^{13} \flat 9$	$C^9 \sharp 7$	$C^{13} \sharp 7$
Ban	$C^{9-/13-/no3/no5/no7/no9/no11+/no13+}$	$C^{9-/13//no3/no5/no7/no9/no11+/no13+}$	$C^{7+/9//no3/no5/no7/no9}$	$C^{7+/13//no3/no5/no7/no9/no11+/no13+}$
Def	$C^{\Delta \sharp 11}$	$C^7 \flat 9 13$	$C^{sus4}$	$C^7 sus4$
Alt	$C^9 \sharp 7 \sharp 11$	$C^{13} \flat 9$	$C^{add4\ 5}$	$C^{add4\ 5\ 7}$
Ban	$C^{7+/11+/no3/no5/no7/no9/no11+}$	$C^{9-/13//no3/no5/no7/no9/no11+/no13+}$	$C^{4//no3/no5}$	$C^{4//no3/no5/no7}$
Def	$C^9 sus4$	$C^9$	$Cm^{11}$	$C^{lyd}$
Alt	$C^{add4\ 5\ 7\ 9}$	$C^{add9}$	$C^{\flat 3} add11$	$C^{\sharp 7} add\sharp 11$
Ban	$C^{4/9//no3/no5/no7/no9}$	$C^{9//no3/no5/no7/no9}$	$C^{3-/11//no3/no5/no7/no9/no11+}$	$C^{7+/11+/no3/no5/no7/no9/no11+}$
				$C^{alt}$
				$C^7 \flat 9 \flat 10 \sharp 11 \flat 13$
				$C^{9-/10-/11+/13-/no3/no5/no7/no9/no11+/no13+}$

## Chords with stretched fingering for FretBoards and TabVoice

Sometimes chords with a stretched fingering are required. If not otherwise specified the context-property `maximumFretStretch` is set to 4, though. Resulting in a warning about "No string for pitch ..." and the note is omitted. You may set `maximumFretStretch` to an appropriate value or explicitly assign string-numbers to all notes of a chord.

```
%% The code below will print two warnings, which may be omitted by uncommenting:
%#(for-each (lambda (x) (ly:expect-warning "No string for pitch")) (iota 2))
```

```

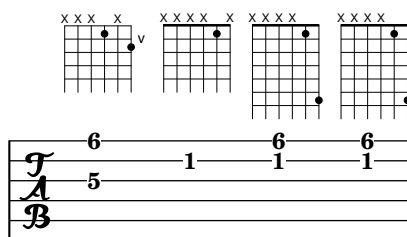
mus = {
  <c' bes'>
  <c'\2 bes'>
  \set maximumFretStretch = 5
  <c' bes'>
  <c'\2 bes'\1>
}

```

```

<<
  \new FretBoards \mus
  \new TabVoice \mus
>>

```



## Clusters

Clusters are a device to denote that a complete range of notes is to be played.

```

fragment = \relative c' {
  c4 f <e d'>4
  <g a>8 <e a> a4 c2 <d b>4
  e2 c
}

<<
  \new Staff \fragment
  \new Staff \makeClusters \fragment
>>

```



## Position von Fingersatz in Akkorden kontrollieren

Die Position von Fingersatzzahlen kann exakt kontrolliert werden.

```

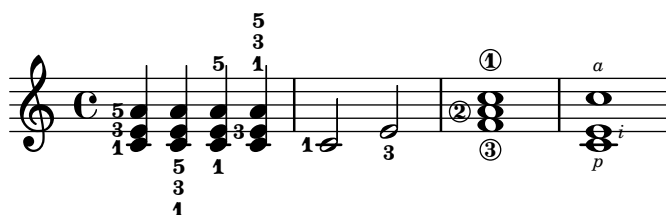
\relative c' {
  \set fingeringOrientations = #'(left)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(down)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(down right up)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(up)

```

```

<c-1 e-3 a-5>4
\set fingeringOrientations = #'(left)
<c-1>2
\set fingeringOrientations = #'(down)
<e-3>2
\set stringNumberOrientations = #'(up left down)
<f\3 a\2 c\1>1
\set strokeFingerOrientations = #'(down right up)
<c\rightHandFinger 1 e\rightHandFinger 2 c'\rightHandFinger 4 >
}

```



## Cross-staff chords - beaming problems workaround

Sometimes it is better to use stems from the upper staff for creating cross-staff chords, because no problems with automatic beam collision avoidance then arise. If the stems from the lower staff were used in the following example, it would be necessary to change the automatic beam collision avoidance settings so that it doesn't detect collisions between staves using `\override Staff.Beam.collision-voice-only = ##t`

```

\new PianoStaff <<
  \new Staff = up
  \relative c' {
    <<
      { r4
        \override Stem.cross-staff = ##t
        \override Stem.length = #19 % this is in half-spaces,
          % so it makes stems 9.5 staffspaces long
        \override Stem.Y-offset = #-6 % stems are normally lengthened
          % upwards, so here we must lower the stem by the amount
          % equal to the lengthening - in this case (19 - 7) / 2
          % (7 is default stem length)
        e e e }
      { s4
        \change Staff = "bottom"
        \override NoteColumn.ignore-collision = ##t
        c, c c
      }
    >>
  }
>>

\new Staff = bottom
\relative c' {
  \clef bass
  \voiceOne
  g8 a g a g a g a
}
>>

```





## Customizing the chord grid style

Custom divisions of chord squares can be defined through the `measure-division-lines-alist` and `measure-division-chord-placement-alist` properties of `ChordSquare`. These are both alists. Their keys are measure divisions, namely lists which give the fraction of the measure that each chord (or rest, or skip) represents. More precisely, a measure division alist is made of positive, exact numbers adding up to 1, for example: `'(1/2 1/4 1/4)`. The exactness requirement means that, e.g., `1/2` is valid but not `0.5`.

The values in `measure-division-lines-alist` are lists of lines, which are represented as `(x1 y1 x2 y2)`. The line starts at the point `(x1 . y1)` and ends at `(x2 . y2)`. Coordinates are expressed in the `[-1, 1]` scale relative to the extent of the square.

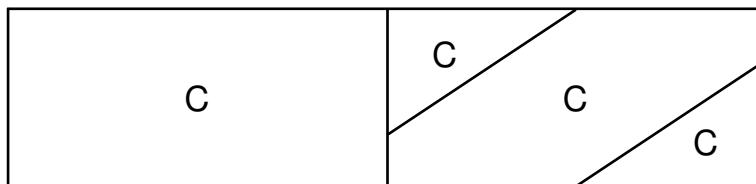
The values in `measure-division-chord-placement-alist` are lists of `(x . y)` pairs giving the placement of the respective chords.

This example defines a peculiar chord grid style that has a rule for measures divided in three equal parts.

```
\paper {
  line-width = 10\cm
  ragged-right = ##f
}

\new ChordGrid \with {
  \override ChordSquare.measure-division-lines-alist =
    #'(((1) . ()))
    ((1/3 1/3 1/3) . ((-1 -0.4 0 1) (0 -1 1 0.4)))
  \override ChordSquare.measure-division-chord-placement-alist =
    #'(((1) . ((0 . 0)))
    ((1/3 1/3 1/3) . ((-0.7 . 0.5) (0 . 0) (0.7 . -0.5))))
}

\chordmode {
  \time 3/4
  c2.
  c4 c4 c4
}
```



## Customizing the no-chord symbol

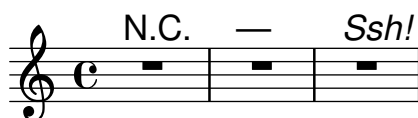
By default, rests in a `ChordNames` context cause the „N.C.“ symbol to be printed. This markup can be customized.

<<

```

\chords {
  R1
  \set noChordSymbol = "----"
  R1
  \set noChordSymbol = \markup \italic "Ssh!"
  R1
}
{
  R1*3
}
>>

```



## Displaying complex chords

Here is a way to display a chord where the same note is played twice with different accidentals.

```

fixA = {
  \once \override Stem.length = #11
}

fixB = {
  \once \override NoteHead.X-offset = #1.7
  \once \override Stem.length = #7
  \once \override Stem.rotation = #'(45 0 0)
  \once \override Stem.extra-offset = #'(-0.1 . -0.2)
  \once \override Flag.style = #'no-flag
  \once \override Accidental.extra-offset = #'(4 . -.1)
}

\relative c' {
  << { \fixA <b d!>8 } \ { \voiceThree \fixB dis } >> s
}

```



## Manually break figured bass extenders for only some numbers

Figured bass often uses extenders to indicate continuation of the corresponding step. However, in this case Lilypond is in greedy-mode and uses extenders whenever possible. To break individual extenders, one can simply use a modifier \! to a number, which breaks any extender attributed to that number right before the number.

```

bassfigures = \figuremode {
  \set useBassFigureExtenders = ##t
  <6 4>4 <6 4\!> <6 4\!> <6 4\!> | <6\! 4\!> <6 4> <6 4\!> <6 4>
}

```

```
<<
  \new Staff \relative c'' { c1 c1 }
  \new FiguredBass \bassfigures
>>
```



## Print ChordNames with same root and different bass as slash and bass-note

To print subsequent ChordNames only differing in its bass note as slash and bass note use the here defined engraver. The behaviour may be controlled in detail by the chordChanges context property.

```
#(define Bass_changes_equal_root_engraver
  (lambda (ctx)
    "For sequential @code{ChordNames} with same root, but different bass, the root
    markup is dropped: D D/C D/B -> D /C /B
    The behaviour may be controlled by setting the @code{chordChanges}
    context-property."
    (let ((chord-pitches '())
          (last-chord-pitches '())
          (bass-pitch #f))
      (make-engraver
        ((initialize this-engraver)
         (let ((chord-note-namer (ly:context-property ctx 'chordNoteNamer)))
           ;; Set 'chordNoteNamer, respect user setting if already done
           (ly:context-set-property! ctx 'chordNoteNamer
                                     (if (procedure? chord-note-namer)
                                         chord-note-namer
                                         note-name->markup))))
        (listeners
         ((note-event this-engraver event)
          (let* ((pitch (ly:event-property event 'pitch))
                 (pitch-name (ly:pitch-notename pitch))
                 (pitch-alt (ly:pitch-alteration pitch))
                 (bass (ly:event-property event 'bass #f))
                 (inversion (ly:event-property event 'inversion #f)))
            ;; Collect notes of the chord
            ;; - to compare inversed chords we need to collect the bass note
            ;;   as usual member of the chord, whereas an added bass must be
            ;;   treated separate from the usual chord-notes
            ;; - notes are stored as pairs containing their
            ;;   pitch-name (an integer), i.e. disregarding their octave and
            ;;   their alteration
            (cond (bass (set! bass-pitch pitch))
                  (inversion
                   (set! bass-pitch pitch)
                   (set! chord-pitches
                         (cons (cons pitch-name pitch-alt) chord-pitches))))
```

```

        (else
          (set! chord-pitches
            (cons (cons pitch-name pitch-alt) chord-pitches))))))
(acknowledgers
  ((chord-name-interface this-engraver grob source-engraver)
    (let ((chord-changes (ly:context-property ctx 'chordChanges #f)))
      ;; If subsequent chords are equal apart from their bass,
      ;; reset the 'text-property.
      ;; Equality is done by comparing the sorted lists of this chord's
      ;; elements and the previous chord. Sorting is needed because
      ;; inverted chords may have a different order of pitches.
      ;; `chord-changes' needs to be true
      (if (and bass-pitch
                chord-changes
                (equal?
                 (sort chord-pitches car<)
                 (sort last-chord-pitches car<)))
          (ly:grob-set-property! grob 'text
            (make-line-markup
              (list
                (ly:context-property ctx 'slashChordSeparator)
                ((ly:context-property ctx 'chordNoteNamer)
                 bass-pitch
                 (ly:context-property ctx 'chordNameLowercaseMinor))))))
          (set! last-chord-pitches chord-pitches)
          (set! chord-pitches '())
          (set! bass-pitch #f))))
  ((finalize this-engraver)
    (set! last-chord-pitches '()))))

myChords = \chordmode {
  %\germanChords

  \set chordChanges = ##t
  d2:m d:m/cis

  d:m/c
  \set chordChanges = ##f
  d:m/b

  e1:7
  \set chordChanges = ##t
  e
  \break
  \once \set chordChanges = ##f
  e1/f
  e2/gis e/+gis e e:m/f d:m d:m/cis d:m/c
  \set chordChanges = ##f
  d:m/b
}

<<

```

```

\new ChordNames
  \with { \consists #Bass_changes_equal_root_engraver }
  \myChords
\new Staff \myChords
>>

```

## Akkordsymbole bei Wechsel anzeigen

Akkordsymbole können so eingestellt werden, dass sie nur zu Beginn der Zeile und bei Akkordwechseln angezeigt werden.

```

harmonies = \chordmode {
  c1:m c:m \break c:m c:m d
}

```

```

<<
\new ChordNames {
  \set chordChanges = ##t
  \harmonies
}
\new Staff {
  \relative c' { \harmonies }
}
>>

```

## Ein einfaches Liedblatt

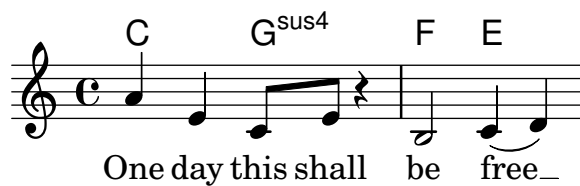
Ein Liedblatt besteht aus Akkordbezeichnungen, einer Melodie und dem Liedtext:

```

<<
\chords { c2 g:sus4 f e }
\new Staff \relative c'' {
  a4 e c8 e r4
  b2 c4( d)
}
\addlyrics { One day this shall be free __ }

```

&gt;&gt;



## Vorlage für eine Notenzeile mit Noten, Text und Akkorden

Mit diesem Beispiel können Sie einen Song mit Melodie, Text und Akkorden schreiben.

```
melody = \relative c' {
  \clef treble
  \key c \major
  \time 4/4

  a4 b c d
}

text = \lyricmode {
  Aaa Bee Cee Dee
}

harmonies = \chordmode {
  a2 c
}

\score {
  <<
    \new ChordNames {
      \set chordChanges = ##t
      \harmonies
    }
    \new Voice = "one" { \autoBeamOff \melody }
    \new Lyrics \lyricsto "one" \text
  >>
  \layout { }
  \midi { }
}
```



## Single staff template with notes, lyrics, chords and frets

Here is a simple lead sheet template with melody, lyrics, chords and fret diagrams.

```
verseI = \lyricmode {
  \set stanza = #"1."
  This is the first verse
}
```

```

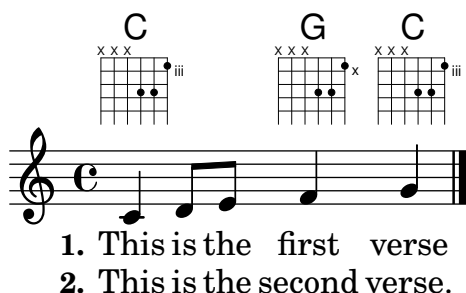
verseII = \lyricmode {
  \set stanza = #"2."
  This is the second verse.
}

theChords = \chordmode {
  % insert chords for chordnames and fretboards here
  c2 g4 c
}

staffMelody = \relative c' {
  \key c \major
  \clef treble
  % Type notes for melody here
  c4 d8 e f4 g
  \bar "|"
}

\score {
  <<
    \context ChordNames { \theChords }
    \context FretBoards { \theChords }
    \new Staff {
      \context Voice = "voiceMelody" { \staffMelody }
    }
    \new Lyrics = "lyricsI" {
      \lyricsto "voiceMelody" \verseI
    }
    \new Lyrics = "lyricsII" {
      \lyricsto "voiceMelody" \verseII
    }
  >>
  \layout { }
  \midi { }
}

```



1. This is the first verse  
2. This is the second verse.

## Vorlage für eine Notenzeile mit Akkorden

Wollen Sie ein Liedblatt mit Melodie und Akkorden schreiben? Hier ist das richtige Beispiel für Sie!

```

melody = \relative c' {
  \clef treble

```

```

\key c \major
\time 4/4

f4 e8[ c] d4 g
a2 ~ a
}

harmonies = \chordmode {
  c4:m f:min7 g:maj c:aug
  d2:dim b4:5 e:sus
}

\score {
  <<
    \new ChordNames {
      \set chordChanges = ##t
      \harmonies
    }
    \new Staff \melody
  >>
  \layout{ }
  \midi { }
}

```



## Vertically centering paired figured bass extenders

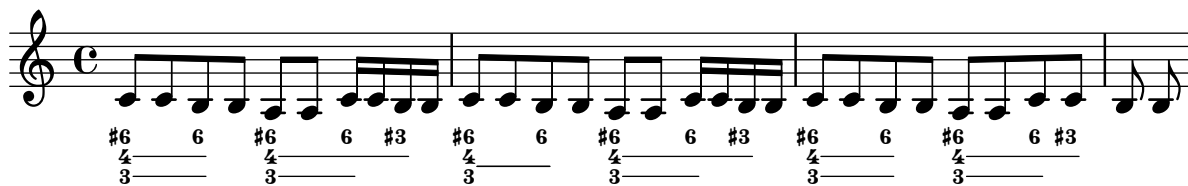
Where figured bass extender lines are being used by setting `useBassFigureExtenders` to true, pairs of congruent figured bass extender lines are vertically centered if `figuredBassCenterContinuations` is set to true.

```

<<
\relative c' {
  c8 c b b a a c16 c b b
  c8 c b b a a c16 c b b
  c8 c b b a a c c b b
}
\figures {
  \set useBassFigureExtenders = ##t
  <6+ 4 3>4 <6 4 3>8 r
  <6+ 4 3>4 <6 4 3>8 <4 3+>16 r
  \set figuredBassCenterContinuations = ##t
  <6+ 4 3>4 <6 4 3>8 r
  <6+ 4 3>4 <6 4 3>8 <4 3+>16 r
  \set figuredBassCenterContinuations = ##f
  <6+ 4 3>4 <6 4 3>8 r
  <6+ 4 3>4 <6 4 3>8 <4 3+>8
}
>>

```

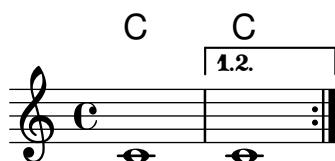




## Wiederholungs-(Volta-)Klammern unterhalb der Akkordsymbole

Indem man den `Volta_engraver` zu dem entsprechenden Notensystem hinzufügt, können Wiederholungsklammern unterhalb der Akkorde gesetzt werden.

```
\score {
  <<
    \chords {
      c1
      c1
    }
    \new Staff \with {
      \consists "Volta_engraver"
    }
    {
      \repeat volta 2 { c'1 }
      \alternative { c' }
    }
  >>
  \layout {
    \context {
      \Score
      \remove "Volta_engraver"
    }
  }
}
```



## Keyboards

Abschnitt “Keyboard and other multi-staff instruments” in *Notationsreferenz*

### Symbole für Akkordeon-Diskantregister

Diskantregister für Akkordeon können mit `\markup` dargestellt werden. Die vertikale Position der einzelnen Elemente werden mit `\raise` angepasst.

```
discant = \markup {
  \musicglyph "accordion.discant"
}
dot = \markup {
  \musicglyph "accordion.dot"
}

\layout { ragged-right = ##t }

% 16 voets register
accBasson = ^\markup {
  \combine
  \discant
  \translate-scaled #'(0 . 0.5) \dot
}

% een korig 8 en 16 voets register
accBandon = ^\markup {
  \combine
  \discant
  \combine
  \translate-scaled #'(0 . 0.5) \dot
  \translate-scaled #'(0 . 1.5) \dot
}

accVCello = ^\markup {
  \combine
  \discant
  \combine
  \translate-scaled #'(0 . 0.5) \dot
  \combine
  \translate-scaled #'(0 . 1.5) \dot
  \translate-scaled #'(1 . 1.5) \dot
}

% 4-8-16 voets register
accHarmon = ^\markup {
  \combine
  \discant
  \combine
  \translate-scaled #'(0 . 0.5) \dot
  \combine
  \translate-scaled #'(0 . 1.5) \dot
  \translate-scaled #'(0 . 2.5) \dot
}
```

```

}

accTrombon = ^\markup {
  \combine
  \discant
  \combine
    \translate-scaled #'(0 . 0.5) \dot
  \combine
    \translate-scaled #'(0 . 1.5) \dot
  \combine
    \translate-scaled #'(1 . 1.5) \dot
    \translate-scaled #'(-1 . 1.5) \dot
}

% eenkorig 4 en 16 voets register
accOrgan = ^\markup {
  \combine
  \discant
  \combine
    \translate-scaled #'(0 . 0.5) \dot
    \translate-scaled #'(0 . 2.5) \dot
}

accMaster = ^\markup {
  \combine
  \discant
  \combine
    \translate-scaled #'(0 . 0.5) \dot
  \combine
    \translate-scaled #'(0 . 1.5) \dot
  \combine
    \translate-scaled #'(1 . 1.5) \dot
  \combine
    \translate-scaled #'(-1 . 1.5) \dot
    \translate-scaled #'(0 . 2.5) \dot
}

accAccord = ^\markup {
  \combine
  \discant
  \combine
    \translate-scaled #'(0 . 1.5) \dot
  \combine
    \translate-scaled #'(1 . 1.5) \dot
  \combine
    \translate-scaled #'(-1 . 1.5) \dot
    \translate-scaled #'(0 . 2.5) \dot
}

accMusette = ^\markup {
  \combine
  \discant

```

```

    \combine
    \translate-scaled #'(0 . 1.5) \dot
    \combine
    \translate-scaled #'(1 . 1.5) \dot
    \translate-scaled #'(-1 . 1.5) \dot
}

accCeleste = ^\markup {
  \combine
  \discant
  \combine
  \translate-scaled #'(0 . 1.5) \dot
  \translate-scaled #'(-1 . 1.5) \dot
}

accOboe = ^\markup {
  \combine
  \discant
  \combine
  \translate-scaled #'(0 . 1.5) \dot
  \translate-scaled #'(0 . 2.5) \dot
}

accClarin = ^\markup {
  \combine
  \discant
  \translate-scaled #'(0 . 1.5) \dot
}

accPiccolo = ^\markup {
  \combine
  \discant
  \translate-scaled #'(0 . 2.5) \dot
}

accViolin = ^\markup {
  \combine
  \discant
  \combine
  \translate-scaled #'(0 . 1.5) \dot
  \combine
  \translate-scaled #'(1 . 1.5) \dot
  \translate-scaled #'(0 . 2.5) \dot
}

\relative c' {
  c4 d\accBasson e f
  c4 d\accBandon e f
  c4 d\accVCello e f
  c4 d\accHarmon e f
  c4 d\accTrombon e f
  \break

```

```

c4 d\accOrgan e f
c4 d\accMaster e f
c4 d\accAccord e f
c4 d\accMusette e f
c4 d\accCeleste e f
\break
c4 d\accOboe e f
c4 d\accClarin e f
c4 d\accPiccolo e f
c4 d\accViolin e f
}

```

## Accordion register symbols

Accordion register symbols are available as `\markup` as well as as standalone music events (as register changes tend to occur between actual music events). Bass registers are not overly standardized. The available commands can be found in 'Discant symbols' in the Notation Reference.

`#(use-modules (lily accreg))`

```

\new PianoStaff
<<
  \new Staff \relative {
    \clef treble
    \discant "10"
    r8 s32 f'[ bes f] s e[ a e] s d[ g d] s16 e32[ a]
    <<
      { r16 <f bes> r <e a> r <d g> }
      \\
      { d r a r bes r }
    >> |
    <cis e a>1
  }

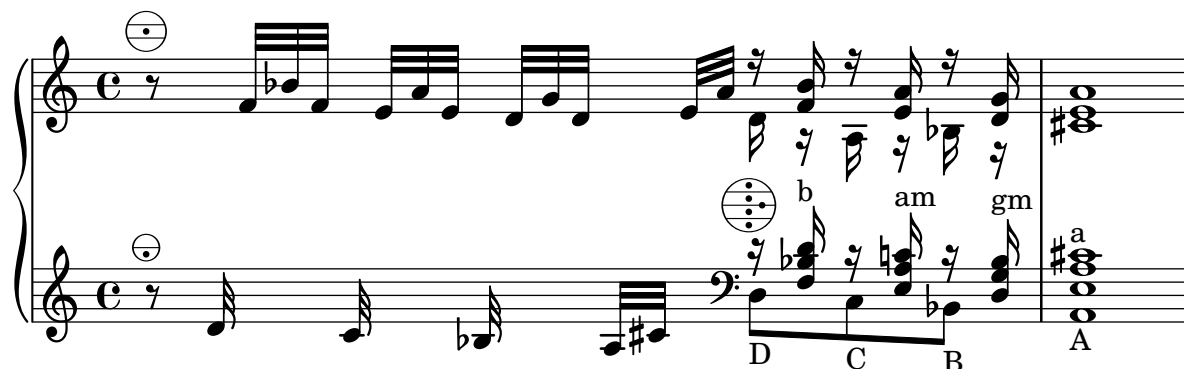
  \new Staff \relative {
    \clef treble
    \freeBass "1"
    r8 d'32 s16. c32 s16. bes32 s16. a32[ cis] s16
    \clef bass \stdBass "Master"
    <<

```

```

{ r16 <f, bes d>^"b" r <e a c>^"am" r <d g bes>^"gm" |
  <e a cis>1^"a" }
\\
{ d8_"D" c_"C" bes_"B" | a1_"A" }
>>
}
>>

```



## Changing the text for sustain markings

`Staff.pedalSustainStrings` can be used to set the text used for pedal down and up. Note that the only valid strings are those found in the list of pedal glyphs - the values used this snippet constitute an exhaustive list.

```
sustainNotes = { c4\sustainOn d e\sustainOff\sustainOn f\sustainOff }
```

```

\relative c' {
  \sustainNotes
  \set Staff.pedalSustainStrings = #'("P" "P-" "-")
  \sustainNotes
  \set Staff.pedalSustainStrings = #'("d" "de" "e")
  \sustainNotes
  \set Staff.pedalSustainStrings = #'("M" "M-" "-")
  \sustainNotes
  \set Staff.pedalSustainStrings = #'("Ped" "*Ped" "*")
  \sustainNotes
}

```



## Clusters

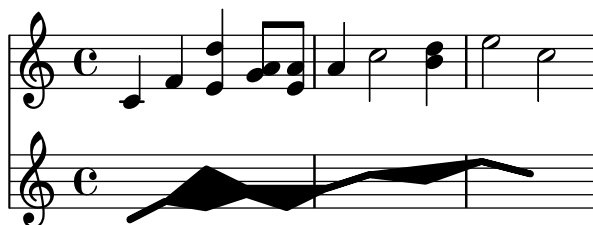
Clusters are a device to denote that a complete range of notes is to be played.

```

fragment = \relative c' {
  c4 f <e d'>4
  <g a>8 <e a> a4 c2 <d b>4
  e2 c
}

```

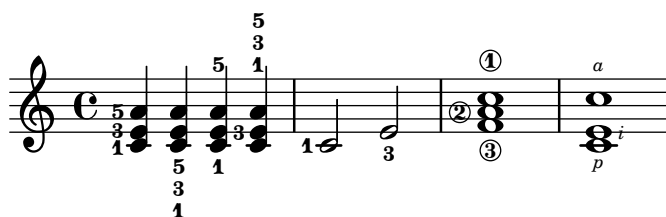
```
<<
\new Staff \fragment
\new Staff \makeClusters \fragment
>>
```



## Position von Fingersatz in Akkorden kontrollieren

Die Position von Fingersatzzahlen kann exakt kontrolliert werden.

```
\relative c' {
  \set fingeringOrientations = #'(left)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(down)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(down right up)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(up)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(left)
  <c-1>2
  \set fingeringOrientations = #'(down)
  <e-3>2
  \set stringNumberOrientations = #'(up left down)
  <f\3 a\2 c\1>1
  \set strokeFingerOrientations = #'(down right up)
  <c\rightHandFinger 1 e\rightHandFinger 2 c'\rightHandFinger 4 >
}
```



## Creating slurs across voices

In some situations, it may be necessary to create slurs between notes from different voices. The solution is to add invisible notes to one of the voices, using `\hideNotes`.

This example is measure 235 of the Ciaccona from Bach's 2nd Partita for solo violin, BWV 1004.

```
\relative c' {
  <<
  {
    d16( a') s a s a[ s a] s a[ s a]
  }
}
```

```

\\
{
    \slurUp
    bes,16[ s e](
    \hideNotes a)
    \unHideNotes f[(
    \hideNotes a)
    \unHideNotes fis](
    \hideNotes a)
    \unHideNotes g[(
    \hideNotes a)
    \unHideNotes gis](
    \hideNotes a)
}
>>

```



## Cross-staff chords - beaming problems workaround

Sometimes it is better to use stems from the upper staff for creating cross-staff chords, because no problems with automatic beam collision avoidance then arise. If the stems from the lower staff were used in the following example, it would be necessary to change the automatic beam collision avoidance settings so that it doesn't detect collisions between staves using `\override Staff.Beam.collision-voice-only = ##t`

```
\new PianoStaff <<
  \new Staff = up
    \relative c' {
      <<
        { r4
          \override Stem.cross-staff = ##t
          \override Stem.length = #19 % this is in half-spaces,
            % so it makes stems 9.5 staffspaces long
          \override Stem.Y-offset = #-6 % stems are normally lengthened
            % upwards, so here we must lower the stem by the amount
            % equal to the lengthening - in this case (19 - 7) / 2
            % (7 is default stem length)
          e e e }
        { s4
          \change Staff = "bottom"
          \override NoteColumn.ignore-collision = ##t
          c, c c
        }
      >>
    }
  >>
}

\new Staff = bottom
  \relative c' {
    \clef bass
```



```

\voiceOne
g8 a g a g a g a
}
>>

```



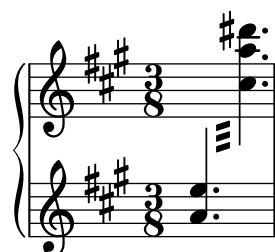
## Cross-staff tremolos

Since `\repeat tremolo` expects exactly two musical arguments for chord tremolos, the note or chord which changes staff within a cross-staff tremolo should be placed inside curly braces together with its `\change Staff` command.

```

\new PianoStaff <<
  \new Staff = "up" \relative c'' {
    \key a \major
    \time 3/8
    s4.
  }
  \new Staff = "down" \relative c'' {
    \key a \major
    \time 3/8
    \voiceOne
    \repeat tremolo 6 {
      <a e'>32
      {
        \change Staff = "up"
        \voiceTwo
        <cis a' dis>32
      }
    }
  }
}
>>

```



## Fine-tuning pedal brackets

The appearance of pedal brackets may be altered in different ways.

```

\paper { ragged-right = ##f }

\relative c'' {
  c2\sostenutoOn c
}

```

```

c2\sostenutoOff c
\once \override Staff.PianoPedalBracket.shorten-pair = #'(-7 . -2)
c2\sostenutoOn c
c2\sostenutoOff c
\once \override Staff.PianoPedalBracket.edge-height = #'(0 . 3)
c2\sostenutoOn c
c2\sostenutoOff c
}

```



## Akkorde auf zwei Systemen mit Arpeggioklammern anzeigen

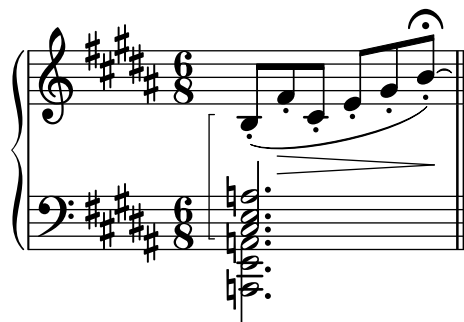
Eine Arpeggioklammer kann anzeigen, dass Noten auf zwei unterschiedlichen Systemen mit der selben Hand gespielt werden sollen. Damit das notiert werden kann, muss der PianoStaff-Kontext so eingestellt werden, dass er Arpeggios über Systeme hinweg akzeptiert und die Form der Arpeggios muss auf eine Klammer eingestellt werden.

(Debussy, Les collines d'Anacapri, T. 65)

```

\new PianoStaff <<
  \set PianoStaff.connectArpeggios = ##t
  \override PianoStaff.Arpeggio.stencil =
    #ly:arpeggio::brew-chord-bracket
  \new Staff {
    \relative c' {
      \key b \major
      \time 6/8
      b8-.(\arpeggio fis'-.\> cis-.
        e-. gis-. b-.)\!\fermata^\laissezVibrer \bar "||"
    }
  }
\new Staff {
  \relative c' {
    \clef bass
    \key b \major
    <<
      {
        <a e cis>2.\arpeggio
      }
      \\\
      {
        <a, e a,>2.
      }
    >>
  }
}
>>

```



## Vorlage für Jazz-Combo

Hier ist ein ziemlich kompliziertes Beispiel für ein Jazz-Ensemble. Achtung: Alle Instrumente sind in `\key c \major` (C-Dur) notiert. Das bezieht sich auf die klingende Musik: LilyPond transponiert die Tonart automatisch, wenn sich die Noten innerhalb eines `transpose`-Abschnitts befinden.

```
\header {
  title = "Song"
  subtitle = "(tune)"
  composer = "Me"
  meter = "moderato"
  piece = "Swing"
  tagline = \markup {
    \column {
      "LilyPond example file by Amelie Zapf,"
      "Berlin 07/07/2003"
    }
  }
}
% To make the example display in the documentation
\paper {
  paper-width = 130
}
%#(set-global-staff-size 16)
\include "english.ly"

%%%%%%%%%%%% Some macros %%%%%%%%%%%%%%

sl = {
  \override NoteHead.style = #'slash
  \hide Stem
}
nsl = {
  \revert NoteHead.style
  \undo \hide Stem
}
crOn = \override NoteHead.style = #'cross
crOff = \revert NoteHead.style

%% insert chord name style stuff here.

jazzChords = { }
```

```
%%%%%%%%%%%%%% Keys 'n' thangs %%%%%%%%%%%%%%%
```

```
global = { \time 4/4 }
```

```
Key = { \key c \major }
```

```
% ##### Horns #####
```

```
% ----- Trumpet -----
```

```
trpt = \transpose c d \relative c' {  
  \Key  
  c1 | c | c |  
}
```

```
trpHarmony = \transpose c' d {  
  \jazzChords  
}
```

```
trumpet = {  
  \global  
  \clef treble  
  <<  
    \trpt  
  >>  
}
```

```
% ----- Alto Saxophone -----
```

```
alto = \transpose c a \relative c' {  
  \Key  
  c1 | c | c |  
}
```

```
altoHarmony = \transpose c' a {  
  \jazzChords  
}
```

```
altoSax = {  
  \global  
  \clef treble  
  <<  
    \alto  
  >>  
}
```

```
% ----- Baritone Saxophone -----
```

```
bari = \transpose c a' \relative c {  
  \Key  
  c1  
  c1  
  \sl  
  d4~"Solo" d d d  
  \nsl  
}
```

```
bariHarmony = \transpose c' a \chordmode {  
  \jazzChords s1 s d2:maj e:m7
```

```

}
bariSax = {
  \global
  \clef treble
  <<
    \bari
  >>
}

% ----- Trombone -----
tbone = \relative c {
  \Key
  c1 | c | c
}
tboneHarmony = \chordmode {
  \jazzChords
}
trombone = {
  \global
  \clef bass
  <<
    \tbone
  >>
}

% ##### Rhythm Section #####

% ----- Guitar -----
gtr = \relative c'' {
  \Key
  c1
  \sl
  b4 b b b
  \nsl
  c1
}
gtrHarmony = \chordmode {
  \jazzChords
  s1 c2:min7+ d2:maj9
}
guitar = {
  \global
  \clef treble
  <<
    \gtr
  >>
}

%% ----- Piano -----
rhUpper = \relative c'' {
  \voiceOne
  \Key

```

```

    c1 | c | c
}
rhLower = \relative c' {
  \voiceTwo
  \Key
  e1 | e | e
}

lhUpper = \relative c' {
  \voiceOne
  \Key
  g1 | g | g
}
lhLower = \relative c {
  \voiceTwo
  \Key
  c1 | c | c
}

PianoRH = {
  \clef treble
  \global
  <<
    \new Voice = "one" \rhUpper
    \new Voice = "two" \rhLower
  >>
}
PianoLH = {
  \clef bass
  \global
  <<
    \new Voice = "one" \lhUpper
    \new Voice = "two" \lhLower
  >>
}

piano = {
  <<
    \new Staff = "upper" \PianoRH
    \new Staff = "lower" \PianoLH
  >>
}

% ----- Bass Guitar -----
Bass = \relative c {
  \Key
  c1 | c | c
}
bass = {
  \global
  \clef bass
  <<

```

```

    \Bass
  >>
}

% ----- Drums -----
up = \drummode {
  \voiceOne
  hh4 <hh sn> hh <hh sn>
  hh4 <hh sn> hh <hh sn>
  hh4 <hh sn> hh <hh sn>
}
down = \drummode {
  \voiceTwo
  bd4 s bd s
  bd4 s bd s
  bd4 s bd s
}

drumContents = {
  \global
  <<
    \new DrumVoice \up
    \new DrumVoice \down
  >>
}

%%%%%%%%%% It All Goes Together Here %%%%%%%%%%%%%%%

\score {
  <<
    \new StaffGroup = "horns" <<
      \new Staff = "trumpet" \with { instrumentName = "Trumpet" }
      \trumpet
      \new Staff = "altosax" \with { instrumentName = "Alto Sax" }
      \altoSax
      \new ChordNames = "barichords" \with { instrumentName = "Trumpet" }
      \bariHarmony
      \new Staff = "barisax" \with { instrumentName = "Bari Sax" }
      \bariSax
      \new Staff = "trombone" \with { instrumentName = "Trombone" }
      \trombone
    >>

    \new StaffGroup = "rhythm" <<
      \new ChordNames = "chords" \gtrHarmony
      \new Staff = "guitar" \with { instrumentName = "Guitar" }
      \guitar
      \new PianoStaff = "piano" \with {
        instrumentName = "Piano"
        midiInstrument = "acoustic grand"
      }
      \piano
  >>
}

```

```

    \new Staff = "bass" \with { instrumentName = "Bass" }
    \bass
    \new DrumStaff \with { instrumentName = "Drums" }
    \drumContents
  >>
>>
\layout {
  \context { \Staff \RemoveEmptyStaves }
  \context {
    \Score
    \override BarNumber.padding = 3
    \override RehearsalMark.padding = 2
    skipBars = ##t
  }
}
\midi { }
}

```

## Song

(tune)

Me

moderato

Swing



Trumpet

Alto Sax

Bari Sax

Trombone

Guitar

Piano

Bass

Drums

B $\Delta$  C $\sharp$ m<sup>7</sup>

Cm $\Delta$  D $\Delta$ <sup>9</sup>

## Laissez vibrer ties

Laissez vibrer ties have a fixed size. Their formatting can be tuned using 'tie-configuration.

```
\relative c' {
  <c e g>4\laissezVibrer r <c f g>\laissezVibrer r
  <c d f g>4\laissezVibrer r <c d f g>4.\laissezVibrer r8

  <c d e f>4\laissezVibrer r
  \override LaissezVibrerTieColumn.tie-configuration
    = #`((-7 . ,DOWN)
      (-5 . ,DOWN)
      (-3 . ,UP)
      (-1 . ,UP))
  <c d e f>4\laissezVibrer r
}
```



## Vorlage für einfache Klaviernotation

Hier ein einfaches Klaviersystem.

```
upper = \relative c'' {
  \clef treble
  \key c \major
  \time 4/4

  a4 b c d
}

lower = \relative c {
  \clef bass
  \key c \major
  \time 4/4

  a2 c
}

\score {
  \new PianoStaff \with { instrumentName = "Piano" }
  <<
    \new Staff = "upper" \upper
    \new Staff = "lower" \lower
  >>
  \layout { }
  \midi { }
}
```



## Piano template with centered lyrics

Anstatt ein eigenes System für Melodie und Text zu schreiben, können Sie den Text auch zwischen die beiden Klaviersysteme schreiben (und damit das zusätzliche System für die Gesangsstimme auslassen).

```
upper = \relative c'' {
  \clef treble
  \key c \major
  \time 4/4

  a4 b c d
}
```

```

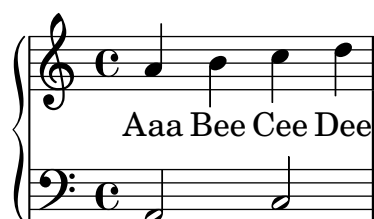
lower = \relative c {
  \clef bass
  \key c \major
  \time 4/4

  a2 c
}

text = \lyricmode {
  Aaa Bee Cee Dee
}

\score {
  \new PianoStaff <<
    \new Staff = upper { \new Voice = "singer" \upper }
    \new Lyrics \lyricsto "singer" \text
    \new Staff = lower { \lower }
  >>
  \layout { }
  \midi { }
}

```



## Vorlage für Klavier und Gesangsstimme

Das nächste Beispiel ist typisch für ein Lied: Im oberen System die Melodie mit Text, darunter Klavierbegleitung.

```

melody = \relative c'' {
  \clef treble
  \key c \major
  \time 4/4

  a b c d
}

text = \lyricmode {
  Aaa Bee Cee Dee
}

upper = \relative c'' {
  \clef treble
  \key c \major
  \time 4/4

  a4 b c d
}

```

```

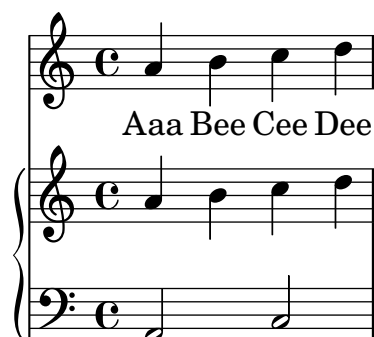
}

lower = \relative c {
  \clef bass
  \key c \major
  \time 4/4

  a2 c
}

\score {
  <<
    \new Voice = "mel" { \autoBeamOff \melody }
    \new Lyrics \lyricsto mel \text
    \new PianoStaff <<
      \new Staff = "upper" \upper
      \new Staff = "lower" \lower
    >>
  >>
  \layout {
    \context { \Staff \RemoveEmptyStaves }
  }
  \midi { }
}

```



## Removing brace on first line of piano score

This snippet removes the first brace from a PianoStaff or a GrandStaff, together with the clefs.

It may be useful when cutting and pasting the engraved image into existing music.

It uses `\alterBroken`.

```

someMusic = {
  \once \override Staff.Clef.stencil = ##f
  \once \override Staff.TimeSignature.stencil = ##f
  \repeat unfold 3 c1 \break
  \repeat unfold 5 c1 \break
  \repeat unfold 5 c1
}

\score {
  \new PianoStaff

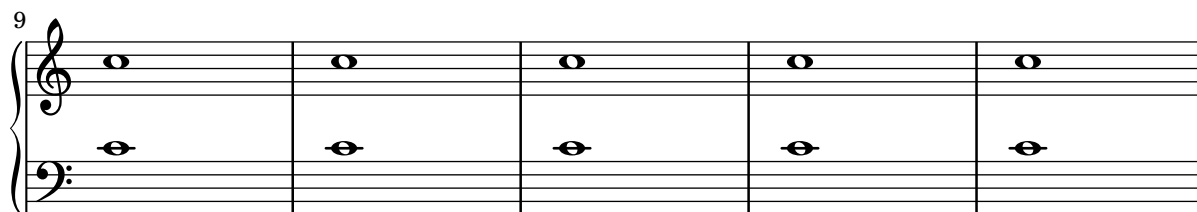
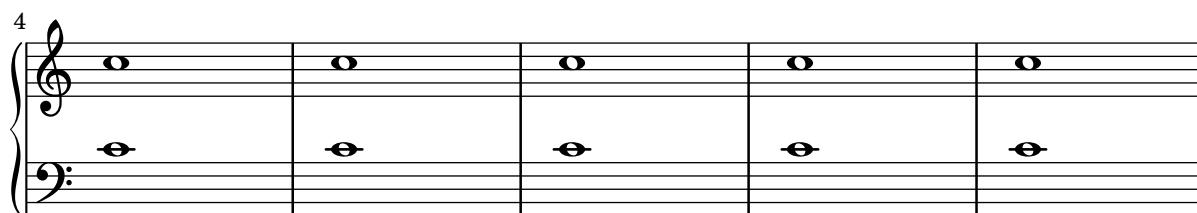
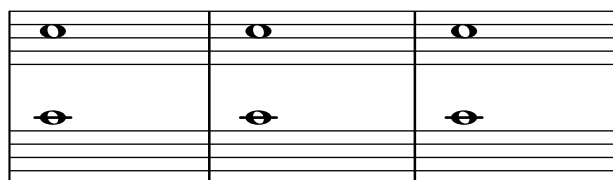
```

```

<<
  \new Staff = "right" \relative c' { \someMusic
  \new Staff = "left" \relative c' { \clef F \someMusic }
>>
\layout {
  indent=75
  \context {
    \PianoStaff
    \alterBroken transparent #'(#t) SystemStartBrace
  }
}

\paper { tagline = ##f }

```



## Using autochange with more than one voice

Using autochange with more than one voice.

```

\score {
  \new PianoStaff
  <<
    \new Staff = "up" {
      <<
        \set Timing.beamExceptions = #'()
        \set Timing.beatStructure = #'(4)
        \new Voice {
          \voiceOne
          \autoChange
          \relative c' {
            g8 a b c d e f g
            g,8 a b c d e f g
          }
        }
      >>
    }
  >>
}

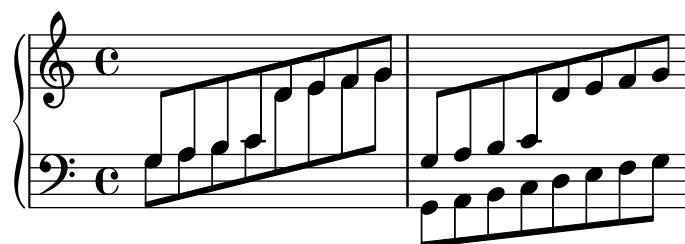
```

```

\new Voice {
  \voiceTwo
  \autoChange
  \relative c' {
    g8 a b c d e f g
    g,,8 a b c d e f g
  }
}
>>
}

\new Staff = "down" {
  \clef bass
}
>>
}

```



## Vocal ensemble template with automatic piano reduction

In diesem Beispiel wird ein automatischer Klavierauszug zu der Chorpartitur hinzugefügt. Das zeigt eine der Stärken von LilyPond – man kann eine Variable mehr als einmal benutzen. Wenn Sie irgendeine Änderung an einer Chorstimme vornehmen, (etwa `tenorMusic`), verändert sich auch der Klavierauszug entsprechend.

```

\paper {
  top-system-spacing.basic-distance = 10
  score-system-spacing.basic-distance = 20
  system-system-spacing.basic-distance = 20
  last-bottom-spacing.basic-distance = 10
}

global = {
  \key c \major
  \time 4/4
}

sopMusic = \relative {
  c''4 c c8[( b)] c4
}

sopWords = \lyricmode {
  hi hi hi hi
}

altoMusic = \relative {

```

```

    e'4 f d e
  }
  altoWords = \lyricmode {
    ha ha ha ha
  }

  tenorMusic = \relative {
    g4 a f g
  }
  tenorWords = \lyricmode {
    hu hu hu hu
  }

  bassMusic = \relative {
    c4 c g c
  }
  bassWords = \lyricmode {
    ho ho ho ho
  }

  \score {
    <<
      \new ChoirStaff <<
        \new Lyrics = "sopranos" \with {
          % This is needed for lyrics above a staff
          \override VerticalAxisGroup.staff-affinity = #DOWN
        }
        \new Staff = "women" <<
          \new Voice = "sopranos" { \voiceOne << \global \sopMusic >> }
          \new Voice = "altos" { \voiceTwo << \global \altoMusic >> }
        >>
        \new Lyrics = "altos"
        \new Lyrics = "tenors" \with {
          % This is needed for lyrics above a staff
          \override VerticalAxisGroup.staff-affinity = #DOWN
        }
      >>

      \new Staff = "men" <<
        \clef bass
        \new Voice = "tenors" { \voiceOne << \global \tenorMusic >> }
        \new Voice = "basses" { \voiceTwo << \global \bassMusic >> }
      >>
      \new Lyrics = "basses"
      \context Lyrics = "sopranos" \lyricsto "sopranos" \sopWords
      \context Lyrics = "altos" \lyricsto "altos" \altoWords
      \context Lyrics = "tenors" \lyricsto "tenors" \tenorWords
      \context Lyrics = "basses" \lyricsto "basses" \bassWords
    >>
    \new PianoStaff <<
      \new Staff <<
        \set Staff.printPartCombineTexts = ##f
        \partCombine
      >>
    >>
  }

```

```

    << \global \sopMusic >>
    << \global \altoMusic >>
  >>
  \new Staff <<
    \clef bass
    \set Staff.printPartCombineTexts = ##f
    \partCombine
    << \global \tenorMusic >>
    << \global \bassMusic >>
  >>
  >>
  >>
}

```

The image displays a musical score for a keyboard instrument, consisting of four staves. The first two staves are grouped by a brace on the left, as are the last two. The first staff is in treble clef, and the second is in bass clef. The third staff is in treble clef, and the fourth is in bass clef. The time signature is common time (C). The lyrics are 'hi hi hi hi', 'ha ha ha ha', 'hu hu hu hu', and 'ho ho ho ho'.



# Percussion

Abschnitt “Percussion” in *Notationsreferenz*

## Adding drum parts

Using the powerful pre-configured tools such as the `\drummode` function and the `DrumStaff` context, inputting drum parts is quite easy: drums are placed at their own staff positions (with a special clef symbol) and have note heads according to the drum. Attaching an extra symbol to the drum or restricting the number of lines is possible.

```

drh = \drummode {
  cymc4.^"crash" hhc16^"h.h." hh hhc8 hho hhc8 hh16 hh
  hhc4 r4 r2
}
drl = \drummode {
  bd4 sn8 bd bd4 << bd ss >>
  bd8 tommh tommh bd toml toml bd tomfh16 tomfh
}
timb = \drummode {
  timh4 ssh timl8 ssh r timh r4
  ssh8 timl r4 cb8 cb
}

\score {
  <<
    \new DrumStaff \with {
      instrumentName = "timbales"
      drumStyleTable = #timbales-style
      \override StaffSymbol.line-count = #2
      \override BarLine.bar-extent = #'(-1 . 1)
    }
    <<
      \timb
    >>
    \new DrumStaff \with { instrumentName = "drums" }
    <<
      \new DrumVoice { \stemUp \drh }
      \new DrumVoice { \stemDown \drl }
    >>
  >>
  \layout { }
  \midi { \tempo 4 = 120 }
}

```

The image shows a musical score for two percussion parts: timbales and drums. The timbales staff is on top, with a C-clef and a common time signature. It contains notes for 'crash' (marked with a cross), 'h.h.' (marked with a plus), and other rhythmic patterns. The drums staff is on the bottom, with a C-clef and a common time signature. It contains notes for 'bd' (bass drum), 'sn' (snare), 'tom' (tom), and 'cb' (conga), with various rhythmic patterns and stems.

## Cow and ride bell example

Two different bells, entered with 'cb' (cowbell) and 'rb' (ridebell).

```
\paper { tagline = ##f }

#(define mydrums '((ridebell default #f 3)
                  (cowbell default #f -2)))

\new DrumStaff \with { instrumentName = #"Different Bells" }

\drummode {
  \set DrumStaff.drumStyleTable = #(alist->hash-table mydrums)
  \set DrumStaff.clefPosition = 0.5
  \override DrumStaff.StaffSymbol.line-positions = #'(-2 3)
  \override Staff.BarLine.bar-extent = #'(-1.0 . 1.5)

  \time 2/4
  rb8 8 cb8 16 rb16-> ~ |
  16 8 16 cb8 8 |
}
```



## Customized drum notation in printed and MIDI output

Customized drum „pitch“ names (suitable for a custom drum style, for example) may be used both in printed and MIDI output by defining such variables as `drumPitchNames`, `drumStyleTable` and `midiDrumPitches`, as demonstrated here.

In short, this snippet

- defines some "pitch" names,
- defines how they will be rendered,
- tells LilyPond to use them for layout,
- assigns pitches to the names, and
- tells LilyPond to use them for MIDI output.

```
%% This snippet tries to amend
%% NR 2.5.1 Common notation for percussion - Custom percussion staves
%% http://lilypond.org/doc/v2.24/Documentation/notation/common-notation-for-percussion#cust

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%
%% To use custom drum pitch names for your score and midi you need to follow
%% this route:
%%
%% LAYOUT:
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%
%% (1) Define a name and put it in `drumPitchNames'
%% This can be done at toplevel with
```

```

%%      drumPitchNames.my-name = #'my-name
%%      It's possible to add an alias as well.
%% (2) Define how it should be printed
%%      Therefore put them into a top-level list, where each entry should
%%      be of the form:
%%      (my-name
%%        note-head-style-or-default
%%        articulation-type-or-#f
%%        staff-position)
%%      Example:
%%      #(define my-style
%%        '(
%%          (my-name default tenuto -1)
%%          ; ...
%%        ))
%% (3) Tell LilyPond to use these custom definitions, with
%%      drumStyleTable = #(alist->hash-table my-style)
%%      in a \layout or \with block
%%
%%      Now we're done for layout. Here is a short but complete example:
%%      \new DrumStaff
%%      \with { drumStyleTable = #(alist->hash-table my-style) }
%%      \drummode { my-name }
%%
%%      %%%%%%%%%%%
%% MIDI:
%%      %%%%%%%%%%%
%%
%% (1) Again at top-level, assign a pitch to your custom note name
%%      midiDrumPitches.my-name = ges
%%      Note that you have to use the name, which is in drumPitchNames, no alias
%% (2) Tell LilyPond to use this pitch(es), with
%%      drumPitchTable = #(alist->hash-table midiDrumPitches)
%%
%%      Example:
%%      \score {
%%        \new DrumStaff
%%        \with {
%%          drumStyleTable = #(alist->hash-table my-style)
%%          drumPitchTable = #(alist->hash-table midiDrumPitches)
%%        }
%%        \drummode { my-name4 }
%%      \layout {}
%%      \midi {}
%%    }
%%
%%      %%%%%%%%%%%
%% TESTING
%%      %%%%%%%%%%%
%%
%%      To test whether all is fine, run the following sequence in terminal:
%%      lilypond my-file.ly

```

```

%%      midi2ly my-file.midi
%%      gedit my-file-midi.ly
%%
%% This will do the following:
%% 1. create pdf and midi
%% 2. transform the midi back to a .ly-file
%%    (note: midi2ly is not always good in correctly identifying enharmonic pitches)
%% 3. open this file in gedit (or use another editor)
%% Now watch what you've got.
%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% FULL EXAMPLE
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

drumPitchNames.dbass      = #'dbass
drumPitchNames.dba        = #'dbass  % 'db is in use already
drumPitchNames.dbassmute  = #'dbassmute
drumPitchNames.dbm        = #'dbassmute
drumPitchNames.do         = #'dopen
drumPitchNames.dopenmute  = #'dopenmute
drumPitchNames.dom        = #'dopenmute
drumPitchNames.dslap      = #'dslap
drumPitchNames.ds         = #'dslap
drumPitchNames.dslapmute  = #'dslapmute
drumPitchNames.dsm        = #'dslapmute

#(define djembe
  '((dbass      default  #f          -2)
    (dbassmute  default  stopped    -2)
    (dopen      default  #f          0)
    (dopenmute  default  stopped    0)
    (dslap      default  #f          2)
    (dslapmute  default  stopped    2)))

midiDrumPitches.dbass = g
midiDrumPitches.dbassmute = fis
midiDrumPitches.dopen = a
midiDrumPitches.dopenmute = gis
midiDrumPitches.dslap = b
midiDrumPitches.dslapmute = ais

one = \drummode { r4 dba4 do ds r dbm dom dsm }

\score {
  \new DrumStaff
  \with {
    \override StaffSymbol.line-count = #3
    instrumentName = #"Djembe "
    drumStyleTable = #(alist->hash-table djembe)
    drumPitchTable = #(alist->hash-table midiDrumPitches)
  }
}

```

```

    }
    \one
    \layout {}
    \midi {}
}

```



## Heavily customized polymetric time signatures

Though the polymetric time signature shown was not the most essential item here, it has been included to show the beat of this piece (which is the template of a real Balkan song!).

```
melody = \relative c'' {
  \key g \major
  \compoundMeter #'((3 8) (2 8) (2 8) (3 8) (2 8) (2 8)
                    (2 8) (2 8) (3 8) (2 8) (2 8))
  c8 c c d4 c8 c b c b a4 g fis8 e d c b' c d e4-~ fis8 g \break
  c,4. d4 c4 d4. c4 d c2 d4. e4-~ d4
  c4. d4 c4 d4. c4 d c2 d4. e4-~ d4 \break
  c4. d4 c4 d4. c4 d c2 d4. e4-~ d4
  c4. d4 c4 d4. c4 d c2 d4. e4-~ d4 \break
}
```

```
drum = \new DrumStaff \drummode {
  \repeat volta 2 {
    bd4.^{\markup { Drums } sn4 bd \bar {"";
    sn4. bd4 sn \bar {"";
    bd sn bd4. sn4 bd
  }
}
```

```
\new Staff \with {
  instrumentName = \markup { \concat { "B" \flat " Sop." } }
}
```

```
{
  \melody
  \drum
}
```

`\paper { tagline = ##f }`





## High and Low woodblock example

Two Woodblocks, entered with 'wbh' (high woodblock) and 'wbl' (low woodblock). The length of the barline has been altered with an `\override` command otherwise it would be too short. The positions of the two stafflines also have to be explicitly defined.

```
\paper { tagline = ##f }
```

```
% These lines define the position of the woodblocks in the stave;
% if you like, you can change it or you can use special note heads
% for the woodblocks.
```

```
#(define mydrums '((hiwoodblock default #f 3)
                    (lowwoodblock default #f -2)))
```

```
woodstaff = {
  % This defines a staff with only two lines.
  % It also defines the positions of the two lines.
  \override Staff.StaffSymbol.line-positions = #'(-2 3)

  % This is necessary; if not entered,
  % the barline would be too short!
  \override Staff.BarLine.bar-extent = #'(-1.0 . 1.5)
  % small correction for the clef:
  \set DrumStaff.clefPosition = 0.5
}
```

```
\new DrumStaff {
  % with this you load your new drum style table
  \set DrumStaff.drumStyleTable = #(alist->hash-table mydrums)

  \woodstaff

  \drummode {
    \time 2/4
    wbl8 16 16 8-> 8 |
    wbl8 16 16-> ~ 16 16 r8 |
  }
}
```



## Vorlage für Jazz-Combo

Hier ist ein ziemlich kompliziertes Beispiel für ein Jazz-Ensemble. Achtung: Alle Instrumente sind in `\key c \major` (C-Dur) notiert. Das bezieht sich auf die klingende Musik: LilyPond transponiert die Tonart automatisch, wenn sich die Noten innerhalb eines `transpose`-Abschnitts befinden.

```
\header {
  title = "Song"
  subtitle = "(tune)"
  composer = "Me"
  meter = "moderato"
  piece = "Swing"
  tagline = \markup {
    \column {
      "LilyPond example file by Amelie Zapf,"
      "Berlin 07/07/2003"
    }
  }
}

% To make the example display in the documentation
\paper {
  paper-width = 130
}

%#(set-global-staff-size 16)
\include "english.ly"

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

sl = {
  \override NoteHead.style = #'slash
  \hide Stem
}
nsl = {
  \revert NoteHead.style
  \undo \hide Stem
}
crOn = \override NoteHead.style = #'cross
crOff = \revert NoteHead.style

%% insert chord name style stuff here.

jazzChords = { }

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

global = { \time 4/4 }

Key = { \key c \major }

% ##### Horns #####

% ----- Trumpet -----
```

```

trpt = \transpose c d \relative c' {
  \Key
  c1 | c | c |
}
trpHarmony = \transpose c' d {
  \jazzChords
}
trumpet = {
  \global
  \clef treble
  <<
    \trpt
  >>
}

% ----- Alto Saxophone -----
alto = \transpose c a \relative c' {
  \Key
  c1 | c | c |
}
altoHarmony = \transpose c' a {
  \jazzChords
}
altoSax = {
  \global
  \clef treble
  <<
    \alto
  >>
}

% ----- Baritone Saxophone -----
bari = \transpose c a' \relative c {
  \Key
  c1
  c1
  \sl
  d4~"Solo" d d d
  \nsl
}
bariHarmony = \transpose c' a \chordmode {
  \jazzChords s1 s d2:maj e:m7
}
bariSax = {
  \global
  \clef treble
  <<
    \bari
  >>
}

% ----- Trombone -----

```



```

tbone = \relative c {
  \Key
  c1 | c | c
}
tboneHarmony = \chordmode {
  \jazzChords
}
trombone = {
  \global
  \clef bass
  <<
    \tbone
  >>
}

% ##### Rhythm Section #####

% ----- Guitar -----
gtr = \relative c'' {
  \Key
  c1
  \sl
  b4 b b b
  \nsl
  c1
}
gtrHarmony = \chordmode {
  \jazzChords
  s1 c2:min7+ d2:maj9
}
guitar = {
  \global
  \clef treble
  <<
    \gtr
  >>
}

%% ----- Piano -----
rhUpper = \relative c'' {
  \voiceOne
  \Key
  c1 | c | c
}
rhLower = \relative c' {
  \voiceTwo
  \Key
  e1 | e | e
}

lhUpper = \relative c' {
  \voiceOne

```

```

    \Key
    g1 | g | g
  }
  lhLower = \relative c {
    \voiceTwo
    \Key
    c1 | c | c
  }

  PianoRH = {
    \clef treble
    \global
    <<
      \new Voice = "one" \rhUpper
      \new Voice = "two" \rhLower
    >>
  }
  PianoLH = {
    \clef bass
    \global
    <<
      \new Voice = "one" \lhUpper
      \new Voice = "two" \lhLower
    >>
  }

  piano = {
    <<
      \new Staff = "upper" \PianoRH
      \new Staff = "lower" \PianoLH
    >>
  }

  % ----- Bass Guitar -----
  Bass = \relative c {
    \Key
    c1 | c | c
  }
  bass = {
    \global
    \clef bass
    <<
      \Bass
    >>
  }

  % ----- Drums -----
  up = \drummode {
    \voiceOne
    hh4 <hh sn> hh <hh sn>
    hh4 <hh sn> hh <hh sn>
    hh4 <hh sn> hh <hh sn>
  }

```

```

}
down = \drummode {
  \voiceTwo
  bd4 s bd s
  bd4 s bd s
  bd4 s bd s
}

drumContents = {
  \global
  <<
    \new DrumVoice \up
    \new DrumVoice \down
  >>
}

%%%%%%%%%% It All Goes Together Here %%%%%%%%%%%%%%

\score {
  <<
    \new StaffGroup = "horns" <<
      \new Staff = "trumpet" \with { instrumentName = "Trumpet" }
      \trumpet
      \new Staff = "altosax" \with { instrumentName = "Alto Sax" }
      \altoSax
      \new ChordNames = "barichords" \with { instrumentName = "Trumpet" }
      \bariHarmony
      \new Staff = "barisax" \with { instrumentName = "Bari Sax" }
      \bariSax
      \new Staff = "trombone" \with { instrumentName = "Trombone" }
      \trombone
    >>

    \new StaffGroup = "rhythm" <<
      \new ChordNames = "chords" \gtrHarmony
      \new Staff = "guitar" \with { instrumentName = "Guitar" }
      \guitar
      \new PianoStaff = "piano" \with {
        instrumentName = "Piano"
        midiInstrument = "acoustic grand"
      }
      \piano
      \new Staff = "bass" \with { instrumentName = "Bass" }
      \bass
      \new DrumStaff \with { instrumentName = "Drums" }
      \drumContents
    >>
  >>
  \layout {
    \context { \Staff \RemoveEmptyStaves }
    \context {
      \Score

```

```

\override BarNumber.padding = 3
\override RehearsalMark.padding = 2
skipBars = ##t
}
}
\midi { }
}

```

## Song

(tune)

Me

moderato

Swing

Trumpet

Alto Sax

Bari Sax

Trombone

Guitar

Piano

Bass

Drums

B<sup>Δ</sup> C<sup>#</sup>m<sup>7</sup>

Solo

Cm<sup>Δ</sup> D<sup>Δ</sup> 9

## Percussion beaters

Graphic symbols for percussion instruments are not natively supported; however it is possible to include such symbols, either as an external EPS file or as embedded PostScript code inside a markup, as demonstrated in this example.

```
stick = \markup {
  \with-dimensions #'(0 . 5) #'(0 . 5)
  \postscript "
    0 6 translate
    0.8 -0.8 scale
    0 0 0 setrgbcolor
    [] 0 setdash
    1 setlinewidth
    0 setlinejoin
    0 setlinecap
    gsave [1 0 0 1 0 0] concat
    gsave [1 0 0 1 -3.5406095 -199.29342] concat
    gsave
    0 0 0 setrgbcolor
    newpath
    7.1434065 200.94354 moveto
    7.2109628 200.90454 7.2785188 200.86554 7.3460747 200.82654 curveto
    8.2056347 202.31535 9.0651946 203.80414 9.9247546 205.29295 curveto
    9.8571989 205.33195 9.7896429 205.37095 9.7220864 205.40996 curveto
    8.8625264 203.92115 8.0029664 202.43233 7.1434065 200.94354 curveto
    closepath
    eofill
    grestore
    gsave
    0 0 0 setrgbcolor
    newpath
    4.9646672 203.10444 moveto
    5.0036707 203.03688 5.0426744 202.96933 5.0816777 202.90176 curveto
    6.5704792 203.76133 8.0592809 204.6209 9.5480824 205.48045 curveto
    9.5090791 205.54801 9.4700754 205.61556 9.4310717 205.68311 curveto
    7.94227 204.82356 6.4534687 203.96399 4.9646672 203.10444 curveto
    closepath
    eofill
    grestore
    gsave
    <<
    /ShadingType 3
    /ColorSpace /DeviceRGB
    /Coords [113.13708 207.87465 0 113.13708 207.87465 16.162441]
    /Extend [true true]
    /Domain [0 1]
    /Function <<
    /FunctionType 3
    /Functions
    [
    <<
    /FunctionType 2
```

```

/Domain [0 1]
/C0 [1 1 1]
/C1 [0.72941178 0.72941178 0.72941178]
/N 1
>>
]
/Domain [0 1]
/Bounds [ ]
/Encode [ 0 1 ]
>>
>>
newpath
7.6422017 200.76488 moveto
7.6505696 201.02554 7.3905363 201.24867 7.1341335 201.20075 curveto
6.8759501 201.16916 6.6949602 200.87978 6.7801462 200.63381 curveto
6.8480773 200.39155 7.1438307 200.25377 7.3728389 200.35861 curveto
7.5332399 200.42458 7.6444521 200.59122 7.6422017 200.76488 curveto
closepath
clip
gsave [
  0.052859054 0.063089841 -0.020912282 0.017521108 5.7334261 189.76443
] concat
shfill
grestore
grestore
0 0 0 setrgbcolor
[] 0 setdash
0.027282091 setlinewidth
0 setlinejoin
0 setlinecap
newpath
7.6422017 200.76488 moveto
7.6505696 201.02554 7.3905363 201.24867 7.1341335 201.20075 curveto
6.8759501 201.16916 6.6949602 200.87978 6.7801462 200.63381 curveto
6.8480773 200.39155 7.1438307 200.25377 7.3728389 200.35861 curveto
7.5332399 200.42458 7.6444521 200.59122 7.6422017 200.76488 curveto
closepath
stroke
gsave
<<
/ShadingType 3
/ColorSpace /DeviceRGB
/Coords [113.13708 207.87465 0 113.13708 207.87465 16.162441]
/Extend [true true]
/Domain [0 1]
/Function <<
/FunctionType 3
/Functions
[
<<
/FunctionType 2
/Domain [0 1]

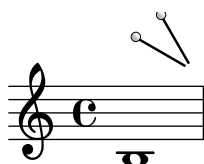
```

```

/C0 [1 1 1]
/C1 [0.72941178 0.72941178 0.72941178]
/N 1
>>
]
/Domain [0 1]
/Bounds [ ]
/Encode [ 0 1 ]
>>
>>
newpath
5.2721217 202.83181 moveto
5.2804896 203.09247 5.0204563 203.3156 4.7640539 203.26768 curveto
4.5058701 203.23609 4.3248803 202.94671 4.4100662 202.70074 curveto
4.4779975 202.45848 4.7737511 202.3207 5.0027593 202.42554 curveto
5.1631598 202.49149 5.2743721 202.65813 5.2721217 202.83181 curveto
closepath
clip
gsave [
  0.052859054 0.063089841 -0.020912282 0.017521108 3.363346 191.83136
] concat
shfill
grestore
grestore
0 0 0 setrgbcolor
[] 0 setdash
0.027282091 setlinewidth
0 setlinejoin
0 setlinecap
newpath
5.2721217 202.83181 moveto
5.2804896 203.09247 5.0204563 203.3156 4.7640539 203.26768 curveto
4.5058701 203.23609 4.3248803 202.94671 4.4100662 202.70074 curveto
4.4779975 202.45848 4.7737511 202.3207 5.0027593 202.42554 curveto
5.1631598 202.49149 5.2743721 202.65813 5.2721217 202.83181 curveto
closepath
stroke
grestore
grestore
"
}

\score {
  b1^\stick
}

```



## Percussion example

A short example taken from Stravinsky's *L'histoire du Soldat*.

```

#(define mydrums '((bassdrum   default #f  4)
                   (snare      default #f -4)
                   (tambourine default #f  0)))

\paper { tagline = ##f }

global = {
  \time 3/8 s4.
  \time 2/4 s2*2
  \time 3/8 s4.
  \time 2/4 s2
}

drumsA = {
  \context DrumVoice <<
    { \global }
    { \drummode {
      \autoBeamOff
      \stemDown sn8 \stemUp tamb s8 |
      sn4 \stemDown sn4 |
      \stemUp tamb8 \stemDown sn8 \stemUp sn16 \stemDown sn \stemUp sn8 |
      \stemDown sn8 \stemUp tamb s8 |
      \stemUp sn4 s8 \stemUp tamb
    }
  }
  >>
}

drumsB = {
  \drummode {
    s4 bd8 s2*2 s4 bd8 s4 bd8 s8
  }
}

\layout {
  indent = 40
  \context {
    \DrumStaff
    drumStyleTable = #(alist->hash-table mydrums)
  }
}

\score {
  \new StaffGroup <<
    \new DrumStaff \with {
      instrumentName = \markup \center-column {
        "Tambourine"
        "et"
        "caisse claire s. timbre"
      }
    }
  >>
}

```



```

    }
  }
  \drumsA
  \new DrumStaff \with {
    instrumentName = "Grosse Caisse"
  }
  \drumsB
  >>
}

```

Tambourine  
et  
caisse claire s. timbre

Grosse Caisse

## Printing music with different time signatures

In the following snippet, two parts have a completely different time signature, yet remain synchronized.

The bar lines can no longer be printed at the Score level; to allow independent bar lines in each part, the `Default_barline_engraver` and `Timing_translator` are moved from the Score context to the Staff context.

If bar numbers are required, the `Bar_number_engraver` should also be moved, since it relies on properties set by the `Timing_translator`; a `\with` block can be used to add bar numbers to the relevant staff.

```

\paper {
  indent = #0
  ragged-right = ##t
  tagline = ##f
}

global = { \time 3/4 { s2.*3 } \bar "" \break { s2.*3 } }

\layout {
  \context {
    \Score
    \remove "Timing_translator"
    \remove "Bar_number_engraver"
    \override SpacingSpanner.uniform-stretching = ##t
    \override SpacingSpanner.strict-note-spacing = ##t
    proportionalNotationDuration = \musicLength 64
  }
  \context {
    \Staff
    \consists "Timing_translator"
  }
  \context {
    \Voice
    \remove "Forbid_line_break_engraver"
  }
}

```

```

    tupletFullLength = ##t
  }
}

Bassklarinette = \new Staff \with {
  \consists "Bar_number_engraver"
  barNumberVisibility = #(every-nth-bar-number-visible 2)
  \override BarNumber.break-visibility = #end-of-line-invisible
} <<
\global {
  \bar "|"
  \clef treble
  \time 3/8
  d''4.

  \bar "|"
  \time 3/4
  r8 des''2( c''8)

  \bar "|"
  \time 7/8
  r4. ees''2 ~

  \bar "|"
  \time 2/4
  \tupletUp
  \tuplet 3/2 { ees''4 r4 d''4 ~ }

  \bar "|"
  \time 3/8
  \tupletUp
  \tuplet 4/3 { d''4 r4 }

  \bar "|"
  \time 2/4
  e''2

  \bar "|"
  \time 3/8
  es''4.

  \bar "|"
  \time 3/4
  r8 d''2 r8
  \bar "|"
}
>>

Perkussion = \new StaffGroup <<
  \new Staff <<
    \global {
      \bar "|"

```

```

\clef percussion
\time 3/4
r4 c'2 ~

\bar "|"
c'2.

\bar "|"
R2.

\bar "|"
r2 g'4 ~

\bar "|"
g'2. ~

\bar "|"
g'2.
}
>>
\new Staff <<
\global {
\bar "|"
\clef percussion
\time 3/4
R2.

\bar "|"
g'2. ~

\bar "|"
g'2.

\bar "|"
r4 g'2 ~

\bar "|"
g'2 r4

\bar "|"
g'2.
}
>>
>>

\score {
<<
\Bassklarinette
\Perkussion
>>
}

```

The musical score consists of three systems of staves. The first system shows measures 1-3, the second system shows measures 4-6, and the third system shows measures 7-8. The notation includes various rhythmic patterns, including eighth notes, quarter notes, and half notes, with some measures containing rests. The notation includes dynamic markings like 'pp' and 'f'.

## Tam-tam example

A tam-tam example, entered with 'tt'

```
#(define mydrums '((tamtam default #f 0)))
```

```
\new DrumStaff \with { instrumentName = #"Tamtam" }
```

```
\drummode {
  \set DrumStaff.drumStyleTable = #(alist->hash-table mydrums)
  \override Staff.StaffSymbol.line-positions = #'( 0 )
  \override Staff.BarLine.bar-extent = #'(-1.5 . 1.5)
```

```
tt 1 \pp \laissezVibrer
}
```

```
\paper { tagline = ##t}
```

Tamtam  $\text{H} \text{C} \text{pp}$

## Tambourine example

A tambourine example, entered 'tamb'

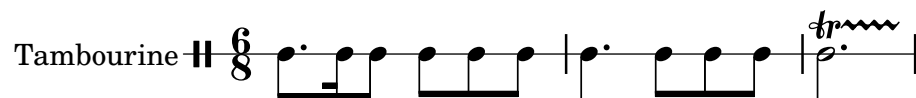
```
\paper { tagline = ##f }
```

```
#(define mydrums '((tambourine default #f 0)))
```

```
\new DrumStaff \with { instrumentName = #"Tambourine" }
```

```
\drummode {
  \set DrumStaff.drumStyleTable = #(alist->hash-table mydrums)
  \override Staff.StaffSymbol.line-positions = #'( 0 )
  \override Staff.BarLine.bar-extent = #'(-1.5 . 1.5)

  \time 6/8
  tamb8. 16 8 8 8 8 |
  tamb4. 8 8 8 |
  % the trick with the scaled duration and the shorter rest
  % is necessary for the correct ending of the trill-span!
  tamb2.*5/6 \startTrillSpan s8 \stopTrillSpan |
}
```



## Fretted strings

Abschnitt “Fretted string instruments” in *Notationsreferenz*

### Adding fingerings to a score

Fingering instructions can be entered using a simple syntax.

```
\relative c' ' {
  c4-1 d-2 f-4 e-3
}
```

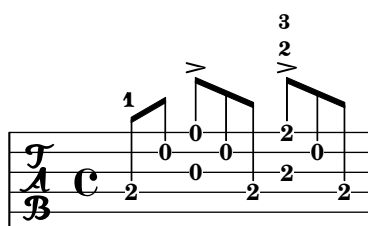


### Adding fingerings to tablatures

To add fingerings to tablatures, use a combination of `\markup` and `\finger`.

```
one = \markup { \finger 1 }
two = \markup { \finger 2 }
threeTwo = \markup {
  \override #'(baseline-skip . 2)
  \column {
    \finger 3
    \finger 2
  }
}
threeFour = \markup {
  \override #'(baseline-skip . 2)
  \column {
    \finger 3
    \finger 4
  }
}

\score {
  \new TabStaff {
    \tabFullNotation
    \stemUp
    e8\4~\one b\2 <g\3 e'\1>~>[ b\2 e\4]
    <a\3 fis'\1>~>~\threeTwo[ b\2 e\4]
  }
}
```



## Adding markups in a tablature

By default markups does not show in a tablature.

To make them appear, simply use the command `\revert TabStaff.TextScript.stencil`

```
%% http://lsr.di.unimi.it/LSR/Item?id=919
```

```
% by P.P.Schneider on June 2014
```

```
high = { r4 r8 <g c'> q r8 r4 }
```

```
low = { c4 r4 c8 r8 g,8 b, }
```

```
pulse = { s8^"1" s^"&" s^"2" s^"&" s^"3" s^"&" s^"4" s^"&" }
```

```
\score {
  \new TabStaff {
    \repeat unfold 2 << \high \ \ \low \ \ \pulse >>
  }
  \layout {
    \context {
      \TabStaff
      \clef moderntab
      \revert TextScript.stencil
      \override TextScript.font-series = #'bold
      \override TextScript.font-size = #-2
      \override TextScript.color = #red
    }
    \context {
      \Score
      proportionalNotationDuration = \musicLength 8
    }
  }
}
```

	<b>1 &amp; 2 &amp; 3 &amp; 4 &amp;</b>	<b>1 &amp; 2 &amp; 3 &amp; 4 &amp;</b>
<b>T</b>	1-1	1-1
<b>A</b>	0-0	0-0
<b>B</b>	3-3-2	3-3-2
	3	3

## Fingersatz auch innerhalb des Systems setzen

Normalerweise werden vertikal orientierte Fingersatzzahlen außerhalb des Systems gesetzt. Das kann aber verändert werden.

```
\relative c' {
  <c-1 e-2 g-3 b-5>2
  \override Fingering.staff-padding = #'()
  <c-1 e-2 g-3 b-5>4 g'-0
  a8[-1 b]-2 g-0 r
  \override Fingering.add-stem-support = ##f
  a[-1 b]-2 g-0 r
  \override Fingering.add-stem-support = ##t
  a[-1 b]-2 g-0 r
}
```

```
\override Fingering.add-stem-support = #only-if-beamed
a[-1 b]-2 g-0 r
}
```

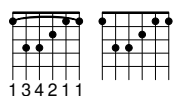


## Automatic Fretboards Barre

When automatic fretboards are used, barre indicators will be drawn whenever one finger is responsible for multiple strings.

If no finger indications are given in the chord from which the automatic fretboard is created, no barre indicators will be included, because there is no way to identify where barres should be placed.

```
\new FretBoards {
  <f,-1 c-3 f-4 a-2 c'-1 f'-1>1
  <f, c f a c' f'>1
}
```



## Changing fret orientations

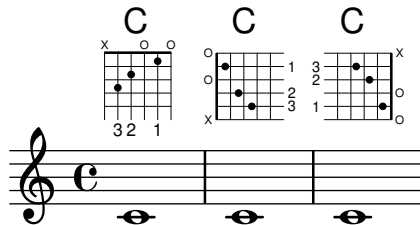
Fret diagrams can be oriented in three ways. By default the top string or fret in the different orientations will be aligned.

```
\include "predefined-guitar-fretboards.ly"
```

```
<<
\chords {
  c1
  c1
  c1
}
\new FretBoards {
  \chordmode {
    c1
    \override FretBoard.fret-diagram-details.orientation =
      #'landscape
    c1
    \override FretBoard.fret-diagram-details.orientation =
      #'opposing-landscape
    c1
  }
}
\new Voice {
  c'1
  c'1
  c'
```



```
}
>>
```



## Akkordglissando in Tabaturen

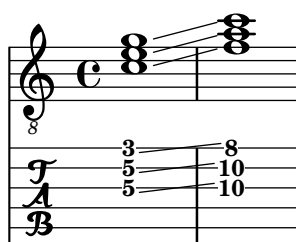
Gleiten von Akkorden kann sowohl im normalen Notensystem als auch in einer Tabulatur notiert werden. Saitennummern werden für Tabaturen benötigt, weil die automatische Saitenberechnung unterschiedlich für Akkorde und einzelne Noten funktioniert.

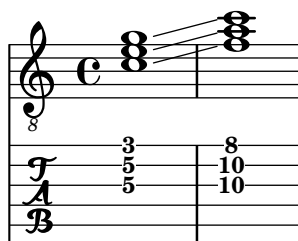
```
myMusic = \relative c' {
  <c e g>1 \glissando <f a c>
}
```

```
\score {
  <<
    \new Staff {
      \clef "treble_8"
      \myMusic
    }
    \new TabStaff \myMusic
  >>
}
```

```
\score {
  <<
    \new Staff {
      \clef "treble_8"
      \myMusic
    }
    \new TabStaff \with { \override Glissando.style = #'none } {
      \myMusic
    }
  >>
}
```

```
\paper { tagline = ##f }
```





## Akkordänderungen für Bunddiagramme

Bunddiagramme können definiert werden, sodass sie nur angezeigt werden, wenn der Akkord sich ändert oder eine neue Zeile anfängt.

```
\include "predefined-guitar-fretboards.ly"
```

```
\paper { tagline = ##f }
```

```
myChords = \chordmode {
  c1 c1 \break
  \set chordChanges = ##t
  c1 c1 \break
  c1 c1
}
```

```
<<
  \new ChordNames { \myChords }
  \new FretBoards { \myChords }
  \new Staff { \myChords }
>>
```

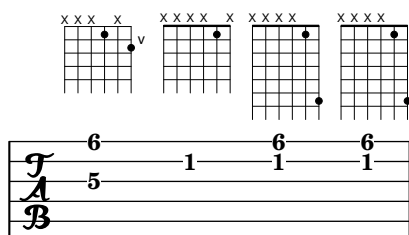
## Chords with stretched fingering for FretBoards and TabVoice

Sometimes chords with a stretched fingering are required. If not otherwise specified the context-property `maximumFretStretch` is set to 4, though. Resulting in a warning about "No string for pitch ..." and the note is omitted. You may set `maximumFretStretch` to an appropriate value or explicitly assign string-numbers to all notes of a chord.

```
%% The code below will print two warnings, which may be omitted by uncommenting:
%#(for-each (lambda (x) (ly:expect-warning "No string for pitch")) (iota 2))
```

```
mus = {
  <c' bes'>
  <c'\2 bes'>
  \set maximumFretStretch = 5
  <c' bes'>
  <c'\2 bes'\1>
}
```

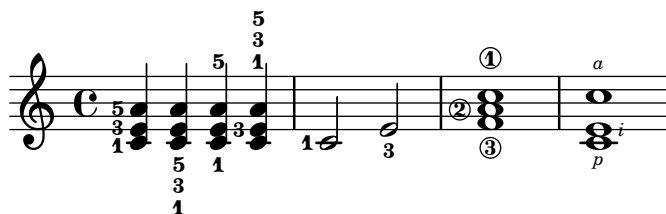
```
<<
  \new FretBoards \mus
  \new TabVoice \mus
>>
```



## Position von Fingersatz in Akkorden kontrollieren

Die Position von Fingersatzzahlen kann exakt kontrolliert werden.

```
\relative c' {
  \set fingeringOrientations = #'(left)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(down)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(down right up)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(up)
  <c-1 e-3 a-5>4
  \set fingeringOrientations = #'(left)
  <c-1>2
  \set fingeringOrientations = #'(down)
  <e-3>2
  \set stringNumberOrientations = #'(up left down)
  <f\3 a\2 c\1>1
  \set strokeFingerOrientations = #'(down right up)
  <c\rightHandFinger 1 e\rightHandFinger 2 c'\rightHandFinger 4 >
}
```



## Bunddiagramme anpassen

Eigenschaften von Bunddiagrammen können in 'fret-diagram-details verändert werden. Einstellungen mit dem `\override`-Befehl werden dem `FretBoards.FretBoard`-Objekt zugewiesen. Genauso wie `Voice` ist auch `FretBoards` ein Kontext der niedrigsten Ebene, weshalb der Kontext auch in dem Befehl weggelassen werden kann.

```
\include "predefined-guitar-fretboards.ly"
```

```
\storePredefinedDiagram #default-fret-table \chordmode { c' }
                        #guitar-tuning
                        "x;1-1-(;3-2;3-3;3-4;1-1-);"
```

```
% shorthand
```

```
oo = #(define-music-function
        (grob-path value)
        (list? scheme?)
        #{ \once \override $grob-path = #value #})
```

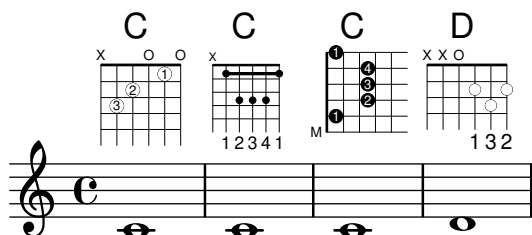
```
<<
```

```
\new ChordNames {
  \chordmode { c1 | c | c | d }
}
\new FretBoards {
  % Set global properties of fret diagram
  \override FretBoards.FretBoard.size = 1.2
  \override FretBoard.fret-diagram-details.finger-code = #'in-dot
  \override FretBoard.fret-diagram-details.dot-color = #'white
  \chordmode {
    c
    \oo FretBoard.size #1.0
    \oo FretBoard.fret-diagram-details.barre-type #'straight
    \oo FretBoard.fret-diagram-details.dot-color #'black
    \oo FretBoard.fret-diagram-details.finger-code #'below-string
    c'
    \oo FretBoard.fret-diagram-details.barre-type #'none
    \oo FretBoard.fret-diagram-details.number-type #'arabic
    \oo FretBoard.fret-diagram-details.orientation #'landscape
    \oo FretBoard.fret-diagram-details.mute-string "M"
    \oo FretBoard.fret-diagram-details.label-dir #LEFT
    \oo FretBoard.fret-diagram-details.dot-color #'black
    c'
    \oo FretBoard.fret-diagram-details.finger-code #'below-string
    \oo FretBoard.fret-diagram-details.dot-radius #0.35
    \oo FretBoard.fret-diagram-details.dot-position #0.5
    \oo FretBoard.fret-diagram-details.fret-count #3
```

```

    d
  }
}
\new Voice {
  c'1 | c' | c' | d'
}
>>

```



## Anpassung von Beschriftungs-Bunddiagrammen

Bunddiagramme können mit der Eigenschaft 'fret-diagram-details' angepasst werden. Bunddiagramme, die als Textbeschriftung eingefügt werden, können Veränderungen im Voice.TextScript-Objekt oder direkt in der Beschriftung vorgenommen werden.

```

<<
\chords { c1 | c | c | d }

\new Voice = "mel" {
  \textLengthOn
  % Set global properties of fret diagram
  \override TextScript.size = 1.2
  \override TextScript.fret-diagram-details.finger-code = #'in-dot
  \override TextScript.fret-diagram-details.dot-color = #'white

  %% C major for guitar, no barre, using defaults
  % terse style
  c'1^\markup { \fret-diagram-terse "x;3-3;2-2;o;1-1;o;" }

  %% C major for guitar, barred on third fret
  % verbose style
  % size 1.0
  % roman fret label, finger labels below string, straight barre
  c'1^\markup {
    % standard size
    \override #'(size . 1.0) {
      \override #'(fret-diagram-details . (
        (number-type . roman-lower)
        (finger-code . in-dot)
        (barre-type . straight))) {
        \fret-diagram-verbose #'(mute 6)
          (place-fret 5 3 1)
          (place-fret 4 5 2)
          (place-fret 3 5 3)
          (place-fret 2 5 4)
          (place-fret 1 3 1)
          (barre 5 1 3))
    }
  }
}
>>

```

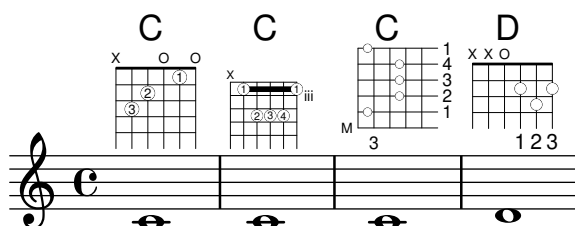
```

    }
  }
}

%% C major for guitar, barred on third fret
% verbose style
% landscape orientation, arabic numbers, M for mute string
% no barre, fret label down or left, small mute label font
c'1~\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (number-type . arabic)
    (label-dir . -1)
    (mute-string . "M")
    (orientation . landscape)
    (barre-type . none)
    (xo-font-magnification . 0.4)
    (xo-padding . 0.3))) {
    \fret-diagram-verbose #'(mute 6)
      (place-fret 5 3 1)
      (place-fret 4 5 2)
      (place-fret 3 5 3)
      (place-fret 2 5 4)
      (place-fret 1 3 1)
      (barre 5 1 3))
  }
}

%% simple D chord
% terse style
% larger dots, centered dots, fewer frets
% label below string
d'1~\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)
    (dot-position . 0.5)
    (fret-count . 3))) {
    \fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
  }
}
}
}
>>

```



## Eigene vordefinierte Bunddiagramme für andere Instrumente erstellen

Vordefinierte Bunddiagramme können für neue Instrumente hinzugefügt werden neben denen, die schon für die Gitarre definiert sind. Dieses Schnipsel zeigt, wie man eine neue Saitenstimmung definiert und dann eigene vordefinierte Bunddiagramme bestimmt. Das Beispiel ist für das venezualische Cuatro.

Dieses Schnipsel zeigt auch, wie Fingersatz in die Akkorde eingebunden werden kann, um als Referenzpunkt für die Akkordauswahl benutzt werden kann. Dieser Fingersatz wird im Bunddiagramm und in der Tabulatur, aber nicht in den Noten angezeigt.

Diese Bunddiagramme sind nicht transponierbar, weil sie Saiteninformationen enthalten. Das soll in der Zukunft verbessert werden.

```
% add FretBoards for the Cuatro
% Note: This section could be put into a separate file
%     predefined-cuatro-fretboards.ly
%     and \included into each of your compositions

cuatroTuning = #`((ly:make-pitch 0 6 0)
                  ,(ly:make-pitch 1 3 SHARP)
                  ,(ly:make-pitch 1 1 0)
                  ,(ly:make-pitch 0 5 0))

dSix = { <a\4 b\1 d\3 fis\2> }
dMajor = { <a\4 d\1 d\3 fis \2> }
aMajSeven = { <a\4 cis\1 e\3 g\2> }
dMajSeven = { <a\4 c\1 d\3 fis\2> }
gMajor = { <b\4 b\1 d\3 g\2> }

\storePredefinedDiagram #default-fret-table \dSix
                        #cuatroTuning
                        "o;o;o;o;"
\storePredefinedDiagram #default-fret-table \dMajor
                        #cuatroTuning
                        "o;o;o;3-3;"
\storePredefinedDiagram #default-fret-table \aMajSeven
                        #cuatroTuning
                        "o;2-2;1-1;2-3;"
\storePredefinedDiagram #default-fret-table \dMajSeven
                        #cuatroTuning
                        "o;o;o;1-1;"
\storePredefinedDiagram #default-fret-table \gMajor
                        #cuatroTuning
                        "2-2;o;1-1;o;"

% end of potential include file /predefined-cuatro-fretboards.ly

#(set-global-staff-size 16)

primerosNames = \chordmode {
  d:6 d a:maj7 d:maj7
  g
}
```

```

primeros = {
  \dSix \dMajor \aMajSeven \dMajSeven
  \gMajor
}

\score {
  <<
    \new ChordNames {
      \set chordChanges = ##t
      \primerosNames
    }

    \new Staff {
      \new Voice \with {
        \remove "New_fingering_engraver"
      }
      \relative c'' {
        \primeros
      }
    }

    \new FretBoards {
      \set Staff.stringTunings = #cuatroTuning
      % \override FretBoard
      % #'(fret-diagram-details string-count) = 4
      \override FretBoard.fret-diagram-details.finger-code = #'in-dot
      \primeros
    }

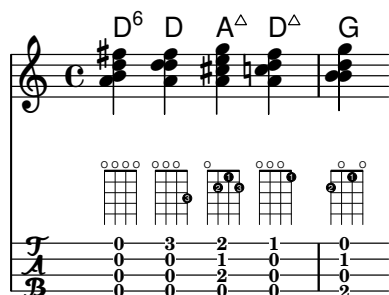
    \new TabStaff \relative c'' {
      \set TabStaff.stringTunings = #cuatroTuning
      \primeros
    }

  >>

  \layout {
    \context {
      \Score
      \override SpacingSpanner.base-shortest-duration =
        \musicLength 16
    }
  }
  \midi { }
}

```

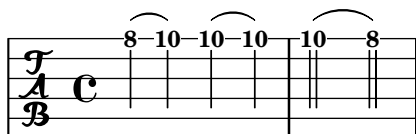




## Faking a hammer in tablatures

A hammer in tablature can be faked with slurs.

```
\score {
  \new TabStaff {
    \relative c'' {
      \tabFullNotation
      c4( d) d( d)
      d2( c)
    }
  }
}
```

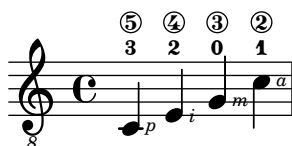


## Fingersatz, Saitennummern und Fingersatz für die rechte Hand

Dieses Beispiel kombiniert Fingersatz für die linke Hand, Saitennummern und Fingersatz für die rechte Hand.

```
#(define RH rightHandFinger)
```

```
\relative c {
  \clef "treble_8"
  <c-3\5\RH 1 >4
  <e-2\4\RH 2 >4
  <g-0\3\RH 3 >4
  <c-1\2\RH 4 >4
}
```



## Flamenco notation

For flamenco guitar, special notation is used:

- a *golpe* symbol to indicate a slap on the guitar body with the nail of the ring finger
- an arrow to indicate (the direction of) strokes
- different letters for fingering („p“: thumb, „i“: index finger, „m“: middle finger, „a“: ring finger and „x“: little finger)

- 3- and 4-finger *rasgueados*; stroke upwards with all fingers, ending with an up- and down using the index finger
- *abanicos*: strokes (in tuples) with thumb (down), little and index finger (both up). There's also an *abanico 2* where middle and ring finger are used instead of the little finger.
- *alza pua*: fast playing with the thumb

Most figures use arrows in combination with fingering; with *abanicos* and *rasgueados*, noteheads are printed only for the first chord.

This snippet contains some header-like code that can be copied as 'flamenco.ly' and included in source files.

```
%%%%%%%% Cut here ----- Start 'flamenco.ly'
```

```
% Text indicators :
```

```
abanico = ^\markup\small { \italic Abanico }
```

```
rasgueado = ^\markup\small { \italic Ras. }
```

```
alzapua = ^\markup\small { \italic Alzapua }
```

```
% Finger stroke symbols :
```

```
strokeUp = \markup\combine\override #'(thickness . 1.3) \draw-line #'(0 . 2)\raise #2 \arrow
```

```
strokeDown = \markup\combine\arrow-head #Y #DOWN ##f \override #'(thickness . 1.3) \draw-lin
```

```
% Golpe symbol :
```

```
golpe = \markup {
```

```
  \filled-box #'(0 . 1) #'(0 . 1) #0
```

```
  \hspace #-1.6
```

```
  \with-color #white
```

```
  \filled-box #'(0.15 . 0.85) #'(0.15 . 0.85) #0
```

```
}
```

```
% Strokes, fingers and golpe command :
```

```
RHp = \rightHandFinger #1
```

```
RHi = \rightHandFinger #2
```

```
RHm = \rightHandFinger #3
```

```
RHa = \rightHandFinger #4
```

```
RHx = \rightHandFinger #5
```

```
RHu = \rightHandFinger \strokeUp
```

```
RHd = \rightHandFinger \strokeDown
```

```
RHg = \rightHandFinger \golpe
```

```
% Just handy :)
```

```
tupletOff = {
```

```
  \once \omit TupletNumber
```

```
  \once \omit TupletBracket
```

```
}
```

```
tupletsOff = {
```

```
  \omit TupletNumber
```

```
  \override TupletBracket.bracket-visibility = #'if-no-beam
```

```
}
```

```
tupletsOn = {
```

```
  \override TupletBracket.bracket-visibility = #'default
```

```

\undo \omit TupletNumber
}

headsOff = {
  \hide TabNoteHead
  \hide NoteHead
  \override NoteHead.no-ledgers = ##t
}

headsOn = {
  \override TabNoteHead.transparent = ##f
  \override NoteHead.transparent = ##f
  \override NoteHead.no-ledgers = ##f
}

%%%%%%%% Cut here ----- End 'flamenco.ly'
%%%%%%%%

part = \relative c' {
  \set strokeFingerOrientations = #'(up)
  \key a\major
  <a, e' a cis e\RHu\RHl>8
  <a e' a cis e\RHd\RHl>8
  r4
  r2^\markup\golpe
  <a e' a cis e\RHu\RHl>8
  <a e' a cis e\RHd\RHl>8
  <a e' a cis e\RHu\RHl\RHg>8
  <a e' a cis e\RHd\RHl>8
  r2
  <a e' a cis e\RHu\RHl>16\rasgueado
  \headsOff
  <a e' a cis e\RHu\RHm>
  <a e' a cis e\RHu\RHl>
  <a e' a cis e\RHd\RHl>~
  \headsOn
  <a e' a cis e>2
  r4
  \tupletOff
  \tuplet 5/4 {
    <a e' a cis e\RHu\RHx>16\rasgueado
    \headsOff
    <a e' a cis e\RHu\RHl>
    <a e' a cis e\RHu\RHm>
    <a e' a cis e\RHu\RHl>
    <a e' a cis e\RHd\RHl>~
    \headsOn
  }
  <a e' a cis e>2
  r4
  \tupletsOff
  \tuplet 3/2 {

```

```

    <a e' a cis e\RHd\RHp>8\abanico
    \headsOff
    <a e' a cis e\RHu\RHx>
    <a e' a cis e\RHu\RHl>
    \headsOn
}
\tuplet 3/2 {
    <a e' a cis e\RHd\RHp>8
    \headsOff
    <a e' a cis e\RHu\RHx>
    <a e' a cis e\RHu\RHl>
    \headsOn
}
\tuplet 3/2 {
    <a e' a cis e\RHd\RHp>8
    \headsOff
    <a e' a cis e\RHu\RHx>
    <a e' a cis e\RHu\RHl>
    \headsOn
}
\tuplet 3/2 {
    <a e' a cis e\RHd\RHp>8
    \headsOff
    <a e' a cis e\RHu\RHx>
    <a e' a cis e\RHu\RHl>
    \headsOn
}
\tupletsOff
\override Beam.positions = #'(2 . 2)
\tuplet 3/2 {
    a8\RHp\alzapua
    <e' a\RHu\RHg>
    <e a\RHd>
}
\tuplet 3/2 {
    a,8\RHp
    <e' a\RHu\RHg>
    <e a\RHd>
}
\tuplet 3/2 {
    a,8\RHp
    <e' a\RHu\RHg>
    <e a\RHd>
}
\tuplet 3/2 {
    a,8\RHp
    <e' a\RHu\RHg>
    <e a\RHd>
}
\tupletsOn
<a, e' a\RHu\RHm>1
\bar "|."

```

```

}

\score {
  \new StaffGroup <<
    \context Staff = "part" <<
      \clef "G_8"
      {
        \part
      }
    >>
    \context TabStaff {
      \part
    }
  >>
  \layout {
    ragged-right = ##t
  }
}

\paper { tagline = ##f }

```

The image displays two musical staves with fretted string notation. The top staff is in G major (two sharps) and common time, featuring four measures of chords with various articulations like 'i' (upbow) and 'Ras.' (rasgueado). The bottom staff is in G major and 5/8 time, featuring two measures: 'Abanico' with a sequence of chords and 'Alzapua' with a sequence of chords and a final measure with a 'm' (marcato) articulation. Both staves include a guitar staff with fret numbers (0, 2, 2, 2, 0) and a tablature staff with fret numbers (0, 2, 2, 2, 0).

## Fret diagrams explained and developed

This snippet shows many possibilities for obtaining and tweaking fret diagrams.

```

<<
\chords {
  a2 a
  \repeat unfold 3 {
    c c c d d
  }
}

```

```

}

\new Voice = "mel" {
  \textLengthOn
  % Set global properties of fret diagram
  \override TextScript.size = #1.2
  \override TextScript.fret-diagram-details.finger-code = #'below-string
  \override TextScript.fret-diagram-details.dot-color = #'black

  %% A chord for ukulele
  a'2^\markup {
    \override #'(fret-diagram-details . (
      (string-count . 4)
      (dot-color . white)
      (finger-code . in-dot))) {
      \fret-diagram "4-2-2;3-1-1;2-o;1-o;"
    }
  }

  %% A chord for ukulele, with formatting defined in definition string
  % 1.2 * size, 4 strings, 4 frets, fingerings below string
  % dot radius .35 of fret spacing, dot position 0.55 of fret spacing
  a'2^\markup {
    \override #'(fret-diagram-details . (
      (dot-color . white)
      (open-string . "o"))) {
      \fret-diagram "s:1.2;w:4;h:3;f:2;d:0.35;p:0.55;4-2-2;3-1-1;2-o;1-o;"
    }
  }

  %% These chords will be in normal orientation

  %% C major for guitar, barred on third fret
  % verbose style
  % roman fret label, finger labels below string, straight barre
  c'2^\markup {
    % 110% of default size
    \override #'(size . 1.1) {
      \override #'(fret-diagram-details . (
        (number-type . roman-lower)
        (finger-code . below-string)
        (barre-type . straight))) {
        \fret-diagram-verbose #'((mute 6)
          (place-fret 5 3 1)
          (place-fret 4 5 2)
          (place-fret 3 5 3)
          (place-fret 2 5 4)
          (place-fret 1 3 1)
          (barre 5 1 3))
        }
      }
    }
  }
}

```

```

%% C major for guitar, barred on third fret
%% Double barre used to test barre function
% verbose style
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . arabic)
      (dot-label-font-mag . 0.9)
      (finger-code . in-dot)
      (fret-label-font-mag . 0.6)
      (fret-label-vertical-offset . 0)
      (label-dir . -1)
      (mute-string . "M")
      (xo-font-magnification . 0.4)
      (xo-padding . 0.3))) {
      \fret-diagram-verbose #'((mute 6)
        (place-fret 5 3 1)
        (place-fret 4 5 2)
        (place-fret 3 5 3)
        (place-fret 2 5 4)
        (place-fret 1 3 1)
        (barre 4 2 5)
        (barre 5 1 3))
    }
  }
}

%% C major for guitar, with capo on third fret
% verbose style
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . roman-upper)
      (dot-label-font-mag . 0.9)
      (finger-code . none)
      (fret-label-vertical-offset . 0.5)
      (xo-font-magnification . 0.4)
      (xo-padding . 0.3))) {
      \fret-diagram-verbose #'((mute 6)
        (capo 3)
        (open 5)
        (place-fret 4 5 1)
        (place-fret 3 5 2)
        (place-fret 2 5 3)
        (open 1))
    }
  }
}

```

```

%% simple D chord
d'2^\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)
    (string-thickness-factor . 0.3)
    (dot-position . 0.5)
    (fret-count . 3))) {
    \fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
  }
}

%% simple D chord, large top fret thickness
d'2^\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)
    (dot-position . 0.5)
    (top-fret-thickness . 7)
    (fret-count . 3))) {
    \fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
  }
}

% These chords will be in landscape orientation
\override TextScript.fret-diagram-details.orientation = #'landscape

%% C major for guitar, barred on third fret
% verbose style
% roman fret label, finger labels below string, straight barre
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . roman-lower)
      (finger-code . below-string)
      (barre-type . straight))) {
      \fret-diagram-verbose #'((mute 6)
        (place-fret 5 3 1)
        (place-fret 4 5 2)
        (place-fret 3 5 3)
        (place-fret 2 5 4)
        (place-fret 1 3 1)
        (barre 5 1 3))
    }
  }
}

%% C major for guitar, barred on third fret
%% Double barre used to test barre function
% verbose style
c'2^\markup {

```



```

% 110% of default size
\override #'(size . 1.1) {
  \override #'(fret-diagram-details . (
    (number-type . arabic)
    (dot-label-font-mag . 0.9)
    (finger-code . in-dot)
    (fret-label-font-mag . 0.6)
    (fret-label-vertical-offset . 0)
    (label-dir . -1)
    (mute-string . "M")
    (xo-font-magnification . 0.4)
    (xo-padding . 0.3))) {
    \fret-diagram-verbose #'((mute 6)
      (place-fret 5 3 1)
      (place-fret 4 5 2)
      (place-fret 3 5 3)
      (place-fret 2 5 4)
      (place-fret 1 3 1)
      (barre 4 2 5)
      (barre 5 1 3))
  }
}
}

%% C major for guitar, with capo on third fret
% verbose style
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . roman-upper)
      (dot-label-font-mag . 0.9)
      (finger-code . none)
      (fret-label-vertical-offset . 0.5)
      (xo-font-magnification . 0.4)
      (xo-padding . 0.3))) {
      \fret-diagram-verbose #'((mute 6)
        (capo 3)
        (open 5)
        (place-fret 4 5 1)
        (place-fret 3 5 2)
        (place-fret 2 5 3)
        (open 1))
      }
    }
  }

%% simple D chord
d'2^\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)

```

```

        (dot-position . 0.5)
        (fret-count . 3))) {
    \fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
  }
}

%% simple D chord, large top fret thickness
d'2^\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)
    (dot-position . 0.5)
    (top-fret-thickness . 7)
    (fret-count . 3))) {
    \fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
  }
}

% These chords will be in opposing-landscape orientation
\override TextScript.fret-diagram-details.orientation = #'opposing-landscape

%% C major for guitar, barred on third fret
% verbose style
% roman fret label, finger labels below string, straight barre
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . roman-lower)
      (finger-code . below-string)
      (barre-type . straight))) {
      \fret-diagram-verbose #'((mute 6)
        (place-fret 5 3 1)
        (place-fret 4 5 2)
        (place-fret 3 5 3)
        (place-fret 2 5 4)
        (place-fret 1 3 1)
        (barre 5 1 3))
    }
  }
}

%% C major for guitar, barred on third fret
%% Double barre used to test barre function
% verbose style
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . arabic)
      (dot-label-font-mag . 0.9)
      (finger-code . in-dot)

```

```

        (fret-label-font-mag . 0.6)
        (fret-label-vertical-offset . 0)
        (label-dir . -1)
        (mute-string . "M")
        (xo-font-magnification . 0.4)
        (xo-padding . 0.3))) {
\ fret-diagram-verbose #'((mute 6)
        (place-fret 5 3 1)
        (place-fret 4 5 2)
        (place-fret 3 5 3)
        (place-fret 2 5 4)
        (place-fret 1 3 1)
        (barre 4 2 5)
        (barre 5 1 3))
    }
}
}

%% C major for guitar, with capo on third fret
% verbose style
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . roman-upper)
      (dot-label-font-mag . 0.9)
      (finger-code . none)
      (fret-label-vertical-offset . 0.5)
      (xo-font-magnification . 0.4)
      (xo-padding . 0.3))) {
      \ fret-diagram-verbose #'((mute 6)
        (capo 3)
        (open 5)
        (place-fret 4 5 1)
        (place-fret 3 5 2)
        (place-fret 2 5 3)
        (open 1))
    }
  }
}

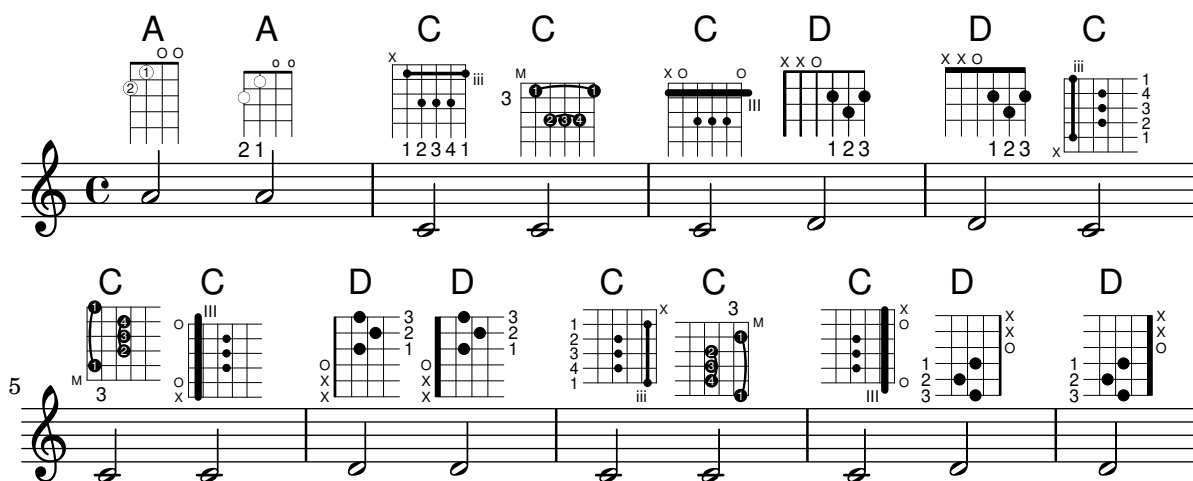
%% simple D chord
d'2^\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)
    (dot-position . 0.5)
    (fret-count . 3))) {
    \ fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
  }
}

```

```

%% simple D chord, large top fret thickness
d'2~\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)
    (dot-position . 0.5)
    (top-fret-thickness . 7)
    (fret-count . 3))) {
    \fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
  }
}
}
}
>>

```



## Alternative Bunddiagrammtabellen

Alternative Bunddiagrammtabellen können erstellt werden. Sie können benutzt werden, um alternative Bunddiagramme für einen bestimmten Akkord zu haben.

Damit eine alternative Bunddiagrammentabelle benutzt werden kann, muss die Tabelle zuerst erstellt werden. Dann werden die Bunddiagramme zur Tabelle hinzugefügt.

Die erstellte Bunddiagrammtabelle kann auch leer sein, oder sie kann aus einer existierenden Tabelle kopiert werden.

Die Tabelle, die eingesetzt wird, um vordefinierte Bunddiagramme anzuzeigen, wird mit der Eigenschaft `\predefinedDiagramTable` ausgewählt.

```
\include "predefined-guitar-fretboards.ly"
```

```

% Make a blank new fretboard table
#(define custom-fretboard-table-one
  (make-fretboard-table))

```

```

% Make a new fretboard table as a copy of default-fret-table
#(define custom-fretboard-table-two
  (make-fretboard-table default-fret-table))

```

```

% Add a chord to custom-fretboard-table-one
\storePredefinedDiagram #custom-fretboard-table-one
  \chordmode {c}

```

```

#guitar-tuning
"3-(;3;5;5;5;3-);"

% Add a chord to custom-fretboard-table-two
\storePredefinedDiagram #custom-fretboard-table-two
\chordmode {c}
#guitar-tuning
"x;3;5;5;5;o;"

<<
\chords {
  c1 | d1 |
  c1 | d1 |
  c1 | d1 |
}
\new FretBoards {
  \chordmode {
    \set predefinedDiagramTable = #default-fret-table
    c1 | d1 |
    \set predefinedDiagramTable = #custom-fretboard-table-one
    c1 | d1 |
    \set predefinedDiagramTable = #custom-fretboard-table-two
    c1 | d1 |
  }
}
\new Staff {
  \clef "treble_8"
  <<
  \chordmode {
    c1 | d1 |
    c1 | d1 |
    c1 | d1 |
  }
  {
    s1_\markup "Default table" | s1 |
    s1_\markup \column {"New table" "from empty"} | s1 |
    s1_\markup \column {"New table" "from default"} | s1 |
  }
  >>
}
>>

```

The image displays fretboard diagrams and staff notation for chords C and D. The diagrams show fingerings and string numbers. The staff notation shows the chords in treble clef with a key signature of one sharp (F#).

Chord	Fretboard Diagram	Staff Notation	Label
C	Diagram 1: C major, open strings, 3rd finger on 2nd string, 2nd finger on 3rd string, 1st finger on 4th string.	Staff 1: C major chord.	Default table
D	Diagram 2: D major, 1st finger on 2nd string, 2nd finger on 3rd string, 3rd finger on 4th string.	Staff 2: D major chord.	New table from empty
C	Diagram 3: C major, 1st finger on 2nd string, 2nd finger on 3rd string, 3rd finger on 4th string.	Staff 3: C major chord.	New table from default
D	Diagram 4: D major, 1st finger on 2nd string, 2nd finger on 3rd string, 3rd finger on 4th string.	Staff 4: D major chord.	New table from default

## Flageolet von Bundinstrumenten in einer Tabulatur

Flageolet für Bundinstrumente:

```

pinchedHarmonics = {
  \textSpannerDown
  \override TextSpanner.bound-details.left.text =
    \markup {\halign #-0.5 \teeny "PH" }
  \override TextSpanner.style = #'dashed-line
  \override TextSpanner.dash-period = 0.6
  \override TextSpanner.bound-details.right.attach-dir = 1
  \override TextSpanner.bound-details.right.text =
    \markup { \draw-line #'(0 . 1) }
  \override TextSpanner.bound-details.right.padding = -0.5
}

harmonics = {
  % artificial harmonics (AH)
  \textLengthOn
  <\parenthesize b b'\harmonic>4_\markup { \teeny "AH 16" }
  <\parenthesize g g'\harmonic>4_\markup { \teeny "AH 17" }
  <\parenthesize d d'\harmonic>2_\markup { \teeny "AH 19" }

  % pinched harmonics (PH)
  \pinchedHarmonics
  <a'\harmonic>2\startTextSpan
  <d'\harmonic>4
  <e'\harmonic>4\stopTextSpan

  % tapped harmonics (TH)
  <\parenthesize g\4 g'\harmonic>4_\markup { \teeny "TH 17" }
  <\parenthesize a\4 a'\harmonic>4_\markup { \teeny "TH 19" }
  <\parenthesize c'\3 c'\harmonic>2_\markup { \teeny "TH 17" }

  % touch harmonics (TCH)
  a4( <e'\harmonic>2. )_\markup { \teeny "TCH" }
}

frettedStrings = {
  % artificial harmonics (AH)
  \harmonicByFret 4 g4\3
  \harmonicByFret 5 d4\4
  \harmonicByFret 7 g2\3

  % pinched harmonics (PH)
  \harmonicByFret 7 d2\4
  \harmonicByFret 5 d4\4
  \harmonicByFret 7 a4\5

  % tapped harmonics (TH)
  \harmonicByFret 5 d4\4
  \harmonicByFret 7 d4\4
  \harmonicByFret 5 g2\3

```

```

% touch harmonics (TCH)
a4 \harmonicByFret 9 g2.\3
}

\score {
  <<
    \new Staff
    \with { \omit StringNumber } {
      \new Voice {
        \clef "treble_8"
        \harmonics
      }
    }
    \new TabStaff {
      \new TabVoice {
        \frettedStrings
      }
    }
  >>
}

```

The image shows a musical score for guitar. The top staff is a treble clef with a key signature of one sharp (F#) and a common time signature (C). It contains a sequence of notes with diamond-shaped heads, representing harmonics. Below the staff, there are labels: '8' for the first note, 'AH 16' for the second, 'AH 17' for the third, 'AH 19' for the fourth, 'PH' for the fifth, 'TH 17' for the sixth, 'TH 19' for the seventh, 'TH 17' for the eighth, and 'TCH' for the ninth. The bottom staff is a tablature staff with six lines, labeled 'T', 'A', and 'B' on the left. It contains fret numbers in parentheses: (4), (5), (7), (7), (5), (7), (5), (7), (5), and 2-(9).

## Guitar slides

Unlike glissandos, slides may go from an imprecise point of the fretboard to a specific fret. A good way to do this is to add a hidden grace note before the note which is actually played, as demonstrated in the following example.

```

%% Hide fret number: useful to draw slide into/from a casual point of
%% the fretboard.

```

```

hideFretNumber = {
  \once \hide TabNoteHead
  \once \hide NoteHead
  \once \hide Stem
  \once \override NoteHead.no-ledgers = ##t
  \once \override Glissando.bound-details.left.padding = #0.3
}

music= \relative c' {
  \grace { \hideFretNumber d8\2 \glissando s2 } g2\2
  \grace { \hideFretNumber g8\2 \glissando s2 } d2 |

  \grace { \hideFretNumber c,8 \glissando s } f4\5^\markup \tiny { Slide into }
  \grace { \hideFretNumber f8 \glissando s } a4\4
}

```

```

\grace { \hideFretNumber e'8\3 \glissando s } b4\3~\markup \tiny { Slide from }
\grace { \hideFretNumber b'8 \glissando s2 } g4 |
}

\score {
  <<
    \new Staff {
      \clef "G_8"
      \music
    }
    \new TabStaff {
      \music
    }
  >>
}

\paper { tagline = ##f }

```

## Schlagrhythmus für Gitarren

In Gitarrennotation kann neben Melodie, Akkordbezeichnungen und Bunddiagrammen auch der Schlagrhythmus angegeben werden.

```

\include "predefined-guitar-fretboards.ly"
<<
  \new ChordNames {
    \chordmode {
      c1 | f | g | c
    }
  }
  \new FretBoards {
    \chordmode {
      c1 | f | g | c
    }
  }
  \new Voice \with {
    \consists "Pitch_squash_engraver"
  } {
    \relative c'' {
      \improvisationOn
      c4 c8 c c4 c8 c
      f4 f8 f f4 f8 f
      g4 g8 g g4 g8 g
      c4 c8 c c4 c8 c
    }
  }
}

```



```

    }
  }
  \new Voice = "melody" {
    \relative c' {
      c2 e4 e4
      f2. r4
      g2. a4
      e4 c2.
    }
  }
  \new Lyrics {
    \lyricsto "melody" {
      This is my song.
      I like to sing.
    }
  }
}
>>

```

The image shows a musical score for a song. It consists of two staves. The top staff is a guitar tablature with four chords: C, F, G, and C. Each chord is represented by a fretboard diagram with fingerings: C (3, 2, 1), F (1, 3, 4, 2, 1, 1), G (2, 1, 3), and C (3, 2, 1). The bottom staff is a vocal melody in treble clef, with lyrics: "This is my song. I like to sing." The melody is written in a simple, folk-like style with a key signature of one flat (B-flat) and a common time signature (C).

## Hammer on and pull off

Hammer-on and pull-off can be obtained using slurs.

```

\new TabStaff {
  \relative c' {
    d4( e\2)
    a( g)
  }
}

```

The image shows a musical notation for a hammer-on and pull-off. It is a single staff with a treble clef. The notation shows a sequence of notes: a quarter note on D4, followed by a slur over an eighth note on E4 and a quarter note on F4. The slur is labeled with '3' and '5' above the notes, indicating the frets. The staff is labeled with 'T', 'A', and 'B' on the left side, representing the strings.

## Hammer on and pull off using chords

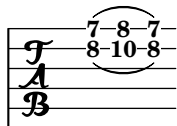
When using hammer-on or pull-off with chorded notes, only a single arc is drawn. However „double arcs“ are possible by setting the doubleSlurs property to #t.

```

\new TabStaff {
  \relative c' {
    % chord hammer-on and pull-off
    \set doubleSlurs = ##t
    <g' b>8( <a c> <g b>)
  }
}

```

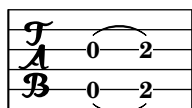
```
}
}
```



## Hammer on and pull off using voices

The arc of hammer-on and pull-off is upwards in voices one and three and downwards in voices two and four:

```
\new TabStaff {
  \relative c' {
    << { \voiceOne g2( a) }
    \\ { \voiceTwo a,( b) }
    >> \oneVoice
  }
}
```



## How to change fret diagram position

If you want to move the position of a fret diagram, for example, to avoid collision, or to place it between two notes, you have various possibilities:

- 1) modify #'padding or #'extra-offset values (as shown in the first snippet)
- 2) you can add an invisible voice and attach the fret diagrams to the invisible notes in that voice (as shown in the second example).

If you need to move the fret according with a rhythmic position inside the bar (in the example, the third beat of the measure) the second example is better, because the fret is aligned with the third beat itself.

```
\header { tagline = ##f }
```

```
harmonies = \chordmode
{
  a8:13
  % THE FOLLOWING IS THE COMMAND TO MOVE THE CHORD NAME
  \once \override ChordNames.ChordName.extra-offset = #'(10 . 0)
  b8:13 s2.
  % THIS LINE IS THE SECOND METHOD
  s4 s4 b4:13
}
```

```
\score
{
  <<
    \new ChordNames \harmonies
    \new Staff
    {a8^\markup { \fret-diagram "6-x;5-0;4-2;3-0;2-0;1-2;" }
  }
```

```
% THE FOLLOWING IS THE COMMAND TO MOVE THE FRET DIAGRAM
\once \override TextScript.extra-offset = #'(10 . 0)
b4.~\markup { \fret-diagram "6-x;5-2;4-4;3-2;2-2;1-4;" } b4. a8\break
% HERE IS THE SECOND METHOD
<<
{ a8 b4.~ b4. a8}
{ s4 s4 s4~\markup { \fret-diagram "6-x;5-2;4-4;3-2;2-2;1-4;" }
}
>>
}
>>
}
```

## Vorlage für Jazz-Combo

Hier ist ein ziemlich kompliziertes Beispiel für ein Jazz-Ensemble. Achtung: Alle Instrumente sind in `\key c \major` (C-Dur) notiert. Das bezieht sich auf die klingende Musik: LilyPond transponiert die Tonart automatisch, wenn sich die Noten innerhalb eines `ranspose`-Abschnitts befinden.

```
\header {
  title = "Song"
  subtitle = "(tune)"
  composer = "Me"
  meter = "moderato"
  piece = "Swing"
  tagline = \markup {
    \column {
      "LilyPond example file by Amelie Zapf,"
      "Berlin 07/07/2003"
    }
  }
}

% To make the example display in the documentation
\paper {
  paper-width = 130
}

%#(set-global-staff-size 16)
\include "english.ly"
```

```

%%%%%%%%%%%%%% Some macros %%%%%%%%%%%%%%%

sl = {
  \override NoteHead.style = #'slash
  \hide Stem
}
nsl = {
  \revert NoteHead.style
  \undo \hide Stem
}
crOn = \override NoteHead.style = #'cross
crOff = \revert NoteHead.style

%% insert chord name style stuff here.

jazzChords = { }

%%%%%%%%%%%%%% Keys 'n' thangs %%%%%%%%%%%%%%%

global = { \time 4/4 }

Key = { \key c \major }

% ##### Horns #####

% ----- Trumpet -----
trpt = \transpose c d \relative c' {
  \Key
  c1 | c | c |
}
trpHarmony = \transpose c' d {
  \jazzChords
}
trumpet = {
  \global
  \clef treble
  <<
  \trpt
  >>
}

% ----- Alto Saxophone -----
alto = \transpose c a \relative c' {
  \Key
  c1 | c | c |
}
altoHarmony = \transpose c' a {
  \jazzChords
}
altoSax = {
  \global
  \clef treble

```

```

    <<
    \alto
    >>
}

% ----- Baritone Saxophone -----
bari = \transpose c a' \relative c {
    \Key
    c1
    c1
    \sl
    d4^"Solo" d d d
    \ns1
}
bariHarmony = \transpose c' a \chordmode {
    \jazzChords s1 s d2:maj e:m7
}
bariSax = {
    \global
    \clef treble
    <<
    \bari
    >>
}

% ----- Trombone -----
tbone = \relative c {
    \Key
    c1 | c | c
}
tboneHarmony = \chordmode {
    \jazzChords
}
trombone = {
    \global
    \clef bass
    <<
    \tbone
    >>
}

% ##### Rhythm Section #####

% ----- Guitar -----
gtr = \relative c'' {
    \Key
    c1
    \sl
    b4 b b b
    \ns1
    c1
}

```

```

gtrHarmony = \chordmode {
  \jazzChords
  s1 c2:min7+ d2:maj9
}
guitar = {
  \global
  \clef treble
  <<
    \gtr
  >>
}

%% ----- Piano -----
rhUpper = \relative c'' {
  \voiceOne
  \Key
  c1 | c | c
}
rhLower = \relative c' {
  \voiceTwo
  \Key
  e1 | e | e
}

lhUpper = \relative c' {
  \voiceOne
  \Key
  g1 | g | g
}
lhLower = \relative c {
  \voiceTwo
  \Key
  c1 | c | c
}

PianoRH = {
  \clef treble
  \global
  <<
    \new Voice = "one" \rhUpper
    \new Voice = "two" \rhLower
  >>
}

PianoLH = {
  \clef bass
  \global
  <<
    \new Voice = "one" \lhUpper
    \new Voice = "two" \lhLower
  >>
}

```

```

piano = {
  <<
    \new Staff = "upper" \PianoRH
    \new Staff = "lower" \PianoLH
  >>
}

% ----- Bass Guitar -----
Bass = \relative c {
  \Key
  c1 | c | c
}
bass = {
  \global
  \clef bass
  <<
    \Bass
  >>
}

% ----- Drums -----
up = \drummode {
  \voiceOne
  hh4 <hh sn> hh <hh sn>
  hh4 <hh sn> hh <hh sn>
  hh4 <hh sn> hh <hh sn>
}
down = \drummode {
  \voiceTwo
  bd4 s bd s
  bd4 s bd s
  bd4 s bd s
}

drumContents = {
  \global
  <<
    \new DrumVoice \up
    \new DrumVoice \down
  >>
}

%%%%%%%%%% It All Goes Together Here %%%%%%%%%%%

\score {
  <<
    \new StaffGroup = "horns" <<
      \new Staff = "trumpet" \with { instrumentName = "Trumpet" }
      \trumpet
      \new Staff = "altosax" \with { instrumentName = "Alto Sax" }
      \altoSax
      \new ChordNames = "barichords" \with { instrumentName = "Trumpet" }
    >>
  >>
}

```

```

\bariHarmony
\new Staff = "barisax" \with { instrumentName = "Bari Sax" }
\bariSax
\new Staff = "trombone" \with { instrumentName = "Trombone" }
\trombone
>>

\new StaffGroup = "rhythm" <<
  \new ChordNames = "chords" \gtrHarmony
  \new Staff = "guitar" \with { instrumentName = "Guitar" }
  \guitar
  \new PianoStaff = "piano" \with {
    instrumentName = "Piano"
    midiInstrument = "acoustic grand"
  }
  \piano
  \new Staff = "bass" \with { instrumentName = "Bass" }
  \bass
  \new DrumStaff \with { instrumentName = "Drums" }
  \drumContents
>>
>>
\layout {
  \context { \Staff \RemoveEmptyStaves }
  \context {
    \Score
    \override BarNumber.padding = 3
    \override RehearsalMark.padding = 2
    skipBars = ##t
  }
}
\midi { }
}

```

## Song

(tune)

Me

moderato

Swing



Trumpet

Alto Sax

Bari Sax

Trombone

Guitar

Piano

Bass

Drums

$B^{\Delta}$   $C\sharp m^7$   
Solo

$Cm^{\Delta}$   $D^{\Delta 9}$

## Laissez vibrer ties

Laissez vibrer ties have a fixed size. Their formatting can be tuned using 'tie-configuration.

```
\relative c' {
  <c e g>4\laissezVibrer r <c f g>\laissezVibrer r
  <c d f g>4\laissezVibrer r <c d f g>4.\laissezVibrer r8

  <c d e f>4\laissezVibrer r
  \override LaissezVibrerTieColumn.tie-configuration
    = #`((-7 . ,DOWN)
      (-5 . ,DOWN)
      (-3 . ,UP)
      (-1 . ,UP))
  <c d e f>4\laissezVibrer r
}
```



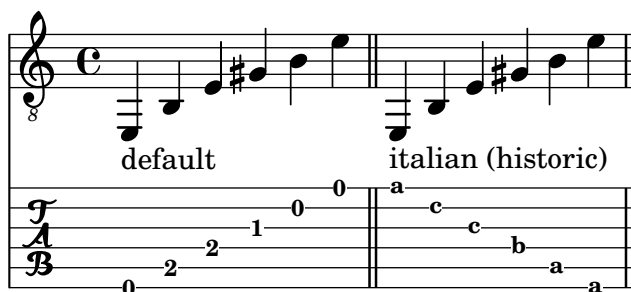
## Let TabStaff print the topmost string at bottom

In tablatures usually the first string is printed topmost. If you want to have it at the bottom change the `stringOneTopmost`-context-property. For a context-wide setting this could be done in layout as well.

```
%\layout {
%  \context {
%    \Score
%      stringOneTopmost = ##f
%  }
%  \context {
%    \TabStaff
%      tablatureFormat = #fret-letter-tablature-format
%  }
%}
```

```
m = {
  \cadenzaOn
  e, b, e gis! b e'
  \bar "||"
}
```

```
<<
  \new Staff { \clef "G_8" <>_"default" \m <>_"italian (historic)"\m }
  \new TabStaff
  {
    \m
    \set Score.stringOneTopmost = ##f
    \set TabStaff.tablatureFormat = #fret-letter-tablature-format
    \m
  }
>>
```



## Letter tablature formatting

Tablature can be formatted using letters instead of numbers.

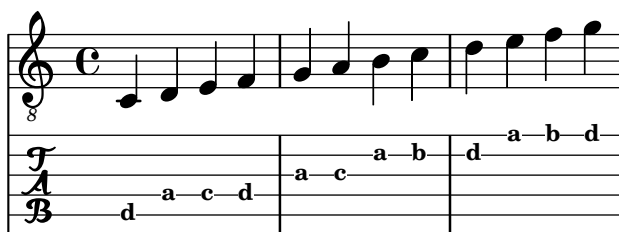
```
music = \relative c {
  c4 d e f
  g4 a b c
}
```

```

d4 e f g
}

<<
\new Staff {
  \clef "G_8"
  \music
}
\new TabStaff \with {
  tablatureFormat = #fret-letter-tablature-format
}
{
  \music
}
>>

```



## Referenz für Flageolett von offenen Saiten

Referenz für Flageolett von offenen Saiten:

```

openStringHarmonics = {
  \textSpannerDown
  \override TextSpanner.staff-padding = 3
  \override TextSpanner.dash-fraction = 0.3
  \override TextSpanner.dash-period = 1

  %first harmonic
  \override TextSpanner.bound-details.left.text =
    \markup\small "1st harm. "
  \harmonicByFret 12 e,\6\startTextSpan
  \harmonicByRatio #1/2 e,\6\stopTextSpan

  %second harmonic
  \override TextSpanner.bound-details.left.text =
    \markup\small "2nd harm. "
  \harmonicByFret 7 e,\6\startTextSpan
  \harmonicByRatio #1/3 e,\6
  \harmonicByFret 19 e,\6
  \harmonicByRatio #2/3 e,\6\stopTextSpan
  %\harmonicByFret 19 < e,\6 a,\5 d\4 >
  %\harmonicByRatio #2/3 < e,\6 a,\5 d\4 >

  %third harmonic
  \override TextSpanner.bound-details.left.text =
    \markup\small "3rd harm. "
  \harmonicByFret 5 e,\6\startTextSpan

```

```

\harmonicByRatio #1/4 e,\6
\harmonicByFret 24 e,\6
\harmonicByRatio #3/4 e,\6\stopTextSpan
\break

%fourth harmonic
\override TextSpanner.bound-details.left.text =
  \markup\small "4th harm. "
\harmonicByFret 4 e,\6\startTextSpan
\harmonicByRatio #1/5 e,\6
\harmonicByFret 9 e,\6
\harmonicByRatio #2/5 e,\6
\harmonicByFret 16 e,\6
\harmonicByRatio #3/5 e,\6\stopTextSpan

%fifth harmonic
\override TextSpanner.bound-details.left.text =
  \markup\small "5th harm. "
\harmonicByFret 3 e,\6\startTextSpan
\harmonicByRatio #1/6 e,\6\stopTextSpan
\break

%sixth harmonic
\override TextSpanner.bound-details.left.text =
  \markup\small "6th harm. "
\harmonicByFret 2.7 e,\6\startTextSpan
\harmonicByRatio #1/7 e,\6\stopTextSpan

%seventh harmonic
\override TextSpanner.bound-details.left.text =
  \markup\small "7th harm. "
\harmonicByFret 2.3 e,\6\startTextSpan
\harmonicByRatio #1/8 e,\6\stopTextSpan

%eighth harmonic
\override TextSpanner.bound-details.left.text =
  \markup\small "8th harm. "
\harmonicByFret 2 e,\6\startTextSpan
\harmonicByRatio #1/9 e,\6\stopTextSpan
}

\score {
  <<
    \new Staff
    \with { \omit StringNumber } {
      \new Voice {
        \clef "treble_8"
        \openStringHarmonics
      }
    }
    \new TabStaff {
      \new TabVoice {

```

```

\openStringHarmonics
}
}
>>
}

```

```

\paper { tagline = ##f }

```

8 *1st harm.* *2nd harm.* *3rd harm.*

(12) (12) (7) (7) (19) (19) (5) (5) (24) (24)

6 8 *4th harm.* *5th harm.*

(4) (4) (9) (9) (16) (16) (3) (3)

10 8 *6th harm.* *7th harm.* *8th harm.*

(2.7) (2.7) (2.3) (2.3) (2) (2)

## Positionierung von Fingersatz der rechten Hand

Man kann die Positionierung von Fingersatz der rechten Hand besser kontrollieren, wenn eine bestimmte Eigenschaft gesetzt wird, wie das folgende Beispiel zeigt:

```

\define RH rightHandFinger

```

```

\relative c {
  \clef "treble_8"

  \set strokeFingerOrientations = #'(up down)
  <c\RH 1 e\RH 2 g\RH 3 c\RH 4 >4

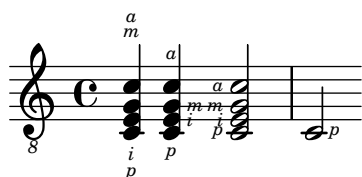
  \set strokeFingerOrientations = #'(up right down)
  <c\RH 1 e\RH 2 g\RH 3 c\RH 4 >4

  \set strokeFingerOrientations = #'(left)
  <c\RH 1 e\RH 2 g\RH 3 c\RH 4 >2

  \set strokeFingerOrientations = #'(right)
  c\RH 1

```

}



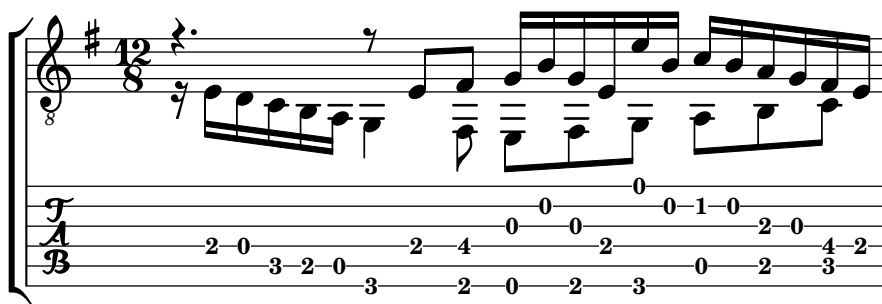
## Polyphonie in einer Tabulatur

Polyphonie kann in einer Tabulatur (TabStaff) genauso wie in einem normalen Notensystem erstellt werden.

```
upper = \relative c' {
  \time 12/8
  \key e \minor
  \voiceOne
  r4. r8 e, fis g16 b g e e' b c b a g fis e
}
```

```
lower = \relative c {
  \key e \minor
  \voiceTwo
  r16 e d c b a g4 fis8 e fis g a b c
}
```

```
\score {
  <<
    \new StaffGroup = "tab with traditional" <<
      \new Staff = "guitar traditional" <<
        \clef "treble_8"
        \new Voice = "upper" \upper
        \new Voice = "lower" \lower
      >>
      \new TabStaff = "guitar tab" <<
        \new TabVoice = "upper" \upper
        \new TabVoice = "lower" \lower
      >>
    >>
  >>
}
```



## Gleiten (Glissando) in Tabulatur

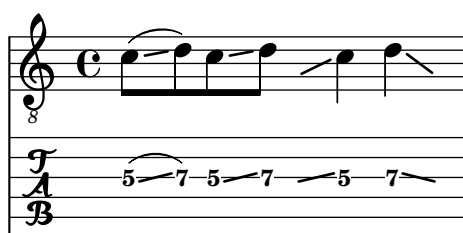
Gleiten kann sowohl in normalem Notensystem als auch in Tabulaturen notiert werden:

```

slides = {
  c'8\3(\glissando d'8\3)
  c'8\3\glissando d'8\3
  \hideNotes
  \grace { g16\glissando }
  \unHideNotes
  c'4\3
  \afterGrace d'4\3\glissando {
  \stemDown \hideNotes
  g16 }
  \unHideNotes
}

\score {
  <<
    \new Staff { \clef "treble_8" \slides }
    \new TabStaff { \slides }
  >>
  \layout {
    \context {
      \Score
      \override Glissando.minimum-length = 4
      \override Glissando.springs-and-rods =
        #ly:spanner::set-spacing-rods
      \override Glissando.thickness = 2
      \omit StringNumber
      % or:
      \%override StringNumber.stencil = ##f
    }
  }
}

```



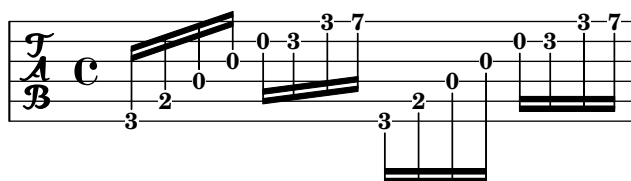
## Hals- und Balkenverhalten in einer Tabulatur

Die Richtung von Hälsen wird in Tabulaturen genauso wie in normaler Notation eingestellt. Balken können horizontal eingestellt werden, wie das Beispiel zeigt.

```

\new TabStaff {
  \relative c {
    \tabFullNotation
    g16 b d g b d g b
    \stemDown
    \override Beam.concaveness = 10000
    g,,16 b d g b d g b
  }
}

```

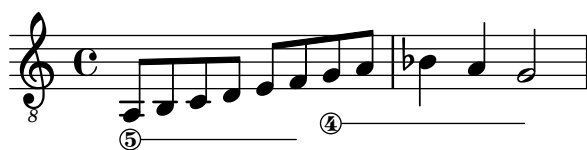


## String number extender lines

Make an extender line for string number indications, showing that a series of notes is supposed to be played all on the same string.

```
stringNumberSpanner =
  #(define-music-function (StringNumber) (string?)
    #{
      \override TextSpanner.style = #'solid
      \override TextSpanner.font-size = #-5
      \override TextSpanner.bound-details.left.stencil-align-dir-y = #CENTER
      \override TextSpanner.bound-details.left.text =
        \markup { \circle \number $StringNumber }
    #})
```

```
\relative c {
  \clef "treble_8"
  \stringNumberSpanner "5"
  \textSpannerDown
  a8\startTextSpan
  b c d e f\stopTextSpan
  \stringNumberSpanner "4"
  g\startTextSpan a
  bes4 a g2\stopTextSpan
}
```





## Unfretted strings

Abschnitt “Unfretted string instruments” in *Notationsreferenz*

### Creating slurs across voices

In some situations, it may be necessary to create slurs between notes from different voices. The solution is to add invisible notes to one of the voices, using `\hideNotes`.

This example is measure 235 of the Ciaccona from Bach’s 2nd Partita for solo violin, BWV 1004.

```
\relative c' {
  <<
    {
      d16( a') s a s a[ s a] s a[ s a]
    }
    \\\
    {
      \slurUp
      bes,16[ s e](
      \hideNotes a)
      \unHideNotes f[(
      \hideNotes a)
      \unHideNotes fis](
      \hideNotes a)
      \unHideNotes g[(
      \hideNotes a)
      \unHideNotes gis](
      \hideNotes a)
    }
  >>
}
```



### Dotted harmonics

Artificial harmonics using `\harmonic` do not show dots. To override this behavior, set the context property `harmonicDots`.

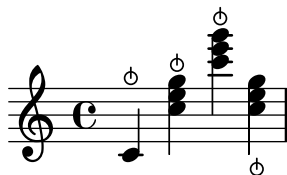
```
\relative c' '' {
  \time 3/4
  \key f \major
  \set harmonicDots = ##t
  <bes f'\harmonic>2. ~
  <bes f'\harmonic>4. <a e'\harmonic>8( <gis dis'\harmonic> <g d'\harmonic>)
  <fis cis'\harmonic>2.
  <bes f'\harmonic>2.
}
```



## Snap-pizzicato or Bartok pizzicato

A snap-pizzicato (also known as „Bartok pizzicato“) is a „strong pizzicato where the string is plucked vertically by snapping and rebounds off the fingerboard of the instrument“ (Wikipedia). It is denoted by a circle with a vertical line going from the center upwards outside the circle.

```
\relative c' {
  c4\snappizzicato
  <c' e g>4\snappizzicato
  <c' e g>4^\snappizzicato
  <c, e g>4_\snappizzicato
}
```



## Vorlage für Streichquartett (einfach)

Dieses Beispiel demonstriert die Partitur für ein Streichquartett. Hier wird auch eine „\global“-Variable für Taktart und Vorzeichen benutzt.

```
global= {
  \time 4/4
  \key c \major
}

violinOne = \new Voice \relative c' {
  c2 d
  e1
  \bar "|"
}

violinTwo = \new Voice \relative c' {
  g2 f
  e1
  \bar "|"
}

viola = \new Voice \relative c' {
  \clef alto
  e2 d
  c1
  \bar "|"
}

cello = \new Voice \relative c' {
```

```

\clef bass
c2 b
a1
\bar "|."
}

\score {
  \new StaffGroup <<
    \new Staff \with { instrumentName = "Violin 1" }
    << \global \violinOne >>
    \new Staff \with { instrumentName = "Violin 2" }
    << \global \violinTwo >>
    \new Staff \with { instrumentName = "Viola" }
    << \global \viola >>
    \new Staff \with { instrumentName = "Cello" }
    << \global \cello >>
  >>
  \layout { }
  \midi { }
}

```

The image shows a musical score for a string quartet. It consists of four staves, each labeled on the left: Violin 1, Violin 2, Viola, and Cello. The staves are grouped by a large left-facing curly brace. Each staff has a clef (Violin 1 and 2 are in treble clef, Viola and Cello are in bass clef) and a common time signature 'C'. The music is written in 4/4 time. The first measure of each staff contains a half note, and the second measure contains a half note. The third measure of each staff contains a whole note. The fourth measure of each staff contains a whole note. The entire excerpt is enclosed in a repeat sign (double bar lines with dots).

## Vorlage für Streichquartett mit einzelnen Stimmen

Mit diesem Beispiel können Sie ein schönes Streichquartett notieren, aber wie gehen Sie vor, wenn Sie Stimmen brauchen? Das Beispiel oben hat gezeigt, wie Sie mit Variablen einzelne Abschnitte getrennt voneinander notieren können. Im nächsten Beispiel wird nun gezeigt, wie Sie mit diesen Variablen einzelne Stimmen erstellen.

Sie müssen das Beispiel in einzelne Dateien aufteilen; die Dateinamen sind in den Kommentaren am Anfang jeder Datei enthalten. `piece.ly` enthält die Noten. Die anderen Dateien – `score.ly`, `vn1.ly`, `vn2.ly`, `vla.ly` und `vlc.ly` – erstellen daraus die entsprechenden Stimmen bzw. die Partitur (`score.ly`). Mit `ag` wird den Stimmen ein Name zugewiesen, auf den zurückgegriffen werden kann.

```

% piece.ly
% (This is the global definitions file)

```

```

global= {
  \time 4/4
  \key c \major

```

```

}

Violinone = \new Voice \relative c' {
  c2 d e1
  \bar "|."
}

Violintwo = \new Voice \relative c' {
  g2 g e1
  \bar "|."
}

Viola = \new Voice \relative c' {
  \clef alto
  e2 d c1
  \bar "|."
}

Cello = \new Voice \relative c' {
  \clef bass
  c2 b a1
  \bar "|."
}

music = {
  <<
    \tag #'score \tag #'vn1
    \new Staff \with { instrumentName = "Violin 1" }
    << \global \Violinone >>

    \tag #'score \tag #'vn2
    \new Staff \with { instrumentName = "Violin 2" }
    << \global \Violintwo >>

    \tag #'score \tag #'vla
    \new Staff \with { instrumentName = "Viola" }
    << \global \Viola >>

    \tag #'score \tag #'vlc
    \new Staff \with { instrumentName = "Cello" }
    << \global \Cello >>
  >>
}

% These are the other files you need to save on your computer

% score.ly
% (This is the main file)

% uncomment the line below when using a separate file
%\include "piece.ly"

```

```
#(set-global-staff-size 14)

\score {
  \new StaffGroup \keepWithTag #'score \music
  \layout { }
  \midi { }
}

%{ Uncomment this block when using separate files

% vn1.ly
% (This is the Violin 1 part file)

\include "piece.ly"
\score {
  \keepWithTag #'vn1 \music
  \layout { }
}

% vn2.ly
% (This is the Violin 2 part file)

\include "piece.ly"
\score {
  \keepWithTag #'vn2 \music
  \layout { }
}

% vla.ly
% (This is the Viola part file)

\include "piece.ly"
\score {
  \keepWithTag #'vla \music
  \layout { }
}

% vlc.ly
% (This is the Cello part file)

\include "piece.ly"
\score {
  \keepWithTag #'vlc \music
  \layout { }
}

%}
```

Violin 1

Violin 2

Viola

Cello

The image shows a musical score for four string instruments: Violin 1, Violin 2, Viola, and Cello. The score is written in common time (C) and consists of two measures. Violin 1 and Violin 2 are in treble clef, Viola is in alto clef, and Cello is in bass clef. The notes are as follows:

Instrument	Measure 1	Measure 2
Violin 1	G4, A4	B4, A4, G4
Violin 2	F#4, G4	A4, B4, A4, G4
Viola	E4, F#4	G4, A4, G4, F#4
Cello	D3, E3	F3, G3, F3, E3

## Winds

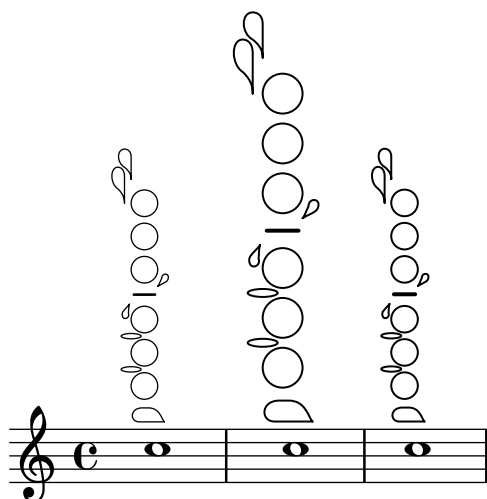
Abschnitt “Wind instruments” in *Notationsreferenz*

### Größe von Holzbläserdiagrammen ändern

Die Größe und Dicke der Holzbläserdiagramme kann geändert werden.

```
\relative c' ' {
  \textLengthOn
  c1^\markup
    \woodwind-diagram
    #'piccolo
    #'()

  c^\markup
    \override #'(size . 1.5) {
      \woodwind-diagram
      #'piccolo
      #'()
    }
  c^\markup
    \override #'(thickness . 0.15) {
      \woodwind-diagram
      #'piccolo
      #'()
    }
}
```



### Fingering symbols for wind instruments

Special symbols can be achieved by combining existing glyphs, which is useful for wind instruments.

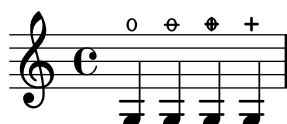
```
mymarkup = {
  \once \override TextScript.outside-staff-padding = 0
  \once \override TextScript.staff-padding = 0
  \once \override TextScript.padding = 0.2
  \once \override TextScript.X-offset =
```

```

#(lambda (g)
  (+ (ly:self-alignment-interface::centered-on-x-parent g)
     (ly:self-alignment-interface::x-aligned-on-self g)))
}

\relative c' {
  g\open
  \mymarkup
  g^\markup \combine
    \musicglyph "scripts.open"
    \musicglyph "scripts.tenuto"
  \mymarkup
  g^\markup \combine
    \musicglyph "scripts.open"
    \musicglyph "scripts.stopped"
  g\stopped
}

```



## Flute slap notation

It is possible to indicate special articulation techniques such as a flute „tongue slap“ by replacing the note head with the appropriate glyph. For that we can draw the accent-like note head with `\markup`.

```

slap =
#(define-music-function (music) (ly:music?)
#{
  \temporary \override NoteHead.stencil = #ly:text-interface::print
  \temporary \override NoteHead.text =
    \markup
    \translate #'(1 . 0)
    \override #'(thickness . 1.4)
    \overlay {
      \draw-line #'(-1.2 . 0.4)
      \draw-line #'(-1.2 . -0.4)
    }
  \temporary \override NoteHead.stem-attachment =
  #(lambda (grob)
    (let* ((stem (ly:grob-object grob 'stem))
          (dir (ly:grob-property stem 'direction UP))
          (is-up (eqv? dir UP)))
      (cons dir (if is-up 0 -0.8))))
  #music
  \revert NoteHead.stencil
  \revert NoteHead.text
  \revert NoteHead.stem-attachment
#})

\relative c' {

```



```

c4 \slap c d r
\slap { g4 a } b r
}

```



## Graphische und Text-Holzbläserdiagramme

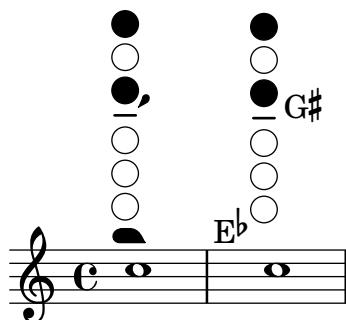
In vielen Fällen können die nicht in der mittleren Reihe befindlichen Löcher dargestellt werden, indem man die Lochbezeichnung oder graphische Zeichen benutzt.

```

\relative c' {
  \textLengthOn
  c1^\markup
    \woodwind-diagram
      #'piccolo
      #'((cc . (one three))
        (lh . (gis))
        (rh . (ees)))

  c^\markup
    \override #'(graphical . #f) {
      \woodwind-diagram
        #'piccolo
        #'((cc . (one three))
          (lh . (gis))
          (rh . (ees)))
    }
}

```



## Recorder fingering chart

The following example demonstrates how fingering charts for wind instruments can be realized.

*% range chart for paetzold contrabass recorder*

```

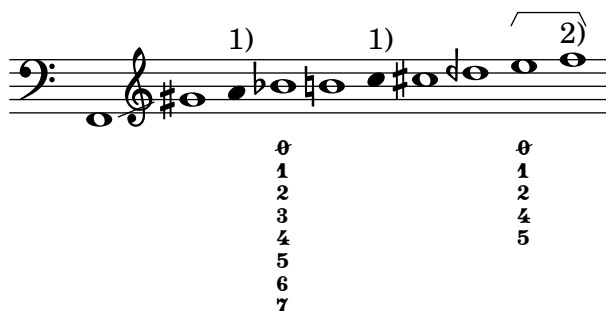
centermarkup = {
  \once \override TextScript.self-alignment-X = #CENTER
  \once \override TextScript.X-offset = #(lambda (g)
    (+ (ly:self-alignment-interface::centered-on-x-parent g)
      (ly:self-alignment-interface::x-aligned-on-self g)))
}

```

```

\score {
  \new Staff \with {
    \remove "Time_signature_engraver"
    \omit Stem
    \omit Flag
    \consists "Horizontal_bracket_engraver"
  }
  {
    \clef bass
    \set Score.timing = ##f
    f'1*1/4 \glissando
    \clef violin
    gis'1*1/4
    \stemDown a'4^\markup "1)"
    \centermarkup
    \once \override TextScript.padding = 2
    bes'1*1/4_\markup \override #'(baseline-skip . 1.7) \column
      { \fontsize #-5 \slashed-digit #0 \finger 1 \finger 2
        \finger 3 \finger 4 \finger 5 \finger 6 \finger 7 }
    b'1*1/4
    c''4^\markup "1)"
    \centermarkup
    \once \override TextScript.padding = 2
    cis''1*1/4
    deh''1*1/4
    \centermarkup
    \once \override TextScript.padding = 2
    \once \override Staff.HorizontalBracket.direction = #UP
    e''1*1/4_\markup \override #'(baseline-skip . 1.7) \column
      { \fontsize #-5 \slashed-digit #0 \finger 1 \finger 2
        \finger 4 \finger 5}\startGroup
    f''1*1/4^\markup "2)"\stopGroup
  }
}

```



## Liste der Löcher für Holzbläserdiagramme

Dieses Schnipsel erzeugt eine Liste aller möglichen Löcher und Locheinstellungen für Holzbläserdiagramme, wie sie in der Datei `scm/define-woodwind-diagrams.scm` definiert sind. Die Liste wird in der Log-Datei angezeigt, nicht in den Noten. Wenn Ausgabe auf der Kommandozeile gewünscht ist, muss `(current-error-port)` von den Befehlen weggelassen werden.

```
#(print-keys-verbose 'piccolo (current-error-port))
```

```

#(print-keys-verbose 'flute (current-error-port))
#(print-keys-verbose 'flute-b-extension (current-error-port))
#(print-keys-verbose 'tin-whistle (current-error-port))
#(print-keys-verbose 'oboe (current-error-port))
#(print-keys-verbose 'clarinet (current-error-port))
#(print-keys-verbose 'bass-clarinet (current-error-port))
#(print-keys-verbose 'low-bass-clarinet (current-error-port))
#(print-keys-verbose 'saxophone (current-error-port))
#(print-keys-verbose 'soprano-saxophone (current-error-port))
#(print-keys-verbose 'alto-saxophone (current-error-port))
#(print-keys-verbose 'tenor-saxophone (current-error-port))
#(print-keys-verbose 'baritone-saxophone (current-error-port))
#(print-keys-verbose 'bassoon (current-error-port))
#(print-keys-verbose 'contrabassoon (current-error-port))

```

```
\score {c'1}
```



## Liste der Holzbläserdiagramme

Folgende Noten zeige alle Holzbläserdiagramme, die für LilyPond definiert sind.

```

\layout {
  indent = 0
}

\relative c' {
  \textLengthOn
  c1~
  \markup {
    \center-column {
      'tin-whistle
      " "
      \woodwind-diagram
      #'tin-whistle
      #'()
    }
  }

  c1~
  \markup {
    \center-column {
      'piccolo
      " "
      \woodwind-diagram
      #'piccolo
      #'()
    }
  }
}

```

```

c1~
\markup {
  \center-column {
    'flute
    " "

    \woodwind-diagram
    #'flute
    #'()
  }
}
c1~\markup {
  \center-column {
    'oboe
    " "

    \woodwind-diagram
    #'oboe
    #'()
  }
}

c1~\markup {
  \center-column {
    'clarinet
    " "

    \woodwind-diagram
    #'clarinet
    #'()
  }
}

c1~\markup {
  \center-column {
    'bass-clarinet
    " "

    \woodwind-diagram
    #'bass-clarinet
    #'()
  }
}

c1~\markup {
  \center-column {
    'saxophone
    " "

    \woodwind-diagram
    #'saxophone
    #'()
  }
}

c1~\markup {
  \center-column {

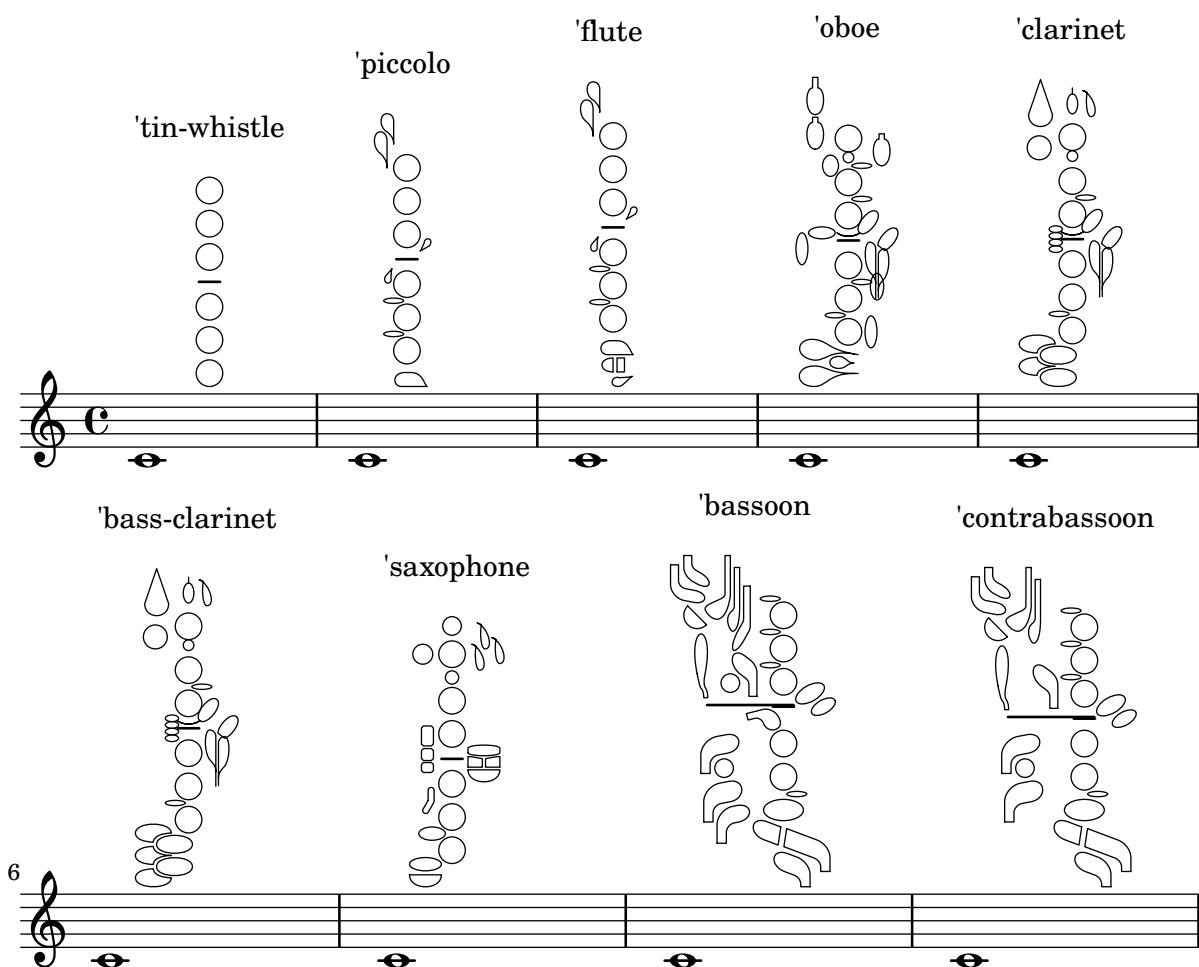
```

```

'basoon
" "
\woodwind-diagram
#'basoon
#'()
}
}

c1~\markup {
\center-column {
'contrabassoon
" "
\woodwind-diagram
#'contrabassoon
#'()
}
}
}

```



## Ancient notation

Abschnitt “Ancient notation” in *Notationsreferenz*

### Adding a figured bass above or below the notes

When writing a figured bass, you can place the figures above or below the bass notes, by defining the `BassFigureAlignmentPositioning.direction` property (exclusively in a `Staff` context). Choices are `#UP` (or `#1`), `#CENTER` (or `#0`) and `#DOWN` (or `#-1`).

This property can be changed as many times as you wish. Use `\once \override` if you don’t want the override to apply to the whole score.

```

bass = {
  \clef bass
  g4 b, c d
  e d8 c d2
}

continuo = \figuremode {
  <_>4 <6>4 <5/>4
  \override Staff.BassFigureAlignmentPositioning.direction = #UP
  %\bassFigureStaffAlignmentUp
  <_+ >4 <6>
  \set Staff.useBassFigureExtenders = ##t
  \override Staff.BassFigureAlignmentPositioning.direction = #DOWN
  %\bassFigureStaffAlignmentDown
  <4>4. <4>8 <_+>4
}

\score {
  <<
    \new Staff = bassStaff \bass
    \context Staff = bassStaff \continuo
  >>
}

```



### Ancient fonts

Shown here are many of the symbols that are included in LilyPond’s ancient notation.

```

\paper { tagline = ##f }

m = { c1 e f ges cis' \bar "||" }

\score {
  \new VaticanaVoice {
    \override NoteHead.style = #'vaticana.punctum
    \key es \major
    \textMark \markup \rounded-box "Vaticana clefs, custos and note heads"
  }
}

```

```

\clef "vaticana-fa2"
<>~"vaticana.punctum"
\m

\override NoteHead.style = #'vaticana.inclinatum
<>~"vaticana.inclinatum"
\m

\override NoteHead.style = #'vaticana.quilisma
<>~"vaticana.quilisma"
\m
\clef "vaticana-fa1"

\override NoteHead.style = #'vaticana.plica
<>~"vaticana.plica"
\m

\override NoteHead.style = #'vaticana.reverse.plica
<>~"vaticana.reverse.plica"
\m

\override NoteHead.style = #'vaticana.punctum.cavum
<>~"vaticana.punctum.cavum"
\m

\override NoteHead.style = #'vaticana.lpes
<>~"vaticana.punctum.lpes"
\m

\override NoteHead.style = #'vaticana.upes
<>~"vaticana.punctum.upes"
\m

\override NoteHead.style = #'vaticana.vupes
<>~"vaticana.punctum.vupes"
\m

\override NoteHead.style = #'vaticana.linea.punctum
<>~"vaticana.punctum.linea"
\m

\override NoteHead.style = #'vaticana.epiphonus
<>~"vaticana.punctum.epiphonus"
\m

\override NoteHead.style = #'vaticana.cephalicus
<>~"vaticana.punctum.cephalicus"
\m

\break

\textMark \markup \rounded-box "Medicaea clefs, custos and note heads"

```

```

\set VaticanaStaff.alterationGlyphs =
  #alteration-medicaea-glyph-name-alist
\override VaticanaStaff.Custos.style = #'medicaea
\clef "medicaea-fa2"

\override NoteHead.style = #'medicaea.punctum
<>^"medicaea.punctum"
\m
\clef "medicaea-do2"

\override NoteHead.style = #'medicaea.inclinatum
<>^"medicaea.inclinatum"
\m

\override NoteHead.style = #'medicaea.virga
<>^"medicaea.virga"
\m
\clef "medicaea-fa1"

\override NoteHead.style = #'medicaea.rvirga
<>^"medicaea.rvirga"
\m

\break

\textMark \markup \rounded-box "Hufnagel clefs, custos and note heads"

\set Staff.alterationGlyphs =
  #alteration-hufnagel-glyph-name-alist
\override VaticanaStaff.Custos.style = #'hufnagel
\clef "hufnagel-fa2"

\break

\override NoteHead.style = #'hufnagel.punctum
<>^"hufnagel.punctum"
\m
\clef "hufnagel-do2"

\override NoteHead.style = #'hufnagel.lpes
<>^"hufnagel.lpes"
\m
\clef "hufnagel-do-fa"

\override NoteHead.style = #'hufnagel.virga
<>^"hufnagel.virga"
\m
}
\layout {
  indent = 0.0
  \context {

```

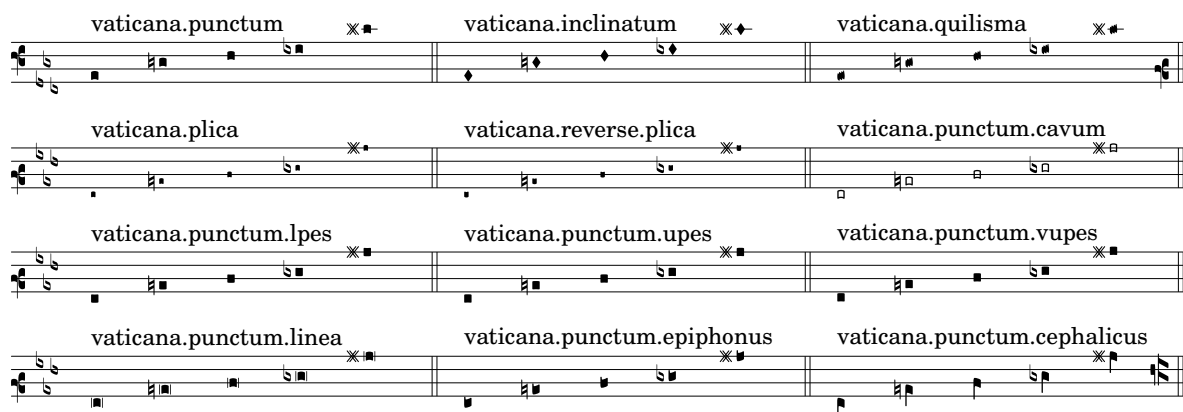


```

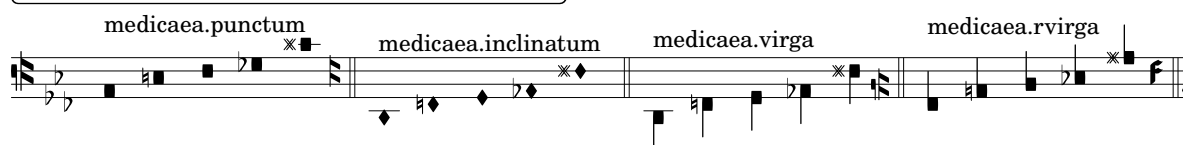
\Score
\override TextScript.font-size = #-2
\override TextMark.break-align-symbols = #'(left-edge clef staff-bar)
\override TextMark.padding = 4
\omit BarNumber
}
\context {
  \VaticanaStaff
  alterationGlyphs =
    #alteration-vaticana-glyph-name-alist
  \override Clef.space-alist =
    #(grob-transformer 'space-alist
      (lambda (grob orig)
        (acons 'custos '(extra-space . 0.7) orig)))
}
}

```

### Vaticana clefs, custos and note heads



### Medicaea clefs, custos and note heads



### Hufnagel clefs, custos and note heads



## Vorlage für Alte Notation – moderne Transkription des gregorianischen Chorals

Dieses Beispiel zeigt eine moderne Transkription des Gregorianischen Chorals. Hier gibt es keine Takte, keine Notenhäule und es werden nur halbe und Viertelnoten verwendet. Zusätzliche Zeichen zeigen die Länge von Pausen an.

```

chant = \relative c' {
  \set Score.timing = ##f

```

```

f4 a2 \divisioMinima
g4 b a2 f2 \divisioMaior
g4( f) f( g) a2 \finalis
}

verba = \lyricmode {
  Lo -- rem ip -- sum do -- lor sit a -- met
}

\score {
  \new GregorianTranscriptionStaff <<
    \new GregorianTranscriptionVoice = "melody" \chant
    \new GregorianTranscriptionLyrics = "one" \lyricsto melody \verba
  >>
}

```



## Ancient time signatures

Time signatures may also be engraved in an old style.

```

{
  \override Staff.TimeSignature.style = #'neomensural
  s1
}

```



## Psalmennotation

Diese Form der Notation wird benutzt für die Notation von Psalmen, in denen die Strophen nicht die gleiche Länge haben.

```

stemOff = \hide Staff.Stem
stemOn  = \undo \stemOff

\score {
  \new Staff \with { \remove "Time_signature_engraver" }
  {
    \key g \minor
    \cadenzaOn
    \stemOff a'\breve bes'4 g'4
    \stemOn a'2 \section
    \stemOff a'\breve g'4 a'4
    \stemOn f'2 \section
    \stemOff a'\breve~\markup { \italic flexe }
    \stemOn g'2 \fine
  }
}

```



## Custodes

Custodes may be engraved in various styles.

```
\layout { ragged-right = ##t }
```

```
\new Staff \with { \consists "Custos_engraver" } \relative c' {  
  \override Staff.Custos.neutral-position = #4
```

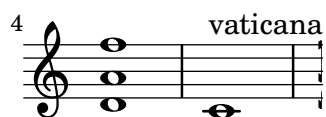
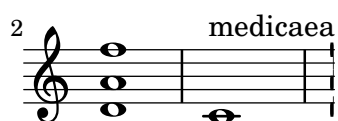
```
  \override Staff.Custos.style = #'hufnagel  
  c1~"hufnagel" \break  
  <d a' f'>1
```

```
  \override Staff.Custos.style = #'medicaea  
  c1~"medicaea" \break  
  <d a' f'>1
```

```
  \override Staff.Custos.style = #'vaticana  
  c1~"vaticana" \break  
  <d a' f'>1
```

```
  \override Staff.Custos.style = #'mensural  
  c1~"mensural" \break  
  <d a' f'>1
```

```
}
```



## Incipit

When transcribing mensural music, an incipit at the beginning of the piece is useful to indicate the original key and tempo. While today musicians are used to bar lines in order to faster recognize rhythmic patterns, bar lines were not yet invented during the period of mensural music; in fact, the meter often changed after every few notes. As a compromise, bar lines are often printed between the staves rather than on the staves.

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% A short excerpt from the Jubilate Deo by Orlando de Lassus
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
\header { tagline = ##f }
```

```
global = {
  \set Score.skipBars = ##t
  \key g \major
  \time 4/4

  % the actual music
  \skip 1*8

  % let finis bar go through all staves
  \override Staff.BarLine.transparent = ##f

  % finis bar
  \bar "|."
}
```

```
discantusIncipit = {
  \clef "neomensural-c1"
  \key f \major
  \time 2/2
  c'1.
}
```

```
discantusNotes = {
  \transpose c' c'' {
    \clef "treble"
    d'2. d'4 |
    b e' d'2 |
    c'4 e'4.( d'8 c' b |
    a4) b a2 |
    b4.( c'8 d'4) c'4 |
    \once \hide NoteHead
    c'1 |
    b\breve |
  }
}
```

```
discantusLyrics = \lyricmode {
  Ju -- bi -- la -- te De -- o,
  om -- nis ter -- ra, __ om-
```

```

    "...
    -us.
}

altusIncipit = {
    \clef "neomensural-c3"
    \key f \major
    \time 2/2
    r1 f'1.
}

altusNotes = {
    \transpose c' c'' {
        \clef "treble"
        r2 g2. e4 fis g |
        a2 g4 e |
        fis g4.( fis16 e fis4) |
        g1 |
        \once \hide NoteHead
        g1 |
        g\breve |
    }
}

altusLyrics = \lyricmode {
    Ju -- bi -- la -- te
    De -- o, om -- nis ter -- ra,
    "...
    -us.
}

tenorIncipit = {
    \clef "neomensural-c4"
    \key f \major
    \time 2/2
    r\longa
    r\breve
    r1 c'1.
}

tenorNotes = {
    \transpose c' c' {
        \clef "treble_8"
        R1 |
        R1 |
        R1 |
        % two measures
        r2 d'2. d'4 b e' |
        \once \hide NoteHead
        e'1 |
        d'\breve |
    }
}

```

```

}

tenorLyrics = \lyricmode {
  Ju -- bi -- la -- te
  "...
  -us.
}

bassusIncipit = {
  \clef "mensural-f"
  \key f \major
  \time 2/2
  r\maxima
  f1.
}

bassusNotes = {
  \transpose c' c' {
    \clef "bass"
    R1 |
    R1 |
    R1 |
    R1 |
    g2. e4 |
    \once \hide NoteHead
    e1 |
    g\breve |
  }
}

bassusLyrics = \lyricmode {
  Ju -- bi-
  "...
  -us.
}

\score {
  <<
  \new StaffGroup = choirStaff <<
    \new Voice = "discantusNotes" <<
      \set Staff.instrumentName = "Discantus"
      \incipit \discantusIncipit
      \global
      \discantusNotes
    >>
    \new Lyrics \lyricsto discantusNotes { \discantusLyrics }
  \new Voice = "altusNotes" <<
    \set Staff.instrumentName = "Altus"
    \global
    \incipit \altusIncipit
    \altusNotes
  >>
}

```

```

\new Lyrics \lyricsto altusNotes { \altusLyrics }
\new Voice = "tenorNotes" <<
  \set Staff.instrumentName = "Tenor"
  \global
  \incipit \tenorIncipit
  \tenorNotes
>>
\new Lyrics \lyricsto tenorNotes { \tenorLyrics }
\new Voice = "bassusNotes" <<
  \set Staff.instrumentName = "Bassus"
  \global
  \incipit \bassusIncipit
  \bassusNotes
>>
\new Lyrics \lyricsto bassusNotes { \bassusLyrics }
>>
>>
\layout {
  \context {
    \Score
    %% no bar lines in staves or lyrics
    \hide BarLine
  }
  %% the next two instructions keep the lyrics between the bar lines
  \context {
    \Lyrics
    \consists "Bar_engraver"
    \consists "Separating_line_group_engraver"
  }
  \context {
    \Voice
    %% no slurs
    \hide Slur
    %% Comment in the below "\remove" command to allow line
    %% breaking also at those bar lines where a note overlaps
    %% into the next measure. The command is commented out in this
    %% short example score, but especially for large scores, you
    %% will typically yield better line breaking and thus improve
    %% overall spacing if you comment in the following command.
    %%\remove "Forbid_line_break_engraver"
  }
  indent = 6\cm
  incipit-width = 4\cm
}
}

```

Discantus

Altus

Tenor

Bassus

Ju - bi - la - te De -

Ju bi - la - te

o, om - nis ter - ra, om- ... -us.

De - o, om - nis ter - ra, ... -us.

Ju - bi - la - te ... -us.

Ju - bi- ... -us.

## Mensurstriche-Layout (Taktstriche zwischen den Systemen)

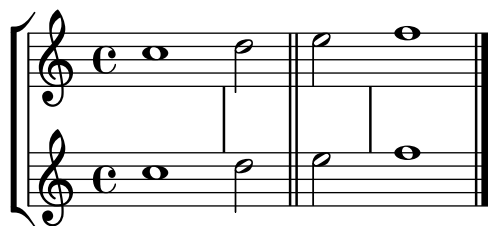
Das Mensurstriche-Layout, in welchem die Taktlinien nicht auf den Systemen, sondern zwischen den Systemen gesetzt werden, kann mit einer `StaffGroup` anstelle von `ChoirStaff` erreicht werden. Die Taktlinien auf den Systemen werden mit der `transparent`-Eigenschaft ausgelöscht.

```
\layout {
  \context {
    \Staff
    measureBarType = "-span|"
  }
}

music = \fixed c'' {
  c1
  d2 \section e2
  f1 \fine
}

\new StaffGroup <<
  \new Staff \music
  \new Staff \music
>>
```





## Pausenstile

Pausen können in verschiedenen Stilen dargestellt werden.

```
restsA = {
  r\maxima r\longa r\breve r1 r2 r4 r8 r16 s32
  s64 s128 s256 s512 s1024 s1024
}
restsB = {
  r\maxima r\longa r\breve r1 r2 r4 r8 r16 r32
  r64 r128 r256 r512 r1024 s1024
}

\new Staff \relative c {
  \omit Score.TimeSignature
  \cadenzaOn

  \override Staff.Rest.style = #'mensural
  <>\markup \typewriter { mensural } \restsA \bar "" \break

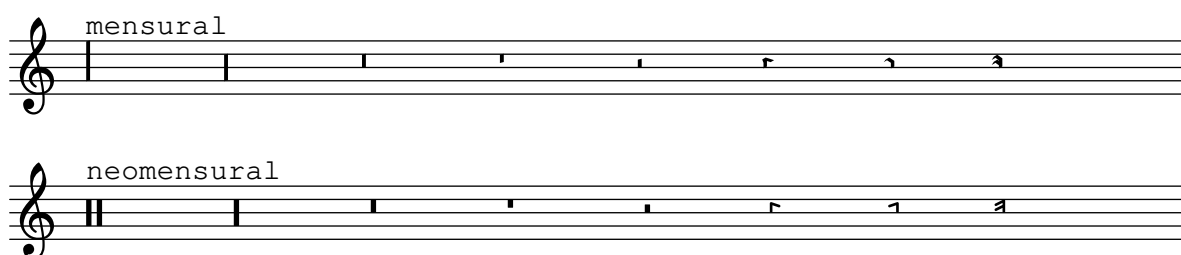
  \override Staff.Rest.style = #'neomensural
  <>\markup \typewriter { neomensural } \restsA \bar "" \break

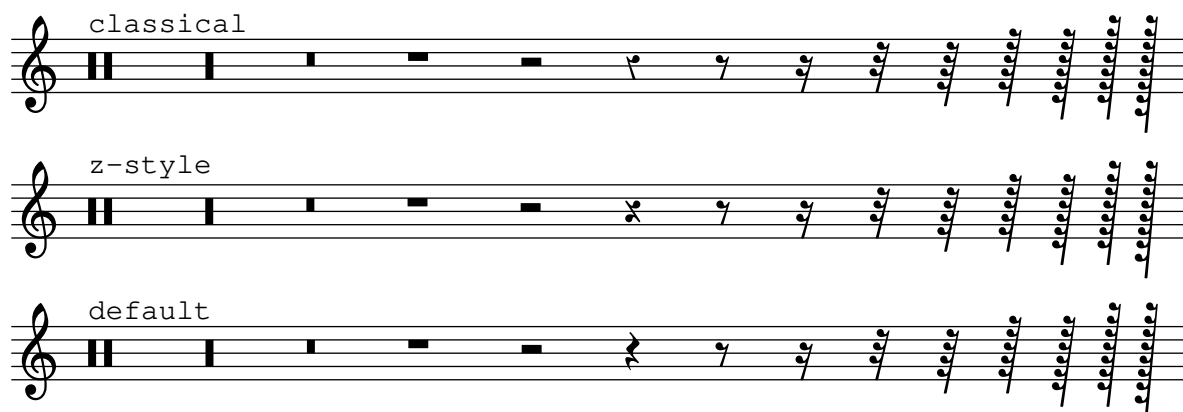
  \override Staff.Rest.style = #'classical
  <>\markup \typewriter { classical } \restsB \bar "" \break

  \override Staff.Rest.style = #'z
  <>\markup \typewriter { z-style } \restsB \bar "" \break

  \override Staff.Rest.style = #'default
  <>\markup \typewriter { default } \restsB \bar "" \break
}

\paper {
  indent = 0
  tagline = ##f
}
```





## Using tags to produce mensural and modern music from the same source

Using tags, it is possible to produce both mensural and modern notation from the same music. In this snippet, a function `\menrest` is introduced, allowing mensural rests to be pitched as in the original, but with modern rests in the standard staff position.

Tags can also be used where other differences are needed: for example using „whole measure rests“ (`R1`, `R\breve`, etc.) in modern music, but normal rests (`r1`, `r\breve`, etc.) in the mensural version. Converting mensural music to its modern equivalent is usually referred to as *transcription*.

```
\header { tagline = ##f }

menrest =
#(define-music-function (note)
  (ly:music?)
  #{
    \tag #'mens $(make-music 'RestEvent note)
    \tag #'mod $(make-music 'RestEvent note 'pitch '())
  })

MenStyle = {
  \autoBeamOff
  \override NoteHead.style = #'petrucci
  \override Score.BarNumber.transparent = ##t
  \override Stem.neutral-direction = #up
}

finalis = \section

Music = \relative c'' {
  \set Score.tempoHideNote = ##t
  \key f \major
  \time 4/4
  g1 d'2 \menrest bes4 bes2 a2 r4 g4 fis2.
  \finalis
}

MenLyr = \lyricmode { So farre, deere life, deare life }
ModLyr = \lyricmode { So far, dear life, dear life }
```

```

\score {
  \keepWithTag #'mens {
    <<
      \new MensuralStaff
      {
        \new MensuralVoice = Cantus
        \clef "mensural-c1" \MenStyle \Music
      }
      \new Lyrics \lyricsto Cantus \MenLyr
    >>
  }
}

\score {
  \keepWithTag #'mod {
    \new ChoirStaff <<
      \new Staff
      {
        \new Voice = Sop \with {
          \remove "Note_heads_engraver"
          \consists "Completion_heads_engraver"
          \remove "Rest_engraver"
          \consists "Completion_rest_engraver" }
        {
          \shiftDurations 1 0 { \autoBeamOff \Music }
        }
      }
      \new Lyrics \lyricsto Sop \ModLyr
    >>
  }
}

```



So farre, deere life, deare life



So far, dear life, dear life

## Vertical line as a baroque articulation mark

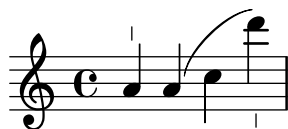
This short vertical line placed above the note is commonly used in baroque music. Its meaning can vary, but generally indicates notes that should be played with more „weight“. The following example demonstrates how to achieve such a notation.

```

upline =
\tweak stencil
#(lambda (grob)
  (grob-interpret-markup grob #{ \markup \draw-line #'(0 . 1) #}))
\stopped

```

```
\relative c' {  
  a'4^\upline a( c d')_\upline  
}
```



## World music

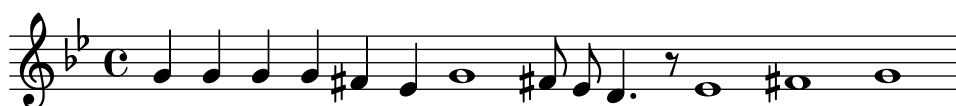
Abschnitt “World music” in *Notationsreferenz*

### Arabische Improvisation

Bei Improvisation oder *taqasim*, die zeitlich frei gespielt werden, kann die Taktart ausgelassen werden und `\cadenzaOn` kann eingesetzt werden. Es kann nötig sein, den Versetzungszeichenstil anzupassen, weil sonst die Versetzungszeichen nur einmal ausgegeben werden, da keine Taktlinien gesetzt sind. Hier ein Beispiel, wie der Beginn einer *hijaz*-Improvisation aussehen könnte:

```
\include "arabic.ly"
```

```
\relative sol' {
  \key re \kurd
  \accidentalStyle forget
  \cadenzaOn
  sol4 sol sol sol fad mib sol1 fad8 mib re4. r8 mib1 fad sol
}
```



### Makam-Beispiel

Makam ist eine türkische Melodie, in der 1/9-Tonabstände eingesetzt werden. Sehen Sie sich die Initialisierungsdatei `makam.ly` für weitere Information zu Tonhöhenbezeichnungen und Alterationen an (siehe Handbuch zum Lernen 2.25.12, 4.6.3 Weitere Information zu Hinweisen, wo diese Datei gespeichert ist).

```
% Initialize makam settings
```

```
\include "makam.ly"
```

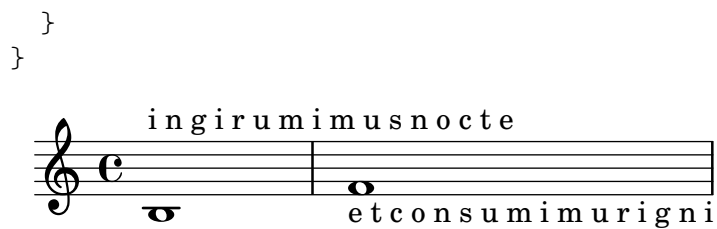
```
\relative c' {
  \set Staff.keyAlterations = #`((6 . , (- KOMA)) (3 . , BAKIYE))
  c4 cc db fk
  gbm4 gfc gfb efk
  fk4 db cc c
}
```



### Printing text from right to left

It is possible to print text from right to left in a markup object, as demonstrated here.

```
{
  b1^\markup {
    \line { i n g i r u m i m u s n o c t e }
  }
  f'_\markup {
    \override #'(text-direction . -1)
    \line { i n g i r u m i m u s n o c t e }
  }
}
```



## Turkish Makam example

This template uses the start of a well-known Turkish Saz Semai that is familiar in the repertoire in order to illustrate some of the elements of Turkish music notation.

```

\paper { tagline = ##f }

% Initialize makam settings
\include "turkish-makam.ly"

\header {
  title = "Hüseyini Saz Semaisi"
  composer = "Lavtacısı Andon"
}

\relative {
  \set Staff.extraNatural = ##f
  \set Staff.autoBeaming = ##f

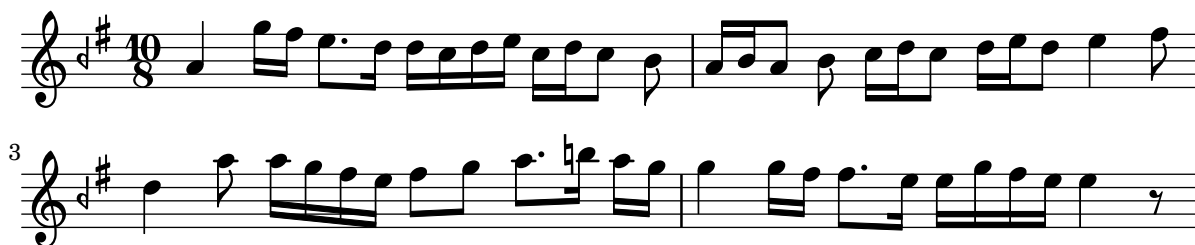
  \key a \huseyni
  \time 10/8

  a'4 g'16 [fb] e8. [d16] d [c d e] c [d c8] bfc |
  a16 [bfc a8] bfc c16 [d c8] d16 [e d8] e4 fb8 |
  d4 a'8 a16 [g fb e] fb8 [g] a8. [b16] a16 [g] |
  g4 g16 [fb] fb8. [e16] e [g fb e] e4 r8 |
}

```

## Hüseyini Saz Semaisi

Lavtacısı Andon



## Contexts and engravers

Abschnitt “Changing defaults” in *Notationsreferenz*

Abschnitt “Contexts and engravers” in *Handbuch zum Lernen*

### Adding a figured bass above or below the notes

When writing a figured bass, you can place the figures above or below the bass notes, by defining the `BassFigureAlignmentPositioning.direction` property (exclusively in a `Staff` context). Choices are `#UP` (or `#1`), `#CENTER` (or `#0`) and `#DOWN` (or `#-1`).

This property can be changed as many times as you wish. Use `\once \override` if you don’t want the override to apply to the whole score.

```

bass = {
  \clef bass
  g4 b, c d
  e d8 c d2
}

continuo = \figuremode {
  <_>4 <6>4 <5/>4
  \override Staff.BassFigureAlignmentPositioning.direction = #UP
  %\bassFigureStaffAlignmentUp
  <_+>4 <6>
  \set Staff.useBassFigureExtenders = ##t
  \override Staff.BassFigureAlignmentPositioning.direction = #DOWN
  %\bassFigureStaffAlignmentDown
  <4>4. <4>8 <_+>4
}

\score {
  <<
    \new Staff = bassStaff \bass
    \context Staff = bassStaff \continuo
  >>
}

```



### Adding an extra staff

An extra staff can be added (possibly temporarily) after the start of a piece.

```

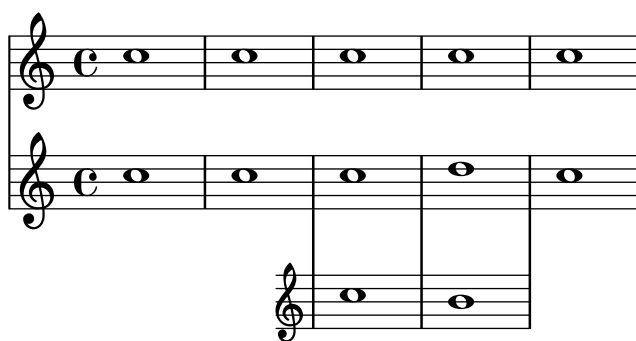
\score {
  <<
    \new Staff \relative c'' {
      c1 | c | c | c | c
    }
    \new StaffGroup \relative c'' {
      \new Staff {
        c1 | c
      }
    }
  >>
}

```

```

    <<
    {
      c1 | d
    }
    \new Staff {
      \once \omit Staff.TimeSignature
      c1 | b
    }
  >>
  c1
}
}
>>
}

```



## Adding an extra staff at a line break

When adding a new staff at a line break, some extra space is unfortunately added at the end of the line before the break (to fit in a key signature change, which will never be printed anyway). The workaround is to add a setting of `Staff.explicitKeySignatureVisibility` as is shown in the example.

```

\paper { tagline = ##f }

\score {
  \new StaffGroup \relative c'' {
    \new Staff
    \key f \major
    c1 c^"Unwanted extra space" \break
    << { c1 | c }
    \new Staff {
      \key f \major
      \once \omit Staff.TimeSignature
      c1 | c
    }
  }
  >>
  c1 | c^"Fixed here" \break
  << { c1 | c }
  \new Staff {
    \once \set Staff.explicitKeySignatureVisibility = #end-of-line-invisible
    \key f \major
    \once \omit Staff.TimeSignature
    c1 | c
  }
}

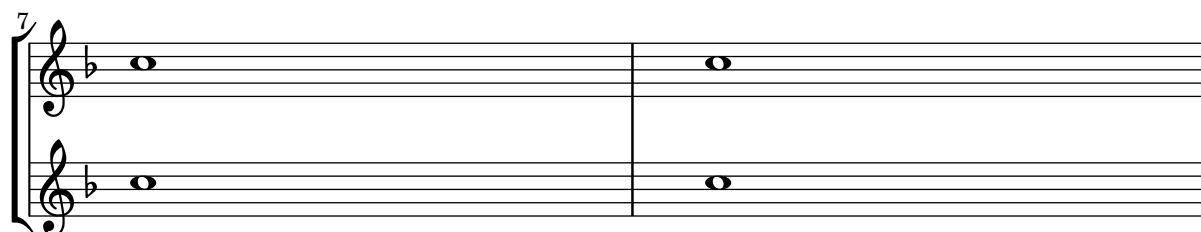
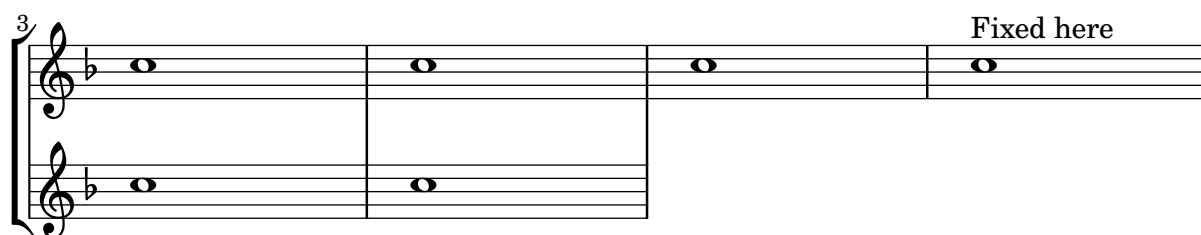
```



```

    }
  >>
}

```



## Automatically changing the stem direction of the middle note based on the melody

LilyPond can alter the stem direction of the middle note on a staff so that it follows the melody, by adding the `Melody_engraver` to the `Voice` context.

The context property `suspendMelodyDecisions` may be used to turn off this behavior locally.

```

\relative c' {
  \time 3/4
  a8 b g f b g |
  \set suspendMelodyDecisions = ##t
  a b g f b g |
  \unset suspendMelodyDecisions
  c b d c b c |
}

\layout {
  \context {
    \Voice
    \consists "Melody_engraver"
    \autoBeamOff
  }
}

```



## Centered measure numbers

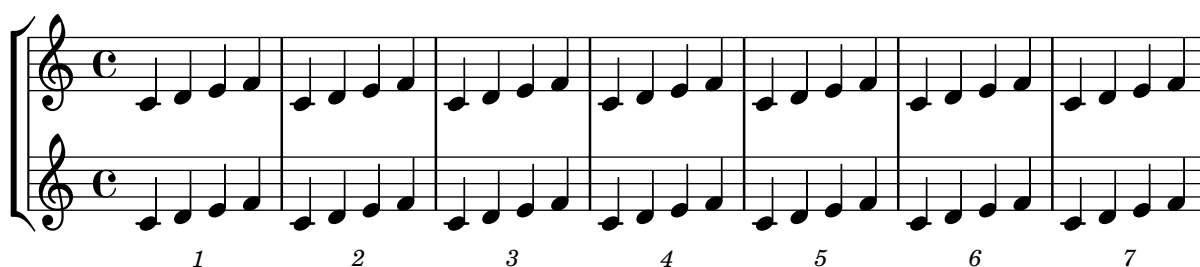
Scores of large ensemble works often have bar numbers placed beneath the system, centered horizontally on the measure's extent. This snippet shows how the `Measure_counter_engraver` may be used to simulate this notational practice. Here, the engraver has been added to a `Dynamics` context.

This snippet presents a legacy method: starting from LilyPond 2.23.3, `\set Score.centerBarNumbers = ##t` is enough.

```
\layout {
  \context {
    \Dynamics
    \consists #Measure_counter_engraver
    \override MeasureCounter.direction = #DOWN
    \override MeasureCounter.font-encoding = #'latin1
    \override MeasureCounter.font-shape = #'italic
    % to control the distance of the Dynamics context from the staff:
    \override VerticalAxisGroup.nonstaff-relatedstaff-spacing.padding = #2
  }
  \context {
    \Score
    \remove "Bar_number_engraver"
  }
}

pattern = \repeat unfold 7 { c'4 d' e' f' }

\new StaffGroup <<
  \new Staff {
    \pattern
  }
  \new Staff {
    \pattern
  }
  \new Dynamics {
    \startMeasureCount
    s1*7
    \stopMeasureCount
  }
>>
```



## Changing MIDI output to one channel per voice

When outputting MIDI, the default behavior is for each staff to represent one MIDI channel, with all the voices on a staff amalgamated. This minimizes the risk of running out of MIDI channels, since there are only 16 available per track.

However, by moving the `Staff_performer` to the `Voice` context, each voice on a staff can have its own MIDI channel, as is demonstrated by the following example: despite being on the same staff, two MIDI channels are created, each with a different `midiInstrument`.

```
\score {
  \new Staff <<
    \new Voice \relative c'' {
      \set midiInstrument = "flute"
      \voiceOne
      \key g \major
      \time 2/2
      r2 g-"Flute" ~
      g fis ~
      fis4 g8 fis e2 ~
      e4 d8 cis d2
    }
    \new Voice \relative c'' {
      \set midiInstrument = "clarinet"
      \voiceTwo
      b1-"Clarinet"
      a2. b8 a
      g2. fis8 e
      fis2 r
    }
  >>
  \layout { }
  \midi {
    \context {
      \Staff
      \remove "Staff_performer"
    }
    \context {
      \Voice
      \consists "Staff_performer"
    }
  }
  \tempo 2 = 72
}
```



## Changing time signatures inside a polymetric section using `\scaleDurations`

The `measureLength` property, together with `measurePosition`, determines when a bar line is needed. However, when using `\scaleDurations`, the scaling of durations makes it difficult to change time signatures. In this case, `measureLength` should be set manually, using the `ly:make-moment` callback. The second argument must be the same as the second argument of `\scaleDurations`.

```
\layout {
  \context {
    \Score
    \remove "Timing_translator"
  }
  \context {
    \Staff
    \consists "Timing_translator"
  }
}

<<
  \new Staff {
    \scaleDurations 8/5 {
      \time 6/8
      \set Timing.measureLength = \musicLength 1*6/5
      b8 b b b b b
      \time 2/4
      \set Timing.measureLength = \musicLength 1*4/5
      b4 b
    }
  }
  \new Staff {
    \clef bass
    \time 2/4
    c2 d e f
  }
}>>
```



## Psalmennotation

Diese Form der Notation wird benutzt für die Notation von Psalmen, in denen die Strophen nicht die gleiche Länge haben.

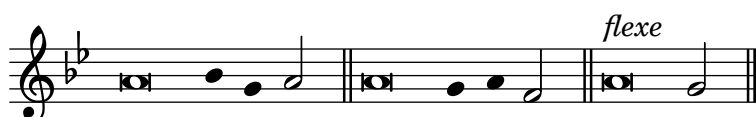
```
stemOff = \hide Staff.Stem
stemOn  = \undo \stemOff
```

```
\score {
  \new Staff \with { \remove "Time_signature_engraver" }
```

```

{
  \key g \minor
  \cadenzaOn
  \stemOff a'\breve bes'4 g'4
  \stemOn a'2 \section
  \stemOff a'\breve g'4 a'4
  \stemOn f'2 \section
  \stemOff a'\breve~\markup { \italic flexe }
  \stemOn g'2 \fine
}

```



## Creating blank staves

To create blank staves, generate empty measures then remove the `Bar_number_engraver` from the `Score` context, and the `Time_signature_engraver`, `Clef_engraver` and `Bar_engraver` from the `Staff` context.

```

#(set-global-staff-size 20)

```

```

\score {
  {
    \repeat unfold 12 { s1 \break }
  }
  \layout {
    indent = 0\in
    \context {
      \Staff
      \remove "Time_signature_engraver"
      \remove "Clef_engraver"
      \remove "Bar_engraver"
    }
    \context {
      \Score
      \remove "Bar_number_engraver"
    }
  }
}

```

```

% uncomment these lines for "letter" size
%{
\paper {
  #(set-paper-size "letter")
  ragged-last-bottom = ##f
  line-width = 7.5\in
  left-margin = 0.5\in
  bottom-margin = 0.25\in
  top-margin = 0.25\in
}

```

```
%}  
  
% uncomment these lines for "A4" size  
%{  
\paper {  
  #(set-paper-size "a4")  
  ragged-last-bottom = ##f  
  line-width = 180  
  left-margin = 15  
  bottom-margin = 10  
  top-margin = 10  
}  
%}
```

---

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## Creating custom key signatures

LilyPond supports custom key signatures. In this example, print for D minor with an extended range of printed flats.

```
\new Staff \with {
  \override StaffSymbol.line-count = #8
  \override KeySignature.flat-positions = #'((-7 . 6))
  \override KeyCancellation.flat-positions = #'((-7 . 6))
  % presumably sharps are also printed in both octaves
  \override KeySignature.sharp-positions = #'((-6 . 7))
  \override KeyCancellation.sharp-positions = #'((-6 . 7))

  \override Clef.stencil = #
  (lambda (grob) (grob-interpret-markup grob
    #{ \markup\combine
      \musicglyph "clefs.C"
      \translate #'(-3 . -2)
      \musicglyph "clefs.F"
    #})))
  clefPosition = #3
  middleCPosition = #3
  middleCClefPosition = #3
}

{
  \key d\minor
  f bes, f bes,
}
```



## Hälse über beide Systeme

Dieses Schnipsel zeigt den Einsatz von `Span_stem_engraver` und `\crossStaff`, um Hälse über Systeme hinweg automatisch zu verbinden. Die Länge des Halses muss definiert werden, da der variable Abstand zwischen Notenköpfen und Notensystemen automatisch errechnet wird.

```
\layout {
  \context {
    \PianoStaff
    \consists "Span_stem_engraver"
  }
}

\new PianoStaff <<
  \new Staff {
    <b d'>4 r d'16\> e'8. g8 r\! |
    e'8 f' g'4
    \voiceTwo \autoBeamOff
    % Down to lower staff
    \crossStaff { e'8 e'8 } e'4 |
  }
```

```

\new Staff {
  \clef bass
  \voiceOne \autoBeamOff
  % Up to upper staff
  \crossStaff { <e g>4 e, g16 a8. c8 } d |
  \autoBeamOn g8 f g4 \voiceTwo g8 g g4 |
}
>>

```



## Defining an engraver in Scheme: ambitus engraver

This example demonstrates how the ambitus engraver may be defined on the user side, with a Scheme engraver. This is basically a rewrite in Scheme of the code from `lily/ambitus-engraver.cc`.

```

#(use-modules (oop goops))

```

```

%%%
%%% Grob utilities
%%%
%%% These are literal rewrites of some C++ methods used by the ambitus engraver.

```

```

#(define (ly:separation-item::add-conditional-item grob grob-item)
  "Add @var{grob-item} to the array of conditional elements of @var{grob}.
  Rewrite of @code{Separation_item::add_conditional_item} from @file{lily/separation-item.cc}
  (ly:pointer-group-interface::add-grob grob 'conditional-elements grob-item))

```

```

#(define (ly:accidental-placement::accidental-pitch accidental-grob)
  "Get the pitch from the grob cause of @var{accidental-grob}.
  Rewrite of @code{accidental_pitch} from @file{lily/accidental-placement.cc}."
  (ly:event-property (ly:grob-property (ly:grob-parent accidental-grob Y) 'cause)
    'pitch))

```

```

#(define (ly:accidental-placement::add-accidental grob accidental-grob)
  "Add @var{accidental-grob}, an @code{Accidental} grob, to the
  list of the accidental grobs of @var{grob}, an @code{AccidentalPlacement}
  grob.
  Rewrite of @code{Accidental_placement::add_accidental} from @file{lily/accidental-placement.cc}
  (let ((pitch (ly:accidental-placement::accidental-pitch accidental-grob)))
    (set! (ly:grob-parent accidental-grob X) grob)
    (let* ((accidentals (ly:grob-object grob 'accidental-grobs))
           (handle (assq (ly:pitch-notename pitch) accidentals))
           (entry (if handle (cdr handle) '())))
      (set! (ly:grob-object grob 'accidental-grobs)
        (assq-set! accidentals

```



```

        (ly:pitch-notename pitch)
        (cons accidental-grob entry))))))

%%%
%%% Ambitus data structure
%%%

%%% The <ambitus> class holds the various grobs that are created
%%% to print an ambitus:
%%% - ambitus-group: the grob that groups all the components of an ambitus
%%% (Ambitus grob);
%%% - ambitus-line: the vertical line between the upper and lower ambitus
%%% notes (AmbitusLine grob);
%%% - ambitus-up-note and ambitus-down-note: the note head and accidental
%%% for the lower and upper note of the ambitus (see <ambitus-note> class
%%% below).
%%% The other slots define the key and clef context of the engraver:
%%% - start-c0: position of middle c at the beginning of the piece. It
%%% is used to place the ambitus notes according to their pitch;
%%% - start-key-sig: the key signature at the beginning of the piece. It
%%% is used to determine if accidentals shall be printed next to ambitus
%%% notes.

#(define-class <ambitus> ()
  (ambitus-group #:accessor ambitus-group)
  (ambitus-line #:accessor ambitus-line)
  (ambitus-up-note #:getter ambitus-up-note
    #:init-form (make <ambitus-note>))
  (ambitus-down-note #:getter ambitus-down-note
    #:init-form (make <ambitus-note>))
  (start-c0 #:accessor ambitus-start-c0
    #:init-value #f)
  (start-key-sig #:accessor ambitus-start-key-sig
    #:init-value '()))

%%% Accessor for the lower and upper note data of an ambitus
#(define-method (ambitus-note (ambitus <ambitus>) direction)
  "If @var{direction} is @code{UP}, then return the upper ambitus note
of @var{ambitus}, otherwise return the lower ambitus note."
  (if (= direction UP)
      (ambitus-up-note ambitus)
      (ambitus-down-note ambitus)))

%%% The <ambitus-note> class holds the grobs that are specific to ambitus
%%% (lower and upper) notes:
%%% - head: an AmbitusNoteHead grob;
%%% - accidental: an AmbitusAccidental grob, to be possibly printed next
%%% to the ambitus note head.
%%% Moreover:
%%% - pitch is the absolute pitch of the note
%%% - cause is the note event that causes this ambitus note, i.e. the lower
%%% or upper note of the considered music sequence.

```

```

(define-class <ambitus-note> ()
  (head #:accessor ambitus-note-head
        #:init-value #f)
  (accidental #:accessor ambitus-note-accidental
              #:init-value #f)
  (cause #:accessor ambitus-note-cause
         #:init-value #f)
  (pitch #:accessor ambitus-note-pitch
         #:init-value #f))

%%%
%%% Ambitus engraving logics
%%%
%%% Rewrite of the code from @file{lily/ambitus-engraver.cc}.

(define (make-ambitus translator)
  "Build an ambitus object: initialize all the grobs and their relations.

```

The Ambitus grob contain all other grobs:

```

Ambitus
|- AmbitusLine
|- AmbitusNoteHead   for upper note
|- AmbitusAccidental for upper note
|- AmbitusNoteHead   for lower note
|- AmbitusAccidental for lower note

```

The parent of an accidental is the corresponding note head, and the accidental is set as the 'accidental-grob of the note head so that is printed by the function that prints notes."

```

;; make the ambitus object
(let ((ambitus (make <ambitus>)))
  ;; build the Ambitus grob, which will contain all other grobs
  (set! (ambitus-group ambitus) (ly:engraver-make-grob translator 'Ambitus '()))
  ;; build the AmbitusLine grob (line between lower and upper note)
  (set! (ambitus-line ambitus) (ly:engraver-make-grob translator 'AmbitusLine '()))
  ;; build the upper and lower AmbitusNoteHead and AmbitusAccidental
  (for-each (lambda (direction)
              (let ((head (ly:engraver-make-grob translator 'AmbitusNoteHead '()))
                    (accidental (ly:engraver-make-grob translator 'AmbitusAccidental '()))
                    (group (ambitus-group ambitus)))
                ;; The parent of the AmbitusAccidental grob is the
                ;; AmbitusNoteHead grob
                (set! (ly:grob-parent accidental Y) head)
                ;; The AmbitusAccidental grob is set as the accidental-grob
                ;; object of the AmbitusNoteHead. This is later used by the
                ;; function that prints notes.
                (set! (ly:grob-object head 'accidental-grob) accidental)
                ;; both the note head and the accidental grobs are added
                ;; to the main ambitus grob.
                (ly:axis-group-interface::add-element group head)
                (ly:axis-group-interface::add-element group accidental)))
            (list 'upper 'lower)))

```



```

#(define-method (typeset-ambitus (ambitus <ambitus>) translator)
  "Typeset the ambitus:
- place the lower and upper ambitus notes according to their pitch and
  the position of the middle C;
- typeset or delete the note accidentals, according to the key signature.
  An accidental, if it is to be printed, is added to an AccidentalPlacement
  grob (a grob dedicated to the placement of accidentals near a chord);
- both note heads are added to the ambitus line grob, so that a line should
  be printed between them."
  ;; check if there are lower and upper pitches
  (if (and (ambitus-note-pitch (ambitus-note ambitus UP))
           (ambitus-note-pitch (ambitus-note ambitus DOWN)))
      ;; make an AccidentalPlacement grob, for placement of note accidentals
      (let ((accidental-placement (ly:engraver-make-grob
                                   translator
                                   'AccidentalPlacement
                                   (ambitus-note-accidental (ambitus-note ambitus DOWN)))))
        ;; For lower and upper ambitus notes:
        (for-each (lambda (direction)
                     (let ((pitch (ambitus-note-pitch (ambitus-note ambitus direction))))
                       ;; set the cause and the staff position of the ambitus note
                       ;; according to the associated pitch
                       (set! (ly:grob-property (ambitus-note-head (ambitus-note ambitus direction))
                                                'cause)
                             (ambitus-note-cause (ambitus-note ambitus direction)))
                       (set! (ly:grob-property (ambitus-note-head (ambitus-note ambitus direction))
                                                'staff-position)
                             (+ (ambitus-start-c0 ambitus)
                                (ly:pitch-steps pitch)))
                       ;; determine if an accidental shall be printed for this note,
                       ;; according to the key signature
                       (let* ((handle (or (assoc (cons (ly:pitch-octave pitch)
                                                         (ly:pitch-notename pitch))
                                                (ambitus-start-key-sig ambitus))
                                           (assoc (ly:pitch-notename pitch)
                                                  (ambitus-start-key-sig ambitus))))
                         (sig-alter (if handle (cdr handle) 0)))
                       (cond ((= (ly:pitch-alteration pitch) sig-alter)
                              ;; the note alteration is in the key signature
                              ;; => it does not have to be printed
                              (ly:grob-suicide!
                               (ambitus-note-accidental (ambitus-note ambitus direction)))
                              (set! (ly:grob-object (ambitus-note-head (ambitus-note ambitus direction))
                                                       'accidental-grob)
                                    '()))
                              (else
                               ;; otherwise, the accidental shall be printed
                               (set! (ly:grob-property (ambitus-note-accidental
                                                         (ambitus-note ambitus direction))
                                                         'alteration)
                                     (ly:pitch-alteration pitch))))))
                     direction)))
  )

```

```

;; add the AccidentalPlacement grob to the
;; conditional items of the AmbitusNoteHead
(ly:separation-item::add-conditional-item
  (ambitus-note-head (ambitus-note ambitus direction))
  accidental-placement)
;; add the AmbitusAccidental to the list of the
;; AccidentalPlacement grob accidentals
(ly:accidental-placement::add-accidental
  accidental-placement
  (ambitus-note-accidental (ambitus-note ambitus direction)))
;; add the AmbitusNoteHead grob to the AmbitusLine grob
(ly:pointer-group-interface::add-grob
  (ambitus-line ambitus)
  'note-heads
  (ambitus-note-head (ambitus-note ambitus direction))))
(list DOWN UP))
;; add the AccidentalPlacement grob to the main Ambitus grob
(ly:axis-group-interface::add-element (ambitus-group ambitus) accidental-placement)
;; no notes ==> suicide the grobs
(begin
  (for-each (lambda (direction)
    (ly:grob-suicide! (ambitus-note-accidental (ambitus-note ambitus direction))
      (ly:grob-suicide! (ambitus-note-head (ambitus-note ambitus direction))))
    (list DOWN UP))
    (ly:grob-suicide! ambitus-line))))

%%%
%%% Ambitus engraver definition
%%%
#(define ambitus-engraver
  (lambda (context)
    (let ((ambitus #f))
      ;; when music is processed: make the ambitus object, if not already built
      (make-engraver
        ((process-music translator)
          (if (not ambitus)
              (set! ambitus (make-ambitus translator))))
        ;; set the ambitus clef and key signature state
        ((stop-translation-timestep translator)
          (if ambitus
              (initialize-ambitus-state ambitus translator)))
        ;; when a note-head grob is built, update the ambitus notes
        (acknowledgers
          ((note-head-interface engraver grob source-engraver)
            (if ambitus
                (update-ambitus-notes ambitus grob))))
        ;; finally, typeset the ambitus according to its upper and lower notes
        ;; (if any).
        ((finalize translator)
          (if ambitus
              (typeset-ambitus ambitus translator)))))))

```

```

%%%
%%% Example
%%%

\score {
  \new StaffGroup <<
    \new Staff { c'4 des' e' fis' gis' }
    \new Staff { \clef "bass" c4 des ~ des ees b, }
  >>
  \layout { \context { \Staff \consists #ambitus-engraver } }
}

```



## Displaying a whole GrandStaff system if only one of its staves is alive

In orchestral scores sometimes single or groups of instruments are silent for a while and their staves can be removed for that time (with `\removeEmptyStaves`).

When they play again it is often preferred to show the staves of *all instruments of such a group*. This can be done adding the `Keep_alive_together_engraver` in the grouper (e.g., a `GrandStaff` or a `StaffGroup`).

In the example the violins are silent in the 2nd system and in the 3rd system. Only the first violin plays the last measure but the staff of the second violin is also displayed.

```

\score {
  <<
    \new StaffGroup = "StaffGroup_woodwinds"
    <<
      \new Staff = "Staff_flute" \with {
        instrumentName = "Flute"
        shortInstrumentName = "Fl"
      }
      \relative c' {
        \repeat unfold 3 { c'4 c c c | c c c c | c c c c | \break }
      }
    >>
  >>
  \new StaffGroup = "StaffGroup_strings"
  <<
    \new GrandStaff = "GrandStaff_violins"
    <<
      \new Staff = "StaffViolinI" \with {
        instrumentName = "Violin I"
        shortInstrumentName = "Vi I"
      }
      \relative c'' {
        a1 \repeat unfold 7 { s1 } \repeat unfold 12 a16 a4

```

```

    }
    \new Staff = "StaffViolinII" \with {
      instrumentName = "Violin II"
      shortInstrumentName = "Vi II"
    }
    \relative c' { e1 \repeat unfold 8 { s1 } }
  >>
  \new Staff = "Staff_cello" \with {
    instrumentName = "Cello"
    shortInstrumentName = "Ce"
  }
  \relative c { \clef bass \repeat unfold 9 { c1 } }
  >>
  >>
}

\paper { tagline = ##f }

\layout {
  indent = 3.0\cm
  short-indent = 1.5\cm
  \context {
    \GrandStaff
    \consists Keep_alive_together_engraver
  }
  \context {
    \Staff
    \RemoveEmptyStaves
  }
}

```

The image displays a musical score for a chamber ensemble. The score is organized into two systems. The first system includes parts for Flute, Violin I, Violin II, and Cello. The Flute part is written on a single staff in treble clef, starting with a common time signature 'C' and containing a sequence of eighth notes. The Violin I and Violin II parts are grouped together with a brace on the left and are written on staves in treble clef, each starting with a common time signature 'C' and containing a single half note. The Cello part is written on a staff in bass clef, starting with a common time signature 'C' and containing a single half note. The second system includes parts for Fl and Ce. The Fl part is written on a staff in treble clef, starting with a common time signature 'C' and containing a sequence of eighth notes. The Ce part is written on a staff in bass clef, starting with a common time signature 'C' and containing a single half note. A small number '4' is positioned above the Fl staff in the second system.

The image shows a musical score snippet with four staves. The first staff is labeled 'Fl' (Flute) and begins with a measure number '7'. It contains a sequence of eighth notes. The second and third staves are labeled 'Vi I' (Violin I) and 'Vi II' (Violin II) respectively, and are grouped by a brace. The Violin I staff has a series of beamed eighth notes in the third measure. The fourth staff is labeled 'Ce' (Cello) and contains a few notes in the first two measures.

## Engravers one-by-one

The notation problem, creating a certain symbol, is handled by plugins. Each plugin is called an *engraver*. In this example, (some) engravers are switched on one by one, in the following order:

- note heads,
- staff symbol,
- clef,
- stem,
- beams, slurs, accents,
- accidentals, bar lines, time signature and key signature.

Engravers are grouped. For example, note heads, slurs, beams, etc., form a *Voice* context. Engravers for key signature, accidentals, bar line, etc., form a *Staff* context.

```
\header { tagline = ##f }
```

```
topVoice = \relative c' {
  \key d \major
  es8([ g] a[ fis])
  b4
  b16[-. b-. b-. cis-.]
  d4->
}
```

```
% empty staff and voice contexts
```

```
MyStaff = \context {
  \type Engraver_group
  \name Staff
```

```
  \accepts Voice
  \defaultchild Voice
}
```

```
MyVoice = \context {
  \type Engraver_group
  \name Voice
}
```



```

% add note heads
MyVoice = \context {
  \MyVoice
  \consists Note_heads_engraver
}
\score {
  \topVoice
  \layout {
    \context { \MyStaff }
    \context { \MyVoice }
  }
}

% add staff
MyStaff = \context {
  \MyStaff
  \consists Staff_symbol_engraver
}
\score {
  \topVoice
  \layout {
    \context { \MyStaff }
    \context { \MyVoice }
  }
}

% add clef
MyStaff = \context {
  \MyStaff
  \consists Clef_engraver
}
\score {
  \topVoice
  \layout {
    \context { \MyStaff }
    \context { \MyVoice }
  }
}

% add stems
MyVoice = \context {
  \MyVoice
  \consists Stem_engraver
}
\score {
  \topVoice
  \layout {
    \context { \MyStaff }
    \context { \MyVoice }
  }
}

```

```

}

% add beams, slurs, and accents
MyVoice = \context {
  \MyVoice
  \consists Beam_engraver
  \consists Slur_engraver
  \consists Script_engraver
  \consists Rhythmic_column_engraver
}

\score {
  \topVoice
  \layout {
    \context { \MyStaff }
    \context { \MyVoice }
  }
}

% add accidentals, bar, time signature, and key signature
MyStaff = \context {
  \MyStaff
  \consists Accidental_engraver
  \consists Bar_engraver
  \consists Time_signature_engraver
  \consists Key_engraver
}

\score {
  \topVoice
  \layout {
    \context { \MyStaff }
    \context { \MyVoice }
  }
}

```



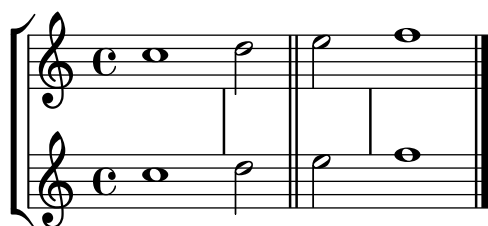
## Mensurstriche-Layout (Taktstriche zwischen den Systemen)

Das Mensurstriche-Layout, in welchem die Taktlinien nicht auf den Systemen, sondern zwischen den Systemen gesetzt werden, kann mit einer `StaffGroup` anstelle von `ChoirStaff` erreicht werden. Die Taktlinien auf den Systemen werden mit der `transparent`-Eigenschaft ausgelöscht.

```
\layout {
  \context {
    \Staff
    measureBarType = "-span|"
  }
}
```

```
music = \fixed c'' {
  c1
  d2 \section e2
  f1 \fine
}
```

```
\new StaffGroup <<
  \new Staff \music
  \new Staff \music
>>
```

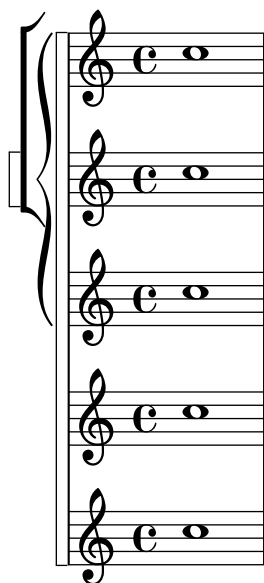


## Systeme schachteln

Die Eigenschaft `systemStartDelimiterHierarchy` kann eingesetzt werden, um komplizierte geschachtelte Systemklammern zu erstellen. Der Befehl `\set StaffGroup.systemStartDelimiterHierarchy` nimmt eine Liste mit der Anzahl der Systeme, die ausgegeben werden, auf. Vor jedem System kann eine Systemanfangsklammer angegeben werden. Sie muss in Klammern eingefügt werden und umfasst so viele Systeme, wie die Klammer einschließt. Elemente in der Liste können ausgelassen werden, aber die erste Klammer umfasst immer die gesamte Gruppe. Die Möglichkeiten der Anfangsklammer sind: `SystemStartBar`, `SystemStartBracket`, `SystemStartBrace` und `SystemStartSquare`.

```
\new StaffGroup
\relative c'' <<
  \override StaffGroup.SystemStartSquare.collapse-height = 4
  \set StaffGroup.systemStartDelimiterHierarchy
    = #'(SystemStartSquare (SystemStartBrace (SystemStartBracket a
                                              (SystemStartSquare b) ) c ) d)

  \new Staff { c1 }
  \new Staff { c1 }
  \new Staff { c1 }
  \new Staff { c1 }
  \new Staff { c1 }
>>
```



## Numbering groups of measures

This snippet demonstrates the use of the `Measure_counter_engraver` to number groups of successive measures. Any stretch of measures may be numbered, whether consisting of repetitions or not.

The engraver must be added to the appropriate context. Here, a `Staff` context is used; another possibility is a `Dynamics` context.

The counter is begun with `\startMeasureCount` and ended with `\stopMeasureCount`. Numbering will start by default with 1, but this behavior may be modified by overriding the `count-from` property.

When a measure extends across a line break, the number will appear twice, the second time in parentheses.

```
\layout {
  \context {
    \Staff
    \consists #Measure_counter_engraver
  }
}

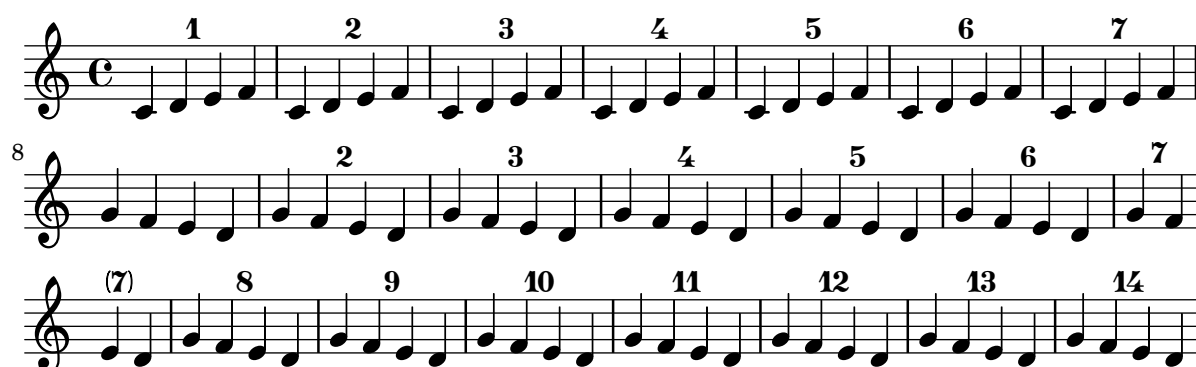
\new Staff {
  \startMeasureCount
  \repeat unfold 7 {
    c'4 d' e' f'
  }
  \stopMeasureCount
  \bar "||"
  g'4 f' e' d'
  \override Staff.MeasureCounter.count-from = #2
  \startMeasureCount
  \repeat unfold 5 {
    g'4 f' e' d'
  }
  g'4 f'
  \bar ""
}
```

```

\break
e'4 d'
\repeat unfold 7 {
  g'4 f' e' d'
}
\stopMeasureCount
}

\paper { tagline = ##f }

```



## Print ChordNames with same root and different bass as slash and bass-note

To print subsequent ChordNames only differing in its bass note as slash and bass note use the here defined engraver. The behaviour may be controlled in detail by the chordChanges context property.

```

#(define Bass_changes_equal_root_engraver
  (lambda (ctx)
    "For sequential @code{ChordNames} with same root, but different bass, the root
    markup is dropped: D D/C D/B -> D /C /B
    The behaviour may be controlled by setting the @code{chordChanges}
    context-property."
    (let ((chord-pitches '())
          (last-chord-pitches '())
          (bass-pitch #f))
      (make-engraver
        ((initialize this-engraver)
         (let ((chord-note-namer (ly:context-property ctx 'chordNoteNamer)))
           ;; Set 'chordNoteNamer, respect user setting if already done
           (ly:context-set-property! ctx 'chordNoteNamer
                                     (if (procedure? chord-note-namer)
                                         chord-note-namer
                                         note-name->markup))))
        (listeners
         ((note-event this-engraver event)
          (let* ((pitch (ly:event-property event 'pitch))
                 (pitch-name (ly:pitch-notename pitch))
                 (pitch-alt (ly:pitch-alteration pitch))
                 (bass (ly:event-property event 'bass #f))
                 (inversion (ly:event-property event 'inversion #f)))
            ;; Collect notes of the chord

```

```

;; - to compare inversed chords we need to collect the bass note
;;   as usual member of the chord, whereas an added bass must be
;;   treated separate from the usual chord-notes
;; - notes are stored as pairs containing their
;;   pitch-name (an integer), i.e. disregarding their octave and
;;   their alteration
(cond (bass (set! bass-pitch pitch))
      (inversion
       (set! bass-pitch pitch)
       (set! chord-pitches
              (cons (cons pitch-name pitch-alt) chord-pitches)))
      (else
       (set! chord-pitches
              (cons (cons pitch-name pitch-alt) chord-pitches))))))
(acknowledgers
 ((chord-name-interface this-engraver grob source-engraver)
  (let ((chord-changes (ly:context-property ctx 'chordChanges #f)))
    ;; If subsequent chords are equal apart from their bass,
    ;; reset the 'text-property.
    ;; Equality is done by comparing the sorted lists of this chord's
    ;; elements and the previous chord. Sorting is needed because
    ;; inverted chords may have a different order of pitches.
    ;; `chord-changes' needs to be true
    (if (and bass-pitch
              chord-changes
              (equal?
               (sort chord-pitches car<)
               (sort last-chord-pitches car<)))
        (ly:grob-set-property! grob 'text
                                (make-line-markup
                                 (list
                                  (ly:context-property ctx 'slashChordSeparator)
                                  ((ly:context-property ctx 'chordNoteNamer)
                                   bass-pitch
                                   (ly:context-property ctx 'chordNameLowercaseMinor))))))
        (set! last-chord-pitches chord-pitches)
        (set! chord-pitches '())
        (set! bass-pitch #f))))
 ((finalize this-engraver)
  (set! last-chord-pitches '()))))

myChords = \chordmode {
  %\germanChords

  \set chordChanges = ##t
  d2:m d:m/cis

  d:m/c
  \set chordChanges = ##f
  d:m/b

  e1:7

```

```

\set chordChanges = ##t
e
\break
\once \set chordChanges = ##f
e1/f
e2/gis e/+gis e e:m/f d:m d:m/cis d:m/c
\set chordChanges = ##f
d:m/b
}

<<
\new ChordNames
  \with { \consists #Bass_changes_equal_root_engraver }
  \myChords
\new Staff \myChords
>>

```

## Entfernung von Taktnummern in einer Partitur

Taktnummern können vollkommen aus den Noten entfernt werden, indem man den `Bar_number_engraver` aus dem `Score`-Kontext entfernt.

```

\layout {
  \context {
    \Score
    \omit BarNumber
    % or:
    %\remove "Bar_number_engraver"
  }
}

\relative c' {
  c4 c c c \break
  c4 c c c
}

\paper { tagline = ##f }

```



## Eine eckige Klammer zu Beginn von Systemgruppen benutzen

Die Klammer zu Beginn von Systemgruppen kann auch in eine eckige Klammer (SystemStartSquare) umgewandelt werden, wenn man sie explizit im StaffGroup- oder ChoirStaffGroup-Kontext setzt.

```
\score {
  \new StaffGroup { <<
    \set StaffGroup.systemStartDelimiter = #'SystemStartSquare
    \new Staff { c'4 d' e' f' }
    \new Staff { c'4 d' e' f' }
  >> }
}
```



## Using marklines in a Frenched score

Using MarkLine contexts (such as in LSR1010 (<https://lsr.di.unimi.it/LSR/Item?id=1010>)) in a Frenched score can be problematic if all the staves between two MarkLines are removed in one system. The Keep\_alive\_together\_engraver can be used within each StaffGroup to keep the MarkLine alive only as long as the other staves in the group stay alive.

```
bars = {
  \tempo "Allegro" 4=120
  s1*2
  \repeat unfold 5 { \mark \default s1*2 }
  \bar "||"
  \tempo "Adagio" 4=40
  s1*2
  \repeat unfold 8 { \mark \default s1*2 }
  \bar "|."
}

winds = \repeat unfold 120 { c''4 }
trumpet = { \repeat unfold 8 g'2 R1*16 \repeat unfold 4 g'2 R1*8 }
trombone = { \repeat unfold 4 c'1 R1*8 d'1 R1*17 }
strings = \repeat unfold 240 { c''8 }

#(set-global-staff-size 16)
\paper {
  systems-per-page = 5
  ragged-last-bottom = ##f
}

\layout {
```



```

indent = 15\mm
short-indent = 5\mm
\context {
  \name MarkLine
  \type Engraver_group
  \consists Output_property_engraver
  \consists Axis_group_engraver
  \consists Mark_engraver
  \consists Metronome_mark_engraver
  \consists Staff_collecting_engraver
  \override VerticalAxisGroup.remove-empty = ##t
  \override VerticalAxisGroup.remove-layer = #'any
  \override VerticalAxisGroup.staff-affinity = #DOWN
  \override VerticalAxisGroup.nonstaff-relatedstaff-spacing.padding = 1
  keepAliveInterfaces = #'()
}
\context {
  \Staff
  \override VerticalAxisGroup.remove-empty = ##t
  \override VerticalAxisGroup.remove-layer = ##f
}
\context {
  \StaffGroup
  \accepts MarkLine
  \consists Keep_alive_together_engraver
}
\context {
  \Score
  \remove Mark_engraver
  \remove Metronome_mark_engraver
  \remove Staff_collecting_engraver
}
}

\score {
  <<
    \new StaffGroup = "winds" \with {
      instrumentName = "Winds"
      shortInstrumentName = "Winds"
    } <<
    \new MarkLine \bars
    \new Staff \winds
  >>
  \new StaffGroup = "brass" <<
    \new MarkLine \bars
    \new Staff = "trumpet" \with {
      instrumentName = "Trumpet"
      shortInstrumentName = "Tpt"
    } \trumpet
    \new Staff = "trombone" \with {
      instrumentName = "Trombone"
      shortInstrumentName = "Tbn"
    }
  >>
}

```

```

    } \trombone
  >>
  \new StaffGroup = "strings" \with {
    instrumentName = "Strings"
    shortInstrumentName = "Strings"
  } <<
    \new MarkLine \bars
    \new Staff = "strings" { \strings }
  >>
  >>
}

```

The musical score is organized into four systems, each containing staves for Winds, Trumpet, Trombone, and Strings. The tempo and meter are indicated at the beginning of each system.

- System 1 (Measures 6-9):** Marked **Allegro (♩ = 120)**. The Winds staff has measures 6-9. The Trumpet and Trombone staves have measures 6-9. The Strings staff has measures 6-9. Sections A and B are indicated above the Winds staff.
- System 2 (Measures 10-13):** The Winds staff has measures 10-13. The Strings staff has measures 10-13. Sections C and D are indicated above the Winds staff.
- System 3 (Measures 14-15):** Marked **Adagio (♩ = 40)**. The Winds staff has measures 14-15. The Tbn staff has measures 14-15. The Strings staff has measures 14-15. Sections E and F are indicated above the Winds staff.
- System 4 (Measures 16-19):** The Winds staff has measures 16-19. The Strings staff has measures 16-19. Sections G and H are indicated above the Winds staff.

The image shows a musical score for Winds, Tpt, and Strings. The score is divided into two systems. The first system (measures 21-25) features Winds, Tpt, and Strings. The second system (measures 26-30) features Winds and Strings. Lyrics J, K, L, M, N are placed above and below the staves.

## Vorlage für Vokalensemble mit dem Gesangstext über und unter dem System

In diesem Beispiel werden die Texte mit den Befehlen `alignAboveContext` und `alignBelowContext` über und unter dem System angeordnet.

```
global = {
  \key c \major
  \time 4/4
}

sopMusic = \relative c' {
  c4 c c8[( b)] c4
}
sopWords = \lyricmode {
  hi hi hi hi
}

altoMusic = \relative c' {
  e4 f d e
}
altoWords = \lyricmode {
  ha ha ha ha
}

tenorMusic = \relative c' {
  g4 a f g
}
tenorWords = \lyricmode {
  hu hu hu hu
}

bassMusic = \relative c {
  c4 c g c
}
bassWords = \lyricmode {
```

```

ho ho ho ho
}

\score {
  \new ChoirStaff <<
    \new Staff = "women" <<
      \new Voice = "sopranos" { \voiceOne << \global \sopMusic >> }
      \new Voice = "altos" { \voiceTwo << \global \altoMusic >> }
    >>
    \new Lyrics \with { alignAboveContext = "women" }
      \lyricsto "sopranos" \sopWords
    \new Lyrics \with { alignBelowContext = "women" }
      \lyricsto "altos" \altoWords
    % we could remove the line about this with the line below, since
    % we want the alto lyrics to be below the alto Voice anyway.
    % \new Lyrics \lyricsto "altos" \altoWords

    \new Staff = "men" <<
      \clef bass
      \new Voice = "tenors" { \voiceOne << \global \tenorMusic >> }
      \new Voice = "basses" { \voiceTwo << \global \bassMusic >> }
    >>
    \new Lyrics \with { alignAboveContext = "men" }
      \lyricsto "tenors" \tenorWords
    \new Lyrics \with { alignBelowContext = "men" }
      \lyricsto "basses" \bassWords
    % again, we could replace the line above this with the line below.
    % \new Lyrics \lyricsto "basses" \bassWords
  >>
}

```



## Sologesang und zweistimmiger Refrain

Diese Vorlage erstellt eine Partitur, die mit Sologesang beginnt und einen Refrain für zwei Stimmen enthält. Sie zeigt auch die Benutzung von Platzhalter-Pausen innerhalb der `\global`-Variable, um Taktwechsel (und andere Elemente, die für alle Stimmen gleich sind) für das gesamte Stück zu definieren.

```
\header { tagline = ##f }
```

```

global = {
  \key g \major

```

```

% verse
\time 3/4
s2.*2
\break

% refrain
\time 2/4
s2*2
\bar "|."
}

SoloNotes = \relative g' {
  \clef "treble"

  % verse
  g4 g g |
  b4 b b |

  % refrain
  R2*2 |
}

SoloLyrics = \lyricmode {
  One two three |
  four five six |
}

SopranoNotes = \relative c'' {
  \clef "treble"

  % verse
  R2.*2 |

  % refrain
  c4 c |
  g4 g |
}

SopranoLyrics = \lyricmode {
  la la |
  la la |
}

BassNotes = \relative c {
  \clef "bass"

  % verse
  R2.*2 |

  % refrain
  c4 e |

```

```

    d4 d |
  }

BassLyrics = \lyricmode {
  dum dum |
  dum dum |
}

\score {
  <<
    \new Voice = "SoloVoice" << \global \SoloNotes >>
    \new Lyrics \lyricsto "SoloVoice" \SoloLyrics

    \new ChoirStaff <<
      \new Voice = "SopranoVoice" << \global \SopranoNotes >>
      \new Lyrics \lyricsto "SopranoVoice" \SopranoLyrics

      \new Voice = "BassVoice" << \global \BassNotes >>
      \new Lyrics \lyricsto "BassVoice" \BassLyrics
    >>
  >>
  \layout {
    ragged-right = ##t
    \context { \Staff
      % these lines prevent empty staves from being printed
      \RemoveEmptyStaves
      \override VerticalAxisGroup.remove-first = ##t
    }
  }
}

```



## Tweaks and overrides

Abschnitt “Changing defaults” in *Notationsreferenz*

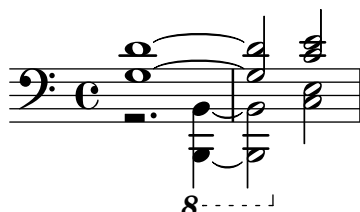
Abschnitt “Tweaking output” in *Handbuch zum Lernen*

### Adding an ottava marking to a single voice

If you have more than one voice on the staff, setting octavation in one voice transposes the position of notes in all voices for the duration of the ottava bracket. If the octavation is only intended to apply to one voice, the `Ottava_spanner_engraver` should be moved to `Voice` context.

```
\layout {
  \context {
    \Staff
    \remove Ottava_spanner_engraver
  }
  \context {
    \Voice
    \consists Ottava_spanner_engraver
  }
}

{
  \clef bass
  << { <g d'>1~ q2 <c' e'> }
  \\
  {
    r2.
    \ottava -1
    <b,,, b,,,>4 ~ |
    q2
    \ottava 0
    <c e>2
  }
  >>
}
```



### Adding links to objects

To add a link to a grob stencil you can use `add-link` as defined here. It works both with `\override` and `\tweak`.

Drawback: point-and-click is disturbed for the linked grobs.

Limitation: Works for PDF only.

The linked objects are colored with a separate command. Note that the links are not displayed and are not clickable from inside the LSR.

```
#(define (add-link url-strg)
```

```

(lambda (grob)
  (let* ((stil (ly:grob-property grob 'stencil)))
    (if (ly:stencil? stil)
      (let* ((x-ext (ly:stencil-extent stil X))
              (y-ext (ly:stencil-extent stil Y))
              (url-expr `(url-link ,url-strg ,x-ext ,y-ext))
              (new-stil
                (ly:stencil-add
                 (ly:make-stencil url-expr x-ext y-ext)
                 stil)))
        (ly:grob-set-property! grob 'stencil new-stil))))))

%%% test

%% For easier maintenance of this snippet the URL is formatted to use the
%% actually used LilyPond version.
%% Of course a literal URL would work as well.

#(define major.minor-version
  (string-join (take (string-split (lilypond-version) #\.) 2) "."))

urlI =
#(format #f
  "http://lilypond.org/doc/v~a/Documentation/notation/writing-pitches"
  major.minor-version)

urlII =
#(format #f
  "http://lilypond.org/doc/v~a/Documentation/notation/rhythms"
  major.minor-version)

urlIII =
#(format #f
  "http://lilypond.org/doc/v~a/Documentation/notation/note-heads"
  major.minor-version)

urlIV =
#(format #f
  "http://lilypond.org/doc/v~a/Documentation/notation/beams"
  major.minor-version)

urlV =
#(format #f
  "http://lilypond.org/doc/v~a/Documentation/notation/note-head-styles"
  major.minor-version)

urlVI =
#(format #f
  "http://lilypond.org/doc/v~a/Documentation/notation/writing-pitches"
  major.minor-version)

\relative c' {

```



```

\key cis \minor

\once \override Staff.Clef.color = #green
\once \override Staff.Clef.after-line-breaking =
  #(add-link urlI)

\once \override Staff.TimeSignature.color = #green
\once \override Staff.TimeSignature.after-line-breaking =
  #(add-link urlIII)

\once \override NoteHead.color = #green
\once \override NoteHead.after-line-breaking =
  #(add-link urlIIII)

cis'1
\once \override Beam.color = #green
\once \override Beam.after-line-breaking =
  #(add-link urlIV)
cis8 dis e fis gis2
<gis,
  \tweak Accidental.color #green
  \tweak Accidental.after-line-breaking #(add-link urlVI)
  \tweak color #green
  \tweak after-line-breaking #(add-link urlV)
  \tweak style #'harmonic
bis
dis
fis
>1
<cis, cis' e>
}

```



## Adding markups in a tablature

By default markups does not show in a tablature.

To make them appear, simply use the command `\revert TabStaff.TextScript.stencil`

%% <http://lsr.di.unimi.it/LSR/Item?id=919>

% by P.P.Schneider on June 2014

```
high = { r4 r8 <g c'> q r8 r4 }
```

```
low = { c4 r4 c8 r8 g,8 b, }
```

```
pulse = { s8^"1" s^"&" s^"2" s^"&" s^"3" s^"&" s^"4" s^"&" }
```

```

\score {
  \new TabStaff {
    \repeat unfold 2 << \high \\\ \low \\\ \pulse >>

```

```

}
\layout {
  \context {
    \TabStaff
    \clef moderntab
    \revert TextScript.stencil
    \override TextScript.font-series = #'bold
    \override TextScript.font-size = #-2
    \override TextScript.color = #red
  }
  \context {
    \Score
    proportionalNotationDuration = \musicLength 8
  }
}
}

```

	1	&	2	&	3	&	4	&	1	&	2	&	3	&	4	&
<b>T</b>																
<b>A</b>																
<b>B</b>	3				3				2	3				3		2

## Adding timing marks to long glissandi

Skipped beats in very long glissandi are sometimes indicated by timing marks, often consisting of stems without noteheads. Such stems can also be used to carry intermediate expression markings.

If the stems do not align well with the glissando, they may need to be repositioned slightly.

```

glissandoSkipOn = {
  \override NoteColumn.glissando-skip = ##t
  \hide NoteHead
  \override NoteHead.no-ledgers = ##t
}

```

```

glissandoSkipOff = {
  \revert NoteColumn.glissando-skip
  \undo \hide NoteHead
  \revert NoteHead.no-ledgers
}

```

```

\relative c'' {
  r8 f8\glissando
  \glissandoSkipOn
  f4 g a a8\noBeam
  \glissandoSkipOff
  a8

  r8 f8\glissando
  \glissandoSkipOn
  g4 a8
  \glissandoSkipOff
  a8 |
}

```

```

r4 f\glissando \<
\glissandoSkip0n
a4\f \>
\glissandoSkip0ff
b8\! r |
}

```



## Adjusting grace note spacing

The space given to grace notes can be adjusted using the spacing-increment property of `Score.GraceSpacing`.

```

graceNotes = {
  \grace { c4 c8 c16 c32 }
  c8
}

\relative c' ' {
  c8
  \graceNotes
  \override Score.GraceSpacing.spacing-increment = #2.0
  \graceNotes
  \revert Score.GraceSpacing.spacing-increment
  \graceNotes
}

```



## Adjusting lyrics vertical spacing

This snippet shows how to bring the lyrics line closer to the staff.

*% Default layout:*

```

<<
\new Staff \new Voice = melody \relative c' {
  c4 d e f
  g4 f e d
  c1
}
\new Lyrics \lyricsto melody { aa aa aa aa aa aa aa aa aa }

\new Staff {
  \new Voice = melody \relative c' {
    c4 d e f
    g4 f e d
    c1
  }
}

```

```

}
% Reducing the minimum space below the staff and above the lyrics:
\new Lyrics \with {
  \override VerticalAxisGroup.nonstaff-relatedstaff-spacing =
    #'((basic-distance . 1))
}
\lyricsto melody { aa aa aa aa aa aa aa aa aa }
>>

```



## Adjusting slur positions vertically

Using `\override Slur.positions` it is possible to set the vertical position of the start and end points of a slur to absolute values (or rather, forcing LilyPond's slur algorithm to consider these values as desired). In many cases, this means a lot of trial and error until good values are found. You probably have tried the `\offset` command next just to find out that it doesn't work for slurs, emitting a warning instead.

The code in this snippet allows you to tweak the vertical start and end positions by specifying *relative* changes, similar to `\offset`.

```

Syntax: \offsetPositions #'(dy1 . dy2)

offsetPositions =
#(define-music-function (offsets) (number-pair?)
  #{
    \once \override Slur.control-points =
      #(lambda (grob)
        (match-let (((_ . y1) _ _ (_ . y2))
                    (ly:slur::calc-control-points grob))
          ((off1 . off2) offsets))
        (set! (ly:grob-property grob 'positions)
              (cons (+ y1 off1) (+ y2 off2)))
        (ly:slur::calc-control-points grob)))
    #})

\relative c' {
  c4(^"default" c, d2)
  \offsetPositions #'(0 . 1)
  c'4(^"(0 . 1)" c, d2)
  \offsetPositions #'(0 . 2)
  c'4(^"(0 . 2)" c, d2)
  \bar "||"
  g4(^"default" a d'2)
  \offsetPositions #'(1 . 0)
  g,,4(^"(1 . 0)" a d'2)
  \offsetPositions #'(2 . 0)
  g,,4(^"(2 . 0)" a d'2)
}

```

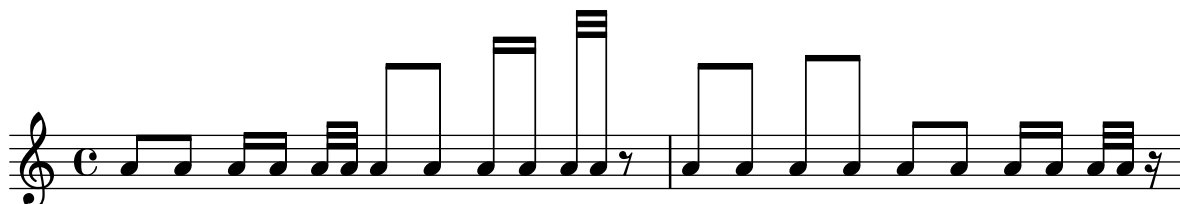
}



## Altering the length of beamed stems

Stem lengths on beamed notes can be varied by overriding the `beamed-lengths` property of the `details` of the `Stem`. If a single value is used as an argument, the length applies to all stems. When multiple arguments are used, the first applies to eighth notes, the second to sixteenth notes and so on. The final argument also applies to all notes shorter than the note length of the final argument. Non-integer arguments may also be used.

```
\relative c' {
  \override Stem.details.beamed-lengths = #'(2)
  a8[ a] a16[ a] a32[ a]
  \override Stem.details.beamed-lengths = #'(8 10 12)
  a8[ a] a16[ a] a32[ a] r8
  \override Stem.details.beamed-lengths = #'(8)
  a8[ a]
  \override Stem.details.beamed-lengths = #'(8.5)
  a8[ a]
  \revert Stem.details.beamed-lengths
  a8[ a] a16[ a] a32[ a] r16
}
```



## Alternative Taktnummerierung

Zwei alternative Methoden können eingestellt werden, die die Taktnummerierung beeinflussen, insbesondere bei Wiederholungen.

```
music = \relative c' {
  \repeat volta 3 {
    c4 d e f |
    \alternative {
      \volta 1 { c4 d e f | c2 d \break }
      \volta 2 { f4 g a b | f4 g a b | f2 a | \break }
      \volta 3 { c4 d e f | c2 d } } }
  c1 \bar "|"
}

\markup "default"
{
  \music
}
```

```
\markup \typewriter "'numbers"
```

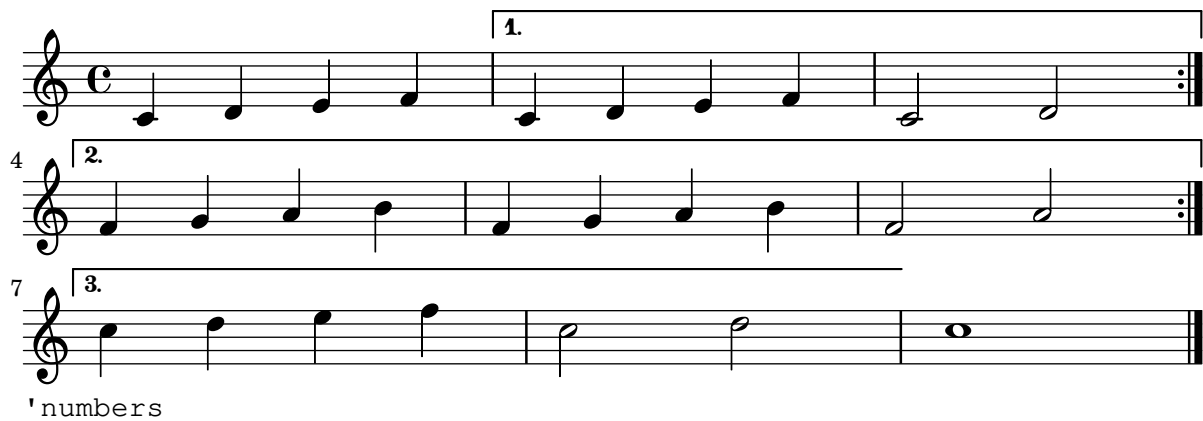
```
{
  \set Score.alternativeNumberingStyle = #'numbers
  \music
}
```

```
\markup \typewriter "'numbers-with-letters"
```

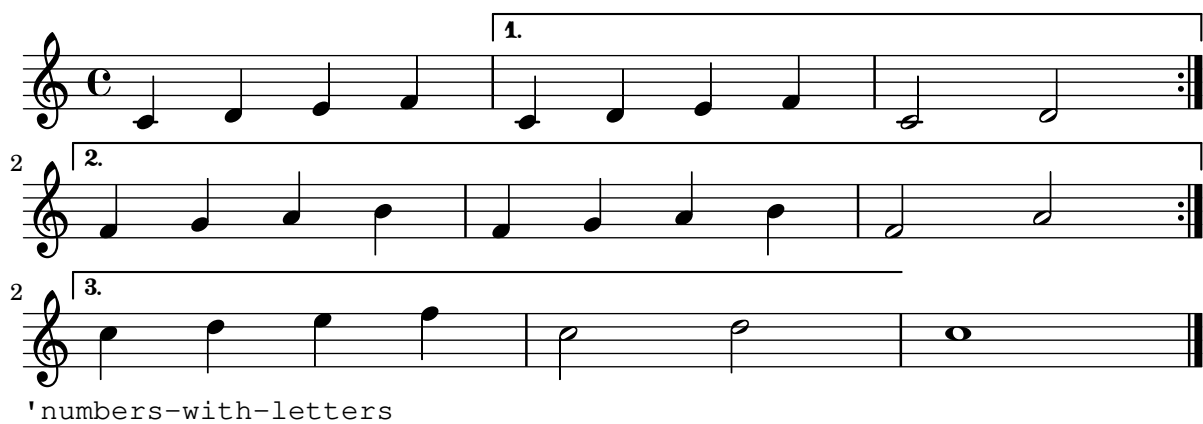
```
{
  \set Score.alternativeNumberingStyle = #'numbers-with-letters
  \music
}
```

```
\paper { tagline = ##f }
```

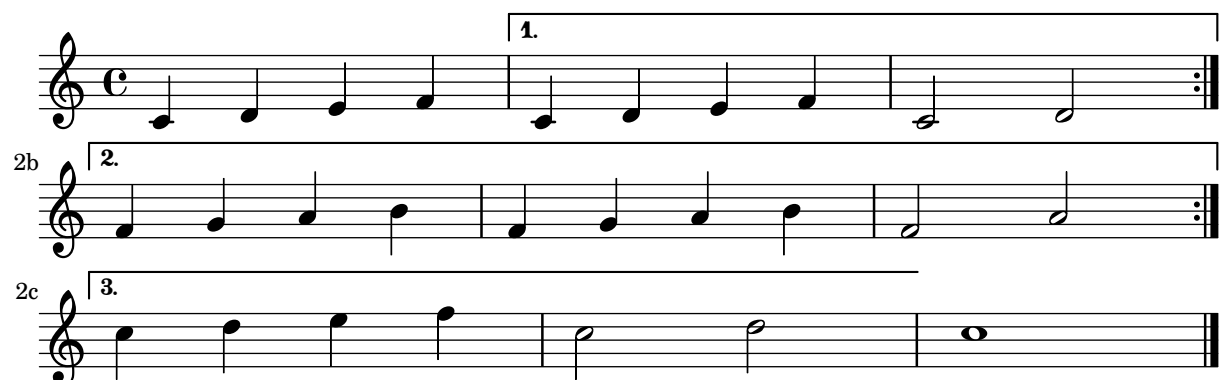
default



Three staves of music in treble clef, common time (C). The first staff is labeled '1.' and contains a sequence of eighth notes: C4, D4, E4, F4, G4, A4, B4, C5, followed by a repeat sign. The second staff is labeled '2.' and contains a sequence of eighth notes: C4, D4, E4, F4, G4, A4, B4, C5, followed by a repeat sign. The third staff is labeled '3.' and contains a sequence of eighth notes: C4, D4, E4, F4, G4, A4, B4, C5, followed by a repeat sign. The text "'numbers" is printed below the third staff.



Three staves of music in treble clef, common time (C). The first staff is labeled '1.' and contains a sequence of eighth notes: C4, D4, E4, F4, G4, A4, B4, C5, followed by a repeat sign. The second staff is labeled '2.' and contains a sequence of eighth notes: C4, D4, E4, F4, G4, A4, B4, C5, followed by a repeat sign. The third staff is labeled '3.' and contains a sequence of eighth notes: C4, D4, E4, F4, G4, A4, B4, C5, followed by a repeat sign. The text "'numbers-with-letters" is printed below the third staff.



Three staves of music in treble clef, common time (C). The first staff is labeled '1.' and contains a sequence of eighth notes: C4, D4, E4, F4, G4, A4, B4, C5, followed by a repeat sign. The second staff is labeled '2b' and contains a sequence of eighth notes: C4, D4, E4, F4, G4, A4, B4, C5, followed by a repeat sign. The third staff is labeled '2c' and contains a sequence of eighth notes: C4, D4, E4, F4, G4, A4, B4, C5, followed by a repeat sign.

## Analysis brackets above the staff

Simple horizontal analysis brackets are added below the staff by default. The following example shows a way to place them above the staff instead.

```
\layout {
  \context {
    \Voice
    \consists "Horizontal_bracket_engraver"
  }
}

\relative c'' {
  \once \override HorizontalBracket.direction = #UP
  c2\startGroup
  d2\stopGroup
}
```



## Analysis brackets with labels

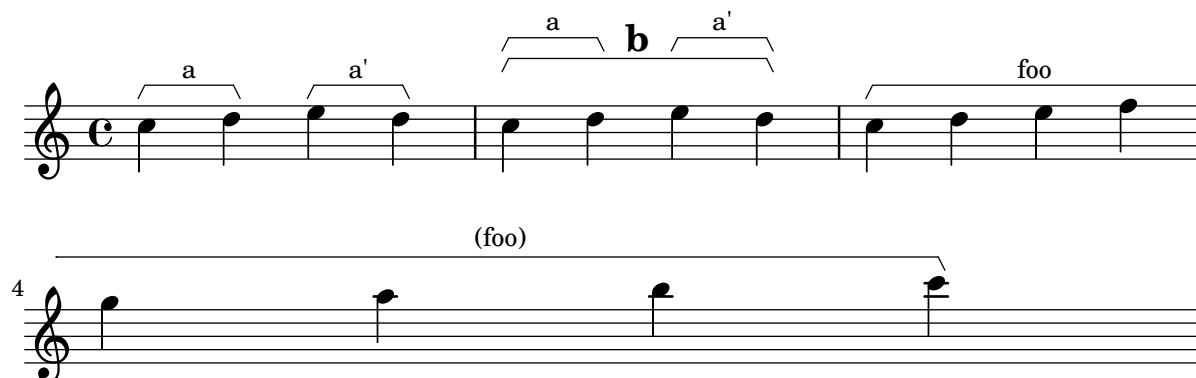
Text markup may be added to analysis brackets through the `text` property of the `HorizontalBracketText` grob. Adding different texts to brackets beginning at the same time requires the `\tweak` command.

Bracket text will be parenthesized after a line break.

```
\paper { tagline = ##f }

\layout {
  \context {
    \Voice
    \consists "Horizontal_bracket_engraver"
    \override HorizontalBracket.direction = #UP
  }
}

{
  \once\override HorizontalBracketText.text = "a"
  c''\startGroup d''\stopGroup
  \once\override HorizontalBracketText.text = "a'"
  e''\startGroup d''\stopGroup |
  c''-\tweak HorizontalBracketText.text
    \markup \bold \huge "b" \startGroup
    -\tweak HorizontalBracketText.text "a" \startGroup
    d''\stopGroup
    e''-\tweak HorizontalBracketText.text "a'" \startGroup
    d''\stopGroup\stopGroup |
  c''-\tweak HorizontalBracketText.text foo \startGroup
    d'' e'' f'' | \break
    g'' a'' b'' c'''\stopGroup
}
```

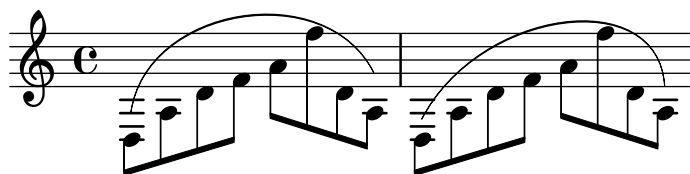


## Asymmetric slurs

Slurs can be made asymmetric to match an asymmetric pattern of notes better.

```
slurNotes = { d,8( a' d f a f' d, a) }
```

```
\relative c' {
  \stemDown
  \slurUp
  \slurNotes
  \once \override Slur.eccentricity = #3.0
  \slurNotes
}
```



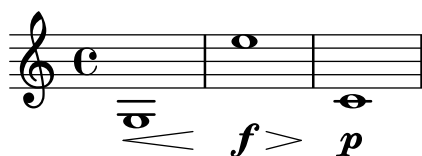
## Breaking vertical alignment of dynamics and textscripts

By default, LilyPond uses DynamicLineSpanner grobs to vertically align successive dynamic objects like hairpins and dynamic text. However, this is not always wanted. By inserting `\breakDynamicSpan`, which ends the alignment spanner prematurely, this vertical alignment can be avoided.

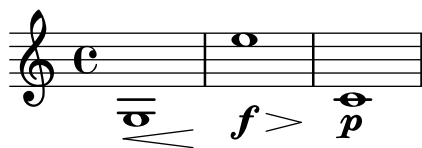
```
{ g1\< |
  e''\f\> |
  c'\p }
```

```
{ g1\< |
  e''\breakDynamicSpan\f\> |
  c'\p }
```

```
\paper { tagline = ##f }
```







## Caesura ("railtracks") with fermata

A caesura is sometimes denoted by a double „railtracks“ breath mark with a fermata sign positioned above. This snippet shows an optically pleasing combination of railtracks and fermata.

```
\relative c' ' {
  c2.
  % construct the symbol
  \override BreathingSign.text = \markup {
    \override #'(direction . 1)
    \override #'(baseline-skip . 1.8)
    \dir-column {
      \translate #'(0.155 . 0)
      \center-align \musicglyph "scripts.caesura.curved"
      \center-align \musicglyph "scripts.ufermata"
    }
  }
  \breathe c4
  % set the breath mark back to normal
  \revert BreathingSign.text
  c2. \breathe c4
  \bar "|."
}
```

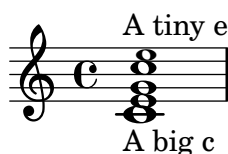


## Changing a single note's size in a chord

Individual note heads in a chord can be modified with the `\tweak` command inside a chord, by altering the `font-size` property.

Inside the chord (within the brackets `< >`), before the note to be altered, place the `\tweak` command, followed by `font-size` and define the proper size like `#-2` (a tiny note head).

```
\relative c' {
  <\tweak font-size #+2 c e g c
  \tweak font-size #-2 e>1
  ~\markup { A tiny e }_~\markup { A big c }
}
```



## Changing beam thickness and spacing

To make beams thicker or thinner alter the `Beam.beam-thickness` property. To adjust the spacing between beams alter the `Beam.length-fraction` property.

```

\relative f' {
  \time 1/8
  \override Beam.beam-thickness = #0.4
  \override Beam.length-fraction = #0.8
  c32 c c c
  \revert Beam.beam-thickness % 0.48 is default thickness
  \revert Beam.length-fraction % 1.0 is default spacing
  c32 c c c
  \override Beam.beam-thickness = #0.6
  \override Beam.length-fraction = #1.3
  c32 c c c
}

```



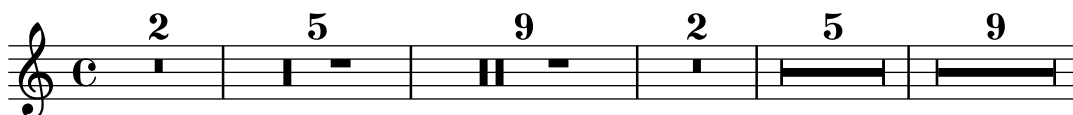
## Die Erscheinung von Pausentakten ändern

Wenn zehn oder weniger Pausentakte vorkommen, wird eine Reihe von Longa- und Brevispausen (auch Kirchenpausen genannt) gesetzt, bei mehr Takten wird eine Line mit der Taktanzahl ausgegeben. Der vorgegebene Wert von zehn kann geändert werden, indem man die `expand-limit`-Eigenschaft setzt:

```

\relative c' {
  \compressMMRests {
    R1*2 | R1*5 | R1*9
    \override MultiMeasureRest.expand-limit = 3
    R1*2 | R1*5 | R1*9
  }
}

```



## Changing properties for individual grobs

The `\applyOutput` command allows the tuning of any layout object, in any context. It requires a Scheme function with three arguments.

```

#(define (mc-squared grob grob-origin context)
  (let ((sp (ly:grob-property grob 'staff-position)))
    (ly:grob-set-property!
      grob 'stencil
      (grob-interpret-markup grob
        #{ \markup \lower #0.5

#(case sp
  ((-5) "m")
  ((-3) "c ")
  ((-2) #{ \markup \teeny \bold 2 #})
  (else "bla")) #}))))

```

```

\relative c' {

```

```

<d f g b>2
\applyOutput Voice.NoteHead #mc-squared
<d f g b>2
}

```



## Text und Strecker-Stile für Dynamik-Texte ändern

Der Text, der für Crescendo und Decrescendo gesetzt wird, kann geändert werden, indem man die Eigenschaften `crescendoText` und `decrescendoText` verändert. Der Stil des Streckers kann auch geändert werden, indem die `'style'`-Eigenschaft des `DynamicTextSpanner` beeinflusst wird. Der Standardwert ist `'hairpin'`, andere Möglichkeiten sind `'line'`, `'dashed-line'` und `'dotted-line'`.

```

\relative c' {
  \set crescendoText = \markup { \italic { cresc. poco } }
  \set crescendoSpanner = #'text
  \override DynamicTextSpanner.style = #'dotted-line
  a2\< a
  a2 a
  a2 a
  a2 a\mf
}

```



## Changing the default text font family

The default font families for text can be overridden.

```

%{
You may have to install additional fonts.

```

Red Hat Fedora

```

dejavu-fonts-all

```

Debian GNU/Linux, Ubuntu

```

fonts-dejavu-core
fonts-dejavu-extra
%}

```

```

\paper {
  %{
    run
      lilypond -dshow-available-fonts
    to show all fonts available in the process log.
  %}
}

```

```

property-defaults.fonts.serif = "DejaVu Serif"
property-defaults.fonts.sans = "DejaVu Sans"
property-defaults.fonts.typewriter = "DejaVu Sans Mono"
}

{
g'''4^\markup {
  DejaVu Serif: \bold bold
                \italic italic
                \italic \bold { bold italic }
}
g4_\markup {
  \override #'(font-family . sans) {
    DejaVu Sans: \bold bold
                  \italic italic
                  \italic \bold { bold italic }
  }
}
g''2^\markup {
  \override #'(font-family . typewriter) {
    DejaVu Sans Mono: \bold bold
                      \italic italic
                      \italic \bold { bold italic }
  }
}
}
}

```



## Changing the staff size

Though the simplest way to resize staves is to use `#{set-global-staff-size xx}`, an individual staff's size can be changed by scaling the properties `'staff-space` and `fontSize`.

```

<<
\new Staff {
  \relative c'' {
    \dynamicDown
    c8\ff c c c c c c c c
  }
}
\new Staff \with {
  fontSize = #-3
  \override StaffSymbol.staff-space = #{magstep -3}
} {
  \clef bass
  c8 c c c c\f c c c
}

```

&gt;&gt;



## Das Tempo ohne Metronom-Angabe verändern

Um das Tempo für die MIDI-Ausgabe zu ändern, ohne eine Tempoangabe in den Noten auszugeben, kann die Metronombezeichnung unsichtbar gemacht werden:

```
\score {
  \new Staff \relative c' {
    \tempo 4 = 160
    c4 e g b
    c4 b d c
    \set Score.tempoHideNote = ##t
    \tempo 4 = 96
    d,4 fis a cis
    d4 cis e d
  }
  \layout { }
  \midi { }
}
```



## Changing the text for sustain markings

`Staff.pedalSustainStrings` can be used to set the text used for pedal down and up. Note that the only valid strings are those found in the list of pedal glyphs - the values used this snippet constitute an exhaustive list.

```
sustainNotes = { c4\sustainOn d e\sustainOff\sustainOn f\sustainOff }
```

```
\relative c' {
  \sustainNotes
  \set Staff.pedalSustainStrings = #'("P" "P-" "-")
  \sustainNotes
  \set Staff.pedalSustainStrings = #'("d" "de" "e")
  \sustainNotes
  \set Staff.pedalSustainStrings = #'("M" "M-" "-")
  \sustainNotes
  \set Staff.pedalSustainStrings = #'("Ped" "*Ped" "*")
  \sustainNotes
}
```



## Controlling spanner visibility after a line break

The visibility of spanners which end on the first note following a line break is controlled by the after-line-breaking callback `ly:spanner::kill-zero-spanned-time`.

For objects such as glissandos and hairpins, the default behaviour is to hide the spanner after a break; disabling the callback will allow the left-broken span to be shown.

Conversely, spanners which are usually visible, such as text spans, can be hidden by enabling the callback.

```
\paper {
  ragged-right = ##t
  tagline = ##f
}

\relative c'' {
  \override Hairpin.to-barline = ##f
  \override Glissando.breakable = ##t
  % show hairpin
  \override Hairpin.after-line-breaking = ##t
  % hide text span
  \override TextSpanner.after-line-breaking =
    #ly:spanner::kill-zero-spanned-time
  e2\<\startTextSpan
  % show glissando
  \override Glissando.after-line-breaking = ##t
  f2\glissando
  \break
  f,1\!\stopTextSpan
}
```



## Die vertikale Anordnung von Beschriftungen kontrollieren

Die vertikale Anordnung von Beschriftungen wird mit der 'script-priority-Eigenschaft kontrolliert. Um so kleiner die Zahl, umso näher wird die Beschriftung in Bezug auf die Note gesetzt. In diesem Beispiel hat das TextScript-Objekt (das Kreuz) zuerst die niedrigste Priorität, wird also auch am niedrigsten in dem ersten Beispiel gesetzt. Im zweiten Fall hat der Praller (das Script) die niedrigste Priorität, darum wird er am nächsten zum System gesetzt. Wenn zwei Objekte die gleiche Priorität haben, wird ihre Reihenfolge anhand ihres Auftretens in der Quelldatei entschieden.

```
\relative c' {
```

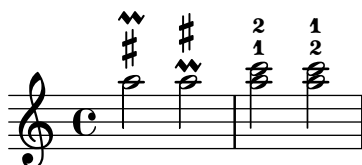
```

\once \override TextScript.script-priority = -100
a2^\prall^\markup { \sharp }

\once \override Script.script-priority = -100
a2^\prall^\markup { \sharp }

\set fingeringOrientations = #'(up)
<c-2 a-1>2
<a-1 c\tweak script-priority -100 -2>2
}

```



## Controlling tuplet bracket visibility

The default behavior of tuplet-bracket visibility is to print a bracket unless there is a beam of the same length as the tuplet.

To control the visibility of tuplet brackets, set the property `bracket-visibility` to either `#t` (always print a bracket), `if-no-beam` (only print a bracket if there is no beam) or `#f` (never print a bracket). The latter is in fact equivalent to omitting the `TupletBracket` object altogether from the printed output.

```

music = \relative c' {
  \tuplet 3/2 { c16[ d e ] f8 }
  \tuplet 3/2 { c8 d e }
  \tuplet 3/2 { c4 d e }
}

\new Voice {
  \relative c' {
    \override Score.TextMark.non-musical = ##f
    \textMark "default" \music
    \override TupletBracket.bracket-visibility = #'if-no-beam
    \textMark \markup \typewriter "'if-no-beam" \music
    \override TupletBracket.bracket-visibility = ##t
    \textMark \markup \typewriter "#t" \music
    \override TupletBracket.bracket-visibility = ##f
    \textMark \markup \typewriter "#f" \music
    \omit TupletBracket
    \textMark \markup \typewriter "omit" \music
  }
}

\paper { tagline = ##f }

```





## Einen Doppelschlag mit Vorhalt erstellen

Einen Doppelschlag mit Vorhalt zu erstellen, wobei die untere Note das Vorzeichen benutzt, erfordert einige Einstellungsänderungen. Die `outside-staff-priority`-Eigenschaft muss auf falsch (`#f`) gesetzt werden, weil sie sonst über die Eigenschaft `avoid-slur property` dominieren würde. Der Wert von `halign` wird benutzt, um den Doppelschlag horizontal zu positionieren.

```
\relative c' ' {
  \after 2*2/3 \turn c2( d4) r |
  \after 4 \turn c4.( d8)
  \after 4
  {
    \once \set suggestAccidentals = ##t
    \once \override AccidentalSuggestion.outside-staff-priority = ##f
    \once \override AccidentalSuggestion.avoid-slur = #'inside
    \once \override AccidentalSuggestion.font-size = -3
    \once \override AccidentalSuggestion.script-priority = -1
    \once \hideNotes
    cis8\turn \noBeam
  }
  d4.( e8)
}
```



## Creating custom key signatures

LilyPond supports custom key signatures. In this example, print for D minor with an extended range of printed flats.

```
\new Staff \with {
  \override StaffSymbol.line-count = #8
  \override KeySignature.flat-positions = #'((-7 . 6))
  \override KeyCancellation.flat-positions = #'((-7 . 6))
  % presumably sharps are also printed in both octaves
  \override KeySignature.sharp-positions = #'((-6 . 7))
  \override KeyCancellation.sharp-positions = #'((-6 . 7))

  \override Clef.stencil = #
  (lambda (grob)(grob-interpret-markup grob
    #{ \markup\combine
      \musicglyph "clefs.C"
      \translate #'(-3 . -2)
      \musicglyph "clefs.F"
    #}))
  clefPosition = #3
  middleCPosition = #3
}
```



```

    middleCClefPosition = #3
}

{
  \key d\minor
  f bes, f bes,
}

```



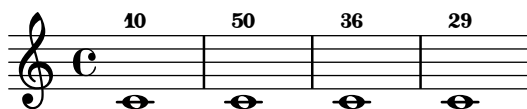
## Creating double-digit fingerings

Creating fingerings larger than 5 is possible.

```

\relative c' {
  c1-10
  c1-50
  c1-36
  c1-29
}

```



## Creating text spanners

The `\startTextSpan` and `\stopTextSpan` commands allow the creation of text spanners as easily as pedal indications or octavations. Override some properties of the `TextSpanner` object to modify its output.

```

\paper { ragged-right = ##f }

\relative c' {
  \override TextSpanner.bound-details.left.text = #"bla"
  \override TextSpanner.bound-details.right.text = #"blu"
  a4 \startTextSpan
  b4 c
  a4 \stopTextSpan

  \override TextSpanner.style = #'line
  \once \override TextSpanner.bound-details.left.stencil-align-dir-y = #CENTER
  a4 \startTextSpan
  b4 c
  a4 \stopTextSpan

  \override TextSpanner.style = #'dashed-line
  \override TextSpanner.bound-details.left.text =
    \markup { \draw-line #'(0 . 1) }
  \override TextSpanner.bound-details.right.text =
    \markup { \draw-line #'(0 . -2) }
  \once \override TextSpanner.bound-details.right.padding = #-2
}

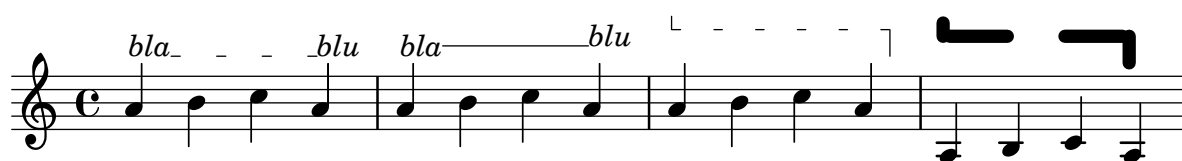
```

```

a4 \startTextSpan
b4 c
a4 \stopTextSpan

\set Staff.middleCPosition = #-13
\override TextSpanner.dash-period = #10
\override TextSpanner.dash-fraction = #0.5
\override TextSpanner.thickness = #10
a4 \startTextSpan
b4 c
a4 \stopTextSpan
}

```



## Cross-staff chords - beaming problems workaround

Sometimes it is better to use stems from the upper staff for creating cross-staff chords, because no problems with automatic beam collision avoidance then arise. If the stems from the lower staff were used in the following example, it would be necessary to change the automatic beam collision avoidance settings so that it doesn't detect collisions between staves using `\override Staff.Beam.collision-voice-only = ##t`

```

\new PianoStaff <<
  \new Staff = up
    \relative c' {
      <<
        { r4
          \override Stem.cross-staff = ##t
          \override Stem.length = #19 % this is in half-spaces,
            % so it makes stems 9.5 staffspaces long
          \override Stem.Y-offset = #-6 % stems are normally lengthened
            % upwards, so here we must lower the stem by the amount
            % equal to the lengthening - in this case (19 - 7) / 2
            % (7 is default stem length)
          e e e }
        { s4
          \change Staff = "bottom"
          \override NoteColumn.ignore-collision = ##t
          c, c c
        }
      >>
    }
  >>
}

\new Staff = bottom
  \relative c' {
    \clef bass
    \voiceOne
    g8 a g a g a g a
  }
>>

```



## Hälse über beide Systeme

Dieses Schnipsel zeigt den Einsatz von `Span_stem_engraver` und `\crossStaff`, um Hälse über Systeme hinweg automatisch zu verbinden. Die Länge des Halses muss definiert werden, da der variable Abstand zwischen Notenköpfen und Notensystemen automatisch errechnet wird.

```
\layout {
  \context {
    \PianoStaff
    \consists "Span_stem_engraver"
  }
}

\new PianoStaff <<
  \new Staff {
    <b d'>4 r d'16\> e'8. g8 r\! |
    e'8 f' g'4
    \voiceTwo \autoBeamOff
    % Down to lower staff
    \crossStaff { e'8 e'8 } e'4 |
  }

  \new Staff {
    \clef bass
    \voiceOne \autoBeamOff
    % Up to upper staff
    \crossStaff { <e g>4 e, g16 a8. c8 } d |
    \autoBeamOn g8 f g4 \voiceTwo g8 g g4 |
  }
>>
```



## Custodes

Custodes may be engraved in various styles.

```
\layout { ragged-right = ##t }

\new Staff \with { \consists "Custos_engraver" } \relative c' {
  \override Staff.Custos.neutral-position = #4
```

```

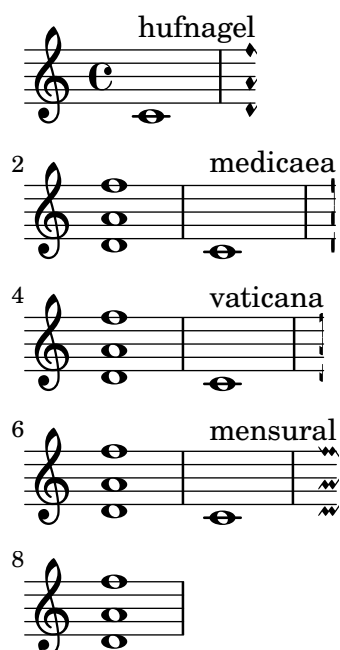
\override Staff.Custos.style = #'hufnagel
c1~"hufnagel" \break
<d a' f'>1

\override Staff.Custos.style = #'medicaea
c1~"medicaea" \break
<d a' f'>1

\override Staff.Custos.style = #'vaticana
c1~"vaticana" \break
<d a' f'>1

\override Staff.Custos.style = #'mensural
c1~"mensural" \break
<d a' f'>1
}

```



## Bunddiagramme anpassen

Eigenschaften von Bunddiagrammen können in 'fret-diagram-details verändert werden. Einstellungen mit dem `\override`-Befehl werden dem `FretBoards.FretBoard`-Objekt zugewiesen. Genauso wie `Voice` ist auch `FretBoards` ein Kontext der niedrigsten Ebene, weshalb der Kontext auch in dem Befehl weggelassen werden kann.

```

\include "predefined-guitar-fretboards.ly"

\storePredefinedDiagram #default-fret-table \chordmode { c' }
                        #guitar-tuning
                        "x;1-1-(;3-2;3-3;3-4;1-1-);"

% shorthand
oo = #(define-music-function
      (grob-path value)
      (list? scheme?)

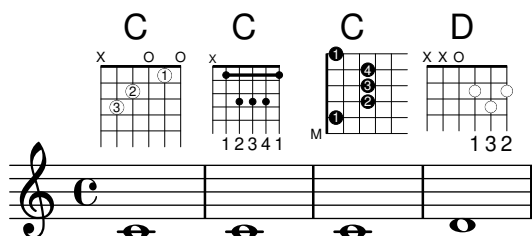
```

```

#{ \once \override $grob-path = #value #})

<<
\new ChordNames {
  \chordmode { c1 | c | c | d }
}
\new FretBoards {
  % Set global properties of fret diagram
  \override FretBoards.FretBoard.size = 1.2
  \override FretBoard.fret-diagram-details.finger-code = #'in-dot
  \override FretBoard.fret-diagram-details.dot-color = #'white
  \chordmode {
    c
    \oo FretBoard.size #1.0
    \oo FretBoard.fret-diagram-details.barre-type #'straight
    \oo FretBoard.fret-diagram-details.dot-color #'black
    \oo FretBoard.fret-diagram-details.finger-code #'below-string
    c'
    \oo FretBoard.fret-diagram-details.barre-type #'none
    \oo FretBoard.fret-diagram-details.number-type #'arabic
    \oo FretBoard.fret-diagram-details.orientation #'landscape
    \oo FretBoard.fret-diagram-details.mute-string "M"
    \oo FretBoard.fret-diagram-details.label-dir #LEFT
    \oo FretBoard.fret-diagram-details.dot-color #'black
    c'
    \oo FretBoard.fret-diagram-details.finger-code #'below-string
    \oo FretBoard.fret-diagram-details.dot-radius #0.35
    \oo FretBoard.fret-diagram-details.dot-position #0.5
    \oo FretBoard.fret-diagram-details.fret-count #3
    d
  }
}
\new Voice {
  c'1 | c' | c' | d'
}
>>

```



## Anpassung von Beschriftungs-Bunddiagrammen

Bunddiagramme können mit der Eigenschaft 'fret-diagram-details' angepasst werden. Bunddiagramme, die als Textbeschriftung eingefügt werden, können Veränderungen im Voice.TextScript-Objekt oder direkt in der Beschriftung vorgenommen werden.

```

<<
\chords { c1 | c | c | d }

```

```

\new Voice = "mel" {
  \textLengthOn
  % Set global properties of fret diagram
  \override TextScript.size = 1.2
  \override TextScript.fret-diagram-details.finger-code = #'in-dot
  \override TextScript.fret-diagram-details.dot-color = #'white

  %% C major for guitar, no barre, using defaults
  % terse style
  c'1^\markup { \fret-diagram-terse "x;3-3;2-2;o;1-1;o;" }

  %% C major for guitar, barred on third fret
  % verbose style
  % size 1.0
  % roman fret label, finger labels below string, straight barre
  c'1^\markup {
    % standard size
    \override #'(size . 1.0) {
      \override #'(fret-diagram-details . (
        (number-type . roman-lower)
        (finger-code . in-dot)
        (barre-type . straight))) {
        \fret-diagram-verbose #'((mute 6)
          (place-fret 5 3 1)
          (place-fret 4 5 2)
          (place-fret 3 5 3)
          (place-fret 2 5 4)
          (place-fret 1 3 1)
          (barre 5 1 3))
        }
      }
    }
  }

  %% C major for guitar, barred on third fret
  % verbose style
  % landscape orientation, arabic numbers, M for mute string
  % no barre, fret label down or left, small mute label font
  c'1^\markup {
    \override #'(fret-diagram-details . (
      (finger-code . below-string)
      (number-type . arabic)
      (label-dir . -1)
      (mute-string . "M")
      (orientation . landscape)
      (barre-type . none)
      (xo-font-magnification . 0.4)
      (xo-padding . 0.3))) {
      \fret-diagram-verbose #'((mute 6)
        (place-fret 5 3 1)
        (place-fret 4 5 2)
        (place-fret 3 5 3)
        (place-fret 2 5 4)

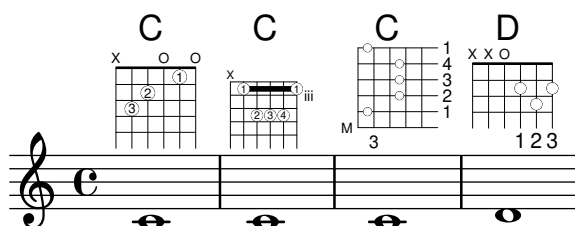
```

```

        (place-fret 1 3 1)
        (barre 5 1 3))
    }
}

%% simple D chord
% terse style
% larger dots, centered dots, fewer frets
% label below string
d'1^\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)
    (dot-position . 0.5)
    (fret-count . 3))) {
    \fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
  }
}
}
}
>>

```



## Klammer anzeigen, wenn nur ein System gesetzt wird

Wenn nur ein System einer Systemgruppe vom Typ `ChoirStaff` oder `StaffGroup` angezeigt wird, wird die Klammer zu Beginn normalerweise nicht gesetzt. Das kann verändert werden, indem man die entsprechende Eigenschaft verändert.

Bei Systemen wie `PianoStaff` und `GrandStaff`, die mit einer geschweiften Klammer beginnen, muss eine andere Eigenschaft verändert werden, wie das zweite Beispiel zeigt.

```

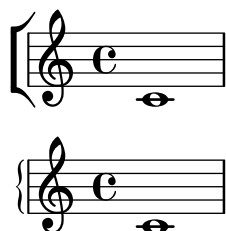
\score {
  \new StaffGroup <<
    % Must be lower than the actual number of staff lines
    \override StaffGroup.SystemStartBracket.collapse-height = 4
    \override Score.SystemStartBar.collapse-height = 4
    \new Staff {
      c'1
    }
  >>
}

\score {
  \new PianoStaff <<
    \override PianoStaff.SystemStartBrace.collapse-height = 4
    \override Score.SystemStartBar.collapse-height = 4
    \new Staff {
      c'1
    }
  >>
}

```

```
>>
}

\paper { tagline = ##f }
```



## Displaying grob ancestry

When working with grob callbacks, it can be helpful to understand a grob's ancestry. Most grobs have parents which influence the positioning of the grob. X- and Y-parents influence the horizontal and vertical positions for the grob, respectively. Additionally, each parent may have parents of its own.

Unfortunately, there are several aspects of a grob's ancestry that can lead to confusion:

- The types of parents a grob has may depend on context.
- For some grobs, the X- and Y-parents are the same.
- A particular *ancestor* may be related to a grob in multiple ways.
- The concept of *generations* is misleading.

For example, the System grob can be both parent (on the Y-side) and grandparent (twice on the X-side) to a VerticalAlignment grob.

This macro prints (to the console) a textual representation of a grob's ancestry.

When called this way:

```
{ \once \override NoteHead.before-line-breaking = #display-ancestry c }
```

The following output is generated:

```
NoteHead
X,Y: NoteColumn
  X: PaperColumn
    X,Y: System
  Y: VerticalAxisGroup
    X: NonMusicalPaperColumn
      X,Y: System
    Y: VerticalAlignment
      X: NonMusicalPaperColumn
        X,Y: System
      Y: System

%% http://lsr.di.unimi.it/LSR/Item?id=622

#(define (get-ancestry grob)
  (if (not (null? (ly:grob-parent grob X)))
      (list (grob::name grob)
            (get-ancestry (ly:grob-parent grob X))
            (get-ancestry (ly:grob-parent grob Y)))
      (grob::name grob)))
```



```

#(define (format-ancestry lst padding)
  (string-append
    (symbol->string (car lst))
    "\n"
    (let ((X-ancestry
      (if (list? (cadr lst))
        (format-ancestry (cadr lst) (+ padding 3))
        (symbol->string (cadr lst))))
      (Y-ancestry
        (if (list? (caddr lst))
          (format-ancestry (caddr lst) (+ padding 3))
          (symbol->string (caddr lst))))))
    (if (equal? X-ancestry Y-ancestry)
      (string-append
        (format #f "~&")
        (make-string padding #\space)
        "X,Y: "
        (if (list? (cadr lst))
          (format-ancestry (cadr lst) (+ padding 5))
          (symbol->string (cadr lst))))
      (string-append
        (format #f "~&")
        (make-string padding #\space)
        "X: " X-ancestry
        "\n"
        (make-string padding #\space)
        "Y: " Y-ancestry
        (format #f "~&"))))
    (format #f "~&")))

#(define (display-ancestry grob)
  (format (current-error-port)
    "~3&~a~2%~a~&"
    (make-string 36 #\-)
    (if (ly:grob? grob)
      (format-ancestry (get-ancestry grob) 0)
      (format #f "~a is not a grob" grob))))

\relative c' {
  \once \override NoteHead.before-line-breaking = #display-ancestry
  f4
  \once \override Accidental.before-line-breaking = #display-ancestry
  \once \override Arpeggio.before-line-breaking = #display-ancestry
  <f as c>4\arpeggio
}

```



## Dotted harmonics

Artificial harmonics using `\harmonic` do not show dots. To override this behavior, set the context property `harmonicDots`.

```
\relative c' {} {
  \time 3/4
  \key f \major
  \set harmonicDots = ##t
  <bes f'\harmonic>2. ~
  <bes f'\harmonic>4. <a e'\harmonic>8( <gis dis'\harmonic> <g d'\harmonic>)
  <fis cis'\harmonic>2.
  <bes f'\harmonic>2.
}
```



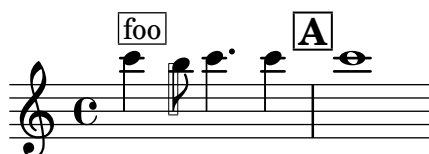
## Drawing boxes around grobs

The `print`-function can be overridden to draw a box around an arbitrary grob.

```
\relative c' {} {
  \override TextScript.stencil =
    #(make-stencil-boxer 0.1 0.3 ly:text-interface::print)
  c'4^"foo"

  \override Stem.stencil =
    #(make-stencil-boxer 0.05 0.25 ly:stem::print)
  \override Score.RehearsalMark.stencil =
    #(make-stencil-boxer 0.15 0.3 ly:text-interface::print)
  b8

  \revert Stem.stencil
  \revert Flag.stencil
  c4. c4
  \mark \default
  c1
}
```



## Drawing circles around various objects

The `\circle` markup command draws circles around various objects, for example fingering indications. For other objects, specific tweaks may be required: this example demonstrates two strategies for rehearsal marks and measure numbers.

```
\relative c' {} {
  c1
  \set Score.rehearsalMarkFormatter =
```

```

#(lambda (mark context)
  (make-circle-markup (format-mark-numbers mark context)))
\mark \default

c2 d^\markup {
  \override #'(thickness . 3) {
    \circle \finger 2
  }
}
\override Score.BarNumber.break-visibility = #all-visible
\override Score.BarNumber.stencil =
  #(make-stencil-circler 0.1 0.25 ly:text-interface::print)
}

```



## Eigene Dynamiktextspanner nachgestellt

Die Nachstellung funktioniert für eigene Crescendo-Textstrecker. Die Strecker sollten an der ersten Note eines Taktes beginnen. Man muss `-\mycresc` benutzen, sonst wird der Beginn des Streckers der nächsten Note zugewiesen.

```

% Two functions for (de)crescendo spanners where you can explicitly
% give the spanner text.

```

```

mycresc =
#(define-music-function (mymarkup) (markup?)
  (make-music 'CrescendoEvent
    'span-direction START
    'span-type 'text
    'span-text mymarkup))

```

```

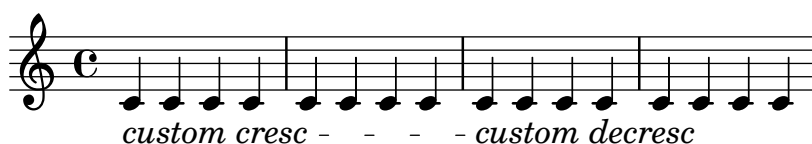
mydecreasc =
#(define-music-function (mymarkup) (markup?)
  (make-music 'DecrescendoEvent
    'span-direction START
    'span-type 'text
    'span-text mymarkup))

```

```

\relative c' {
  c4-\mycresc "custom cresc" c4 c4 c4 |
  c4 c4 c4 c4 |
  c4-\mydecreasc "custom decresc" c4 c4 c4 |
  c4 c4\! c4 c4
}

```



## Dynamiktextstrecke nachgestellt

Die `\cresc`, `\dim` und `\decrec` Strecke können undefiniert werden, um nachgestellt zu funktionieren und einen Textstrecke zu produzieren. Eigene Strecke können auch einfach definiert werden. Klammer- und Textcrescendi können einfach vermischt werden. `\<` und `\>` erstellen normalerweise Klammern, `\cresc` usw. dagegen normalerweise Textspanner.

*% Some sample text dynamic spanners, to be used as postfix operators*

```
crpoco =
#(make-music 'CrescendoEvent
    'span-direction START
    'span-type 'text
    'span-text "cresc. poco a poco")
```

```
\relative c' {
  c4\cresc d4 e4 f4 |
  g4 a4\! b4\crpoco c4 |
  c4 d4 e4 f4 |
  g4 a4\! b4\< c4 |
  g4\dim a4 b4\decrec c4\!
}
```

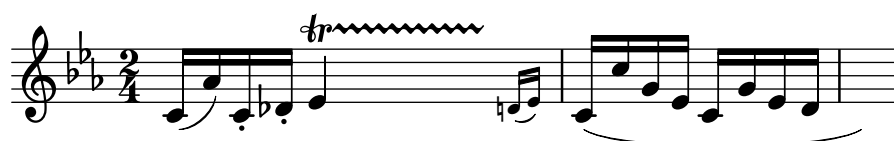


## Extending a TrillSpanner

For `TrillSpanner`, the `minimum-length` property becomes effective only if the `set-spacing-rods` procedure is called explicitly.

To do this, the `springs-and-rods` property should be set to `ly:spanner::set-spacing-rods`.

```
\relative c' {
  \key c\minor
  \time 2/4
  c16( as') c,-. des-.
  \once\override TrillSpanner.minimum-length = #15
  \once\override TrillSpanner.springs-and-rods = #ly:spanner::set-spacing-rods
  \afterGrace es4
  \startTrillSpan { d16[( \stopTrillSpan es)] }
  c( c' g es c g' es d
  \hideNotes
  c8)
}
```



## Extending glissandi across repeats

A glissando which extends into several `\alternative` blocks can be simulated by adding a hidden grace note with a glissando at the start of each `\alternative` block. The grace note

should be at the same pitch as the note which starts the initial glissando. This is implemented here with a music function which takes the pitch of the grace note as its argument.

Note that in polyphonic music the grace note must be matched with corresponding grace notes in all other voices.

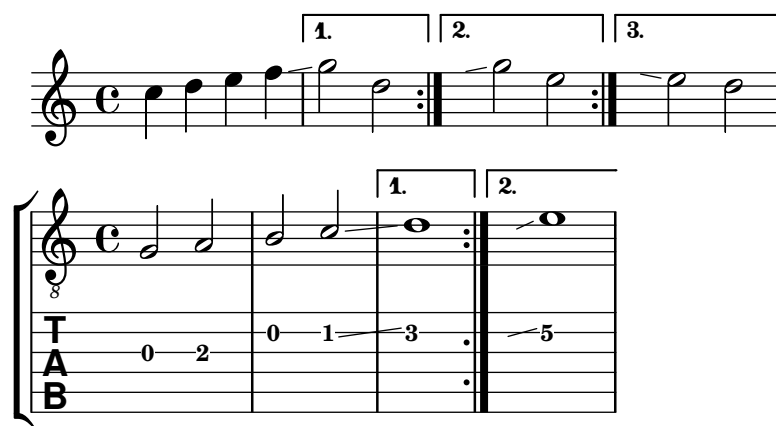
```
repeatGliss = #(define-music-function (grace)
  (ly:pitch?)
  #{
    % the next two lines ensure the glissando is long enough
    % to be visible
    \once \override Glissando.springs-and-rods
      = #ly:spanner::set-spacing-rods
    \once \override Glissando.minimum-length = 3.5
    \once \hideNotes
    \grace $grace \glissando
  #})

\score {
  \relative c' {
    \repeat volta 3 { c4 d e f\glissando }
    \alternative {
      { g2 d }
      { \repeatGliss f g2 e }
      { \repeatGliss f e2 d }
    }
  }
}

music = \relative c' {
  \voiceOne
  \repeat volta 2 {
    g a b c\glissando
  }
  \alternative {
    { d1 }
    { \repeatGliss c \once \omit StringNumber e1\2 }
  }
}

\score {
  \new StaffGroup <<
    \new Staff <<
      \new Voice { \clef "G_8" \music }
    >>
  \new TabStaff <<
    \new TabVoice { \clef "moderntab" \music }
  >>
}

\paper { tagline = ##f }
```



## Fine-tuning pedal brackets

The appearance of pedal brackets may be altered in different ways.

```
\paper { ragged-right = ##f }
```

```
\relative c' {
  c2\sostenutoOn c
  c2\sostenutoOff c
  \once \override Staff.PianoPedalBracket.shorten-pair = #'(-7 . -2)
  c2\sostenutoOn c
  c2\sostenutoOff c
  \once \override Staff.PianoPedalBracket.edge-height = #'(0 . 3)
  c2\sostenutoOn c
  c2\sostenutoOff c
}
```



## Flat Ties

The function takes the default Tie.stencil as an argument, calculating the result relying on the extents of this default.

Further tweaking is possible by overriding Tie.details.height-limit or with \shape. It's also possible to change the custom-definition on the fly.

```
%% http://lsr.di.unimi.it/LSR/Item?id=1031
```

```
#(define ((flared-tie coords) grob)

  (define (pair-to-list pair)
    (list (car pair) (cdr pair)))

  (define (normalize-coords goods x y dir)
    (map
      (lambda (coord)
        ;(coord-scale coord (cons x (* y dir)))
        (cons (* x (car coord)) (* y dir (cdr coord)))))
```

```

    goods))

(define (my-c-p-s points thick)
  (make-connected-path-stencil
    points
    thick
    1.0
    1.0
    #f
    #f))

;; outer let to trigger suicide
(let ((sten (ly:tie::print grob)))
  (if (grob::is-live? grob)
      (let* ((layout (ly:grob-layout grob))
              (line-thickness (ly:output-def-lookup layout 'line-thickness))
              (thickness (ly:grob-property grob 'thickness 0.1))
              (used-thick (* line-thickness thickness))
              (dir (ly:grob-property grob 'direction))
              (xex (ly:stencil-extent sten X))
              (yex (ly:stencil-extent sten Y))
              (lenx (interval-length xex))
              (leny (interval-length yex))
              (xtrans (car xex))
              (ytrans (if (> dir 0) (car yex) (cdr yex))))
        (uplist
          (map pair-to-list
            (normalize-coords coords lenx (* leny 2) dir))))

      (ly:stencil-translate
        (my-c-p-s uplist used-thick)
        (cons xtrans ytrans)))
  '()))

#(define flare-tie
  (flared-tie '((0 . 0)(0.1 . 0.2) (0.9 . 0.2) (1.0 . 0.0))))

\layout {
  \context {
    \Voice
    \override Tie.stencil = #flare-tie
  }
}

\paper {
  ragged-right = ##f
  tagline = ##f
}

\relative c' {
  a4~a
  \override Tie.height-limit = 4

```

```

a'4~a
a'4~a
<a,, c e a c e a c e>~ q

```

```

\break

```

```

a'4~a
\once \override Tie.details.height-limit = 14
a4~a

```

```

\break

```

```

a4~a
\once \override Tie.details.height-limit = 0.5
a4~a

```

```

\break

```

```

a4~a
\shape #'((0 . 0) (0 . 0.4) (0 . 0.4) (0 . 0)) Tie
a4~a

```

```

\break

```

```

a4~a
\once \override Tie.stencil =
  #(flared-tie '((0 . 0)(0.1 . 0.4) (0.9 . 0.4) (1.0 . 0.0)))
a4~a

```

```

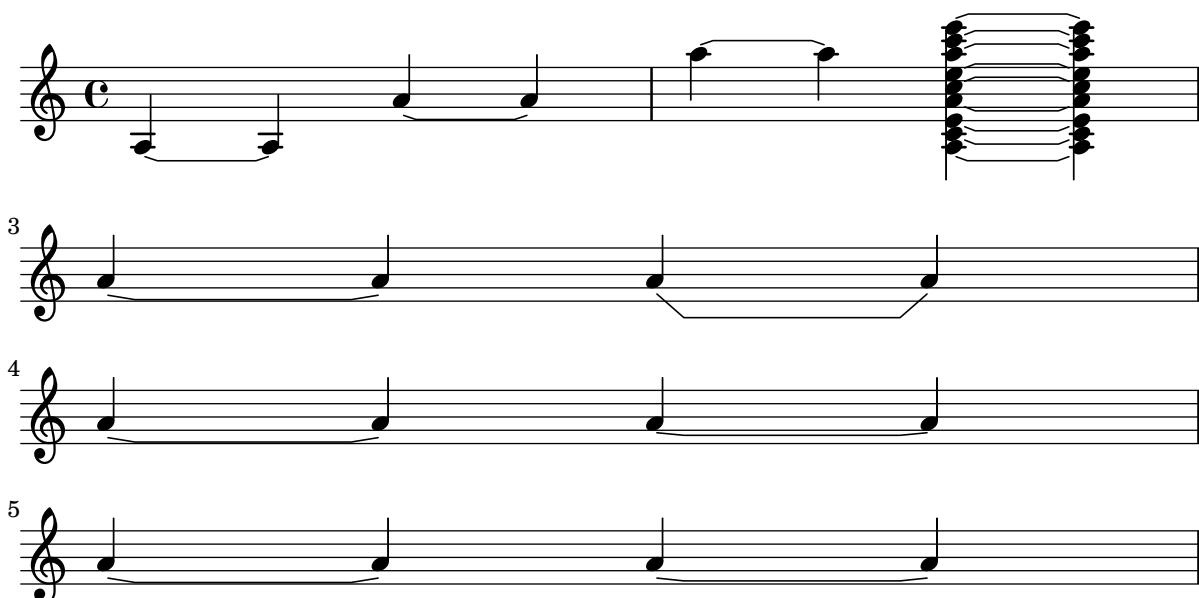
a4~a
\once \override Tie.stencil =
  #(flared-tie '((0 . 0)(0.06 . 0.1) (0.94 . 0.1) (1.0 . 0.0)))
a4~a

```

```

}

```







## Force a cancellation natural before accidentals

The following example shows how to force a natural sign before an accidental.

```
\relative c' {
  \key es \major
  bes c des
  \tweak Accidental.restore-first ##t
  eis
}
```



## Horizontale Verschiebung von Noten erzwingen

Wenn es zu Zusammenstößen kommt, kann mit folgender Lösung eine andere Position manuell eingestellt werden. Die Einheiten hier sind Notenlinienzwischenräume.

```
\relative c' <<
{
  <d g>2 <d g>
}
\\
{
  <b f'>2
  \once \override NoteColumn.force-hshift = 1.7
  <b f'>2
}
>>
```



## Fret diagrams explained and developed

This snippet shows many possibilities for obtaining and tweaking fret diagrams.

```
<<
\chords {
  a2 a
  \repeat unfold 3 {
    c c c d d
  }
}

\new Voice = "mel" {
  \textLengthOn
  % Set global properties of fret diagram
```

```

\override TextScript.size = #1.2
\override TextScript.fret-diagram-details.finger-code = #'below-string
\override TextScript.fret-diagram-details.dot-color = #'black

%% A chord for ukulele
a'2^\markup {
  \override #'(fret-diagram-details . (
    (string-count . 4)
    (dot-color . white)
    (finger-code . in-dot))) {
    \fret-diagram "4-2-2;3-1-1;2-o;1-o;"
  }
}

%% A chord for ukulele, with formatting defined in definition string
% 1.2 * size, 4 strings, 4 frets, fingerings below string
% dot radius .35 of fret spacing, dot position 0.55 of fret spacing
a'2^\markup {
  \override #'(fret-diagram-details . (
    (dot-color . white)
    (open-string . "o"))) {
    \fret-diagram "s:1.2;w:4;h:3;f:2;d:0.35;p:0.55;4-2-2;3-1-1;2-o;1-o;"
  }
}

%% These chords will be in normal orientation

%% C major for guitar, barred on third fret
% verbose style
% roman fret label, finger labels below string, straight barre
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . roman-lower)
      (finger-code . below-string)
      (barre-type . straight))) {
      \fret-diagram-verbose #'((mute 6)
        (place-fret 5 3 1)
        (place-fret 4 5 2)
        (place-fret 3 5 3)
        (place-fret 2 5 4)
        (place-fret 1 3 1)
        (barre 5 1 3))
    }
  }
}

%% C major for guitar, barred on third fret
%% Double barre used to test barre function
% verbose style
c'2^\markup {

```

```

% 110% of default size
\override #'(size . 1.1) {
  \override #'(fret-diagram-details . (
    (number-type . arabic)
    (dot-label-font-mag . 0.9)
    (finger-code . in-dot)
    (fret-label-font-mag . 0.6)
    (fret-label-vertical-offset . 0)
    (label-dir . -1)
    (mute-string . "M")
    (xo-font-magnification . 0.4)
    (xo-padding . 0.3))) {
    \fret-diagram-verbose #'((mute 6)
      (place-fret 5 3 1)
      (place-fret 4 5 2)
      (place-fret 3 5 3)
      (place-fret 2 5 4)
      (place-fret 1 3 1)
      (barre 4 2 5)
      (barre 5 1 3))
  }
}

%% C major for guitar, with capo on third fret
% verbose style
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . roman-upper)
      (dot-label-font-mag . 0.9)
      (finger-code . none)
      (fret-label-vertical-offset . 0.5)
      (xo-font-magnification . 0.4)
      (xo-padding . 0.3))) {
      \fret-diagram-verbose #'((mute 6)
        (capo 3)
        (open 5)
        (place-fret 4 5 1)
        (place-fret 3 5 2)
        (place-fret 2 5 3)
        (open 1))
      }
    }
  }

%% simple D chord
d'2^\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)

```

```

        (string-thickness-factor . 0.3)
        (dot-position . 0.5)
        (fret-count . 3))) {
      \fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
    }
  }

%% simple D chord, large top fret thickness
d'2^\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)
    (dot-position . 0.5)
    (top-fret-thickness . 7)
    (fret-count . 3))) {
    \fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
  }
}

% These chords will be in landscape orientation
\override TextScript.fret-diagram-details.orientation = #'landscape

%% C major for guitar, barred on third fret
% verbose style
% roman fret label, finger labels below string, straight barre
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . roman-lower)
      (finger-code . below-string)
      (barre-type . straight))) {
      \fret-diagram-verbose #'((mute 6)
        (place-fret 5 3 1)
        (place-fret 4 5 2)
        (place-fret 3 5 3)
        (place-fret 2 5 4)
        (place-fret 1 3 1)
        (barre 5 1 3))
    }
  }
}

%% C major for guitar, barred on third fret
%% Double barre used to test barre function
% verbose style
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . arabic)
      (dot-label-font-mag . 0.9)

```

```

        (finger-code . in-dot)
        (fret-label-font-mag . 0.6)
        (fret-label-vertical-offset . 0)
        (label-dir . -1)
        (mute-string . "M")
        (xo-font-magnification . 0.4)
        (xo-padding . 0.3))) {
  \fret-diagram-verbose #'((mute 6)
    (place-fret 5 3 1)
    (place-fret 4 5 2)
    (place-fret 3 5 3)
    (place-fret 2 5 4)
    (place-fret 1 3 1)
    (barre 4 2 5)
    (barre 5 1 3))
  }
}
}

%% C major for guitar, with capo on third fret
% verbose style
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . roman-upper)
      (dot-label-font-mag . 0.9)
      (finger-code . none)
      (fret-label-vertical-offset . 0.5)
      (xo-font-magnification . 0.4)
      (xo-padding . 0.3))) {
      \fret-diagram-verbose #'((mute 6)
        (capo 3)
        (open 5)
        (place-fret 4 5 1)
        (place-fret 3 5 2)
        (place-fret 2 5 3)
        (open 1))
      }
    }
  }
}

%% simple D chord
d'2^\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)
    (dot-position . 0.5)
    (fret-count . 3))) {
    \fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
  }
}

```

```

%% simple D chord, large top fret thickness
d'2^\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)
    (dot-position . 0.5)
    (top-fret-thickness . 7)
    (fret-count . 3))) {
    \fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
  }
}

% These chords will be in opposing-landscape orientation
\override TextScript.fret-diagram-details.orientation = #'opposing-landscape

%% C major for guitar, barred on third fret
% verbose style
% roman fret label, finger labels below string, straight barre
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . roman-lower)
      (finger-code . below-string)
      (barre-type . straight))) {
      \fret-diagram-verbose #'((mute 6)
        (place-fret 5 3 1)
        (place-fret 4 5 2)
        (place-fret 3 5 3)
        (place-fret 2 5 4)
        (place-fret 1 3 1)
        (barre 5 1 3))
    }
  }
}

%% C major for guitar, barred on third fret
%% Double barre used to test barre function
% verbose style
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . arabic)
      (dot-label-font-mag . 0.9)
      (finger-code . in-dot)
      (fret-label-font-mag . 0.6)
      (fret-label-vertical-offset . 0)
      (label-dir . -1)
      (mute-string . "M")
      (xo-font-magnification . 0.4)
    )
  }
}

```

```

        (xo-padding . 0.3))) {
    \fret-diagram-verbose #'((mute 6)
        (place-fret 5 3 1)
        (place-fret 4 5 2)
        (place-fret 3 5 3)
        (place-fret 2 5 4)
        (place-fret 1 3 1)
        (barre 4 2 5)
        (barre 5 1 3))
    }
}

%% C major for guitar, with capo on third fret
% verbose style
c'2^\markup {
  % 110% of default size
  \override #'(size . 1.1) {
    \override #'(fret-diagram-details . (
      (number-type . roman-upper)
      (dot-label-font-mag . 0.9)
      (finger-code . none)
      (fret-label-vertical-offset . 0.5)
      (xo-font-magnification . 0.4)
      (xo-padding . 0.3))) {
      \fret-diagram-verbose #'((mute 6)
        (capo 3)
        (open 5)
        (place-fret 4 5 1)
        (place-fret 3 5 2)
        (place-fret 2 5 3)
        (open 1))
    }
  }
}

%% simple D chord
d'2^\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)
    (dot-position . 0.5)
    (fret-count . 3))) {
    \fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
  }
}

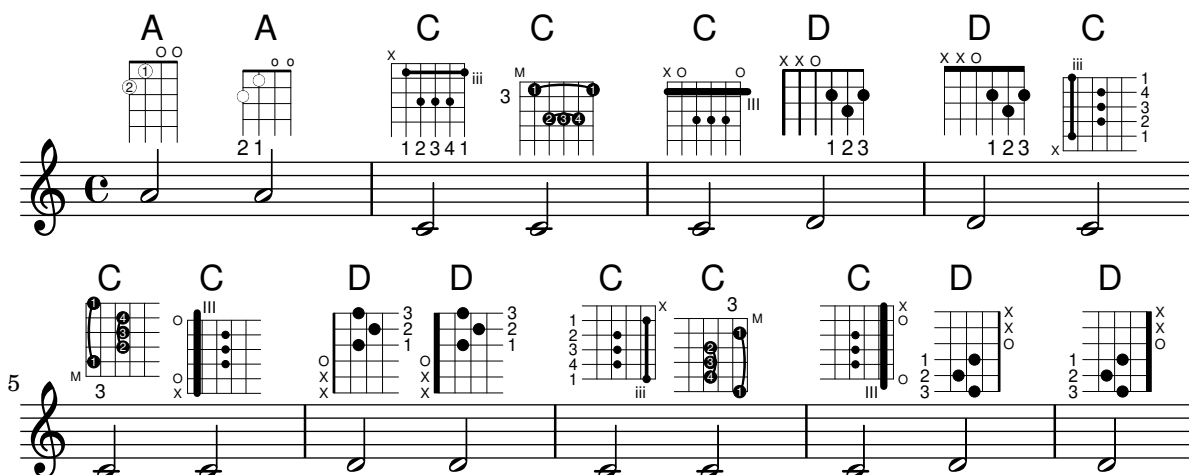
%% simple D chord, large top fret thickness
d'2^\markup {
  \override #'(fret-diagram-details . (
    (finger-code . below-string)
    (dot-radius . 0.35)

```

```

(dot-position . 0.5)
(top-fret-thickness . 7)
(fret-count . 3))) {
\ fret-diagram-terse "x;x;o;2-1;3-2;2-3;"
}
}
}
>>

```



## Generating custom flags

The stencil property of the Flag grob can be set to a custom scheme function to generate the glyph for the flag.

```

#(define-public (weight-flag grob)
  (let* ((stem-grob (ly:grob-parent grob X))
         (log (- (ly:grob-property stem-grob 'duration-log) 2))
         (is-up? (eqv? (ly:grob-property stem-grob 'direction) UP))
         (yext (if is-up? (cons (* log -0.8) 0) (cons 0 (* log 0.8))))
         (flag-stencil (make-filled-box-stencil '(-0.4 . 0.4) yext))
         (stroke-style (ly:grob-property grob 'stroke-style))
         (stroke-stencil (if (equal? stroke-style "grace")
                              (make-line-stencil 0.2 -0.9 -0.4 0.9 -0.4)
                              empty-stencil)))
    (ly:stencil-add flag-stencil stroke-stencil)))

% Create a flag stencil by looking up the glyph from the font
#(define (inverted-flag grob)
  (let* ((stem-grob (ly:grob-parent grob X))
         (dir (if (eqv? (ly:grob-property stem-grob 'direction) UP) "d" "u"))
         (flag (retrieve-glyph-flag "" dir "" grob))
         (line-thickness (ly:staff-symbol-line-thickness grob))
         (stem-thickness (ly:grob-property stem-grob 'thickness))
         (stem-width (* line-thickness stem-thickness))
         (stroke-style (ly:grob-property grob 'stroke-style))
         (stencil (if (null? stroke-style)
                      flag
                      (add-stroke-glyph flag stem-grob dir stroke-style ""))))

```



```

        (rotated-flag (ly:stencil-rotate-absolute stencil 180 0 0)))
    (ly:stencil-translate rotated-flag (cons (- (/ stem-width 2)) 0))))

snippetexamplenotes =
{
  \autoBeamOff c'8 d'16 c'32 d'64 \acciaccatura {c'8} d'64
}

{
  \time 1/4
  \textMark "Normal flags"
  \snippetexamplenotes

  \textMark "Custom flag: inverted"
  \override Flag.stencil = #inverted-flag
  \snippetexamplenotes

  \textMark "Custom flag: weight"
  \override Flag.stencil = #weight-flag
  \snippetexamplenotes

  \textMark "Revert to normal"
  \revert Flag.stencil
  \snippetexamplenotes
}

```



## Glissando kann Grobs überspringen

NoteColumn-Grobs können bei Glissandos übersprungen werden.

```

\relative c' {
  a2 \glissando
  \once \override NoteColumn.glissando-skip = ##t
  f''4 d,
}

```



## Hairpins with different line styles

Hairpins can take any style from line-interface - dashed-line, dotted-line, line, trill or zigzag.

```

\relative c' {
  c2\< c\!
  \override Hairpin.style = #'dashed-line
  c2\< c\!
  \override Hairpin.style = #'dotted-line
}

```

```

c2\< c\!
\override Hairpin.style = #'line
c2\< c\!
\override Hairpin.style = #'trill
c2\< c\!
\override Hairpin.style = #'zigzag
c2\< c\!
\revert Hairpin.style
c2\< c\!
}

```



## Horizontally aligning custom dynamics (e.g. "sempre pp", "piu f", "subito p")

Some dynamic expressions involve additional text, like „sempre **pp**“. Since dynamics are usually centered under the note, the `\pp` would be displayed way after the note it applies to.

To correctly align the „sempre **pp**“ horizontally so that it is aligned as if it were only the `\pp`, there are several approaches:

- Simply use `\once\override DynamicText.X-offset = #-9.2` before the note with the dynamics to manually shift it to the correct position. Drawback: This has to be done manually each time you use that dynamic markup...
- Add some padding (`#:hspace 7.1`) into the definition of your custom dynamic mark so that after LilyPond center-aligns it, it is already correctly aligned. Drawback: The padding really takes up that space and does not allow any other markup or dynamics to be shown in that position.
- Shift the dynamic script `\once\override ... .X-offset = ....` Drawback: `\once\override` is needed for every invocation!
- Set the dimensions of the additional text to 0 (using `#:with-dimensions '(0 . 0) '(0 . 0)`). Drawback: For LilyPond, „sempre“ has no extent now. This means it might put other stuff there, causing collisions (which are not detected by LilyPond’s collision detection algorithm!). There also seems to be some spacing, so it is not exactly the same alignment as without the additional text.
- Add an explicit shift directly inside the scheme function for the dynamic script.
- Set an explicit alignment inside the dynamic script. By default, this won’t have any effect, only if one sets `X-offset`! Drawback: One needs to set `DynamicText.X-offset`, which will apply to all dynamic texts! Also, it is aligned at the right edge of the additional text, not at the center of `\pp`.

```

\paper {
  ragged-right = ##f
  indent = 2.5\cm
  tagline = ##f
}

```

*% Solution 1: Using a simple markup with a particular halign value*  
*% Drawback: It's a markup, not a dynamic command, so \dynamicDown*

```

%           etc. will have no effect
semppMarkup = \markup { \halign #1.4 \italic "sempre" \dynamic "pp" }

% Solution 2: Using a dynamic script & shifting with
%           \once \override ...X-offset = ..
% Drawback: \once \override needed for every invocation
semppK =
#(make-dynamic-script
  (markup #:line
    (#:normal-text
      #:italic "sempre"
      #:dynamic "pp"))))

% Solution 3: Padding the dynamic script so the center-alignment
%           puts it at the correct position
% Drawback: the padding really reserves the space, nothing else can be there
semppT =
#(make-dynamic-script
  (markup #:line
    (#:normal-text
      #:italic "sempre"
      #:dynamic "pp"
      #:hspace 7.1)))

% Solution 4: Dynamic, setting the dimensions of the additional text to 0
% Drawback: To lilypond "sempre" has no extent, so it might put
%           other stuff there => collisions
% Drawback: Also, there seems to be some spacing, so it's not exactly the
%           same alignment as without the additional text
semppM =
#(make-dynamic-script
  (markup #:line
    (#:with-dimensions '(0 . 0) '(0 . 0)
      #:right-align
      #:normal-text
      #:italic "sempre"
      #:dynamic "pp"))))

% Solution 5: Dynamic with explicit shifting inside the scheme function
semppG =
#(make-dynamic-script
  (markup #:hspace 0
    #:translate '(-18.85 . 0)
    #:line (#:normal-text
      #:italic "sempre"
      #:dynamic "pp"))))

% Solution 6: Dynamic with explicit alignment. This has only effect
%           if one sets X-offset!
% Drawback: One needs to set DynamicText.X-offset!
% Drawback: Aligned at the right edge of the additional text,
%           not at the center of pp

```

```

semppMII =
#(make-dynamic-script
  (markup #:line (#:right-align
                  #:normal-text
                  #:italic "sempre"
                  #:dynamic "pp")))

\new StaffGroup <<
  \new Staff = "s" \with { instrumentName = \markup \column { Normal } }
  <<
    \relative c'' {
      \key es \major
      c4\pp c\p c c | c\ff c c\pp c
    }
  >>
  \new Staff = "sMarkup" \with {
    instrumentName = \markup \column { Normal markup }
  }
  <<
    \relative c'' {
      \key es \major
      c4-\semppMarkup c\p c c | c\ff c c-\semppMarkup c
    }
  >>
  \new Staff = "sK" \with {
    instrumentName = \markup \column { Explicit shifting }
  }
  <<
    \relative c'' {
      \key es \major
      \once \override DynamicText.X-offset = #-9.2
      c4\semppK c\p c c
      c4\ff c
      \once \override DynamicText.X-offset = #-9.2
      c4\semppK c
    }
  >>
  \new Staff = "sT" \with {
    instrumentName = \markup \column { Right padding }
  }
  <<
    \relative c'' {
      \key es \major
      c4\semppT c\p c c | c\ff c c\semppT c
    }
  >>
  \new Staff = "sM" \with {
    instrumentName = \markup \column { Set dimension "to zero" }
  }
  <<
    \relative c'' {
      \key es \major

```

```

c4\semppM c\p c c | c\ff c c\semppM c
}
>>
\new Staff = "sG" \with {
  instrumentName = \markup \column { Shift inside dynamics}
}
<<
\relative c'' {
  \key es \major
  c4\semppG c\p c c | c\ff c c\semppG c
}
>>
\new Staff = "sMII" \with {
  instrumentName = \markup \column { Alignment inside dynamics }
}
<<
\relative c'' {
  \key es \major
  % Setting to ##f (false) gives the same result
  \override DynamicText.X-offset = #0
  c4\semppMII c\p c c | c\ff c c\semppMII c
}
>>
>>

\layout { \override Staff.InstrumentName.self-alignment-X = #LEFT }

```

Normal	
Normal markup	
Explicit shifting	
Right padding	
Set dimension to zero	
Shift inside dynamics	
Alignment inside dynamics	

## How to change fret diagram position

If you want to move the position of a fret diagram, for example, to avoid collision, or to place it between two notes, you have various possibilities:

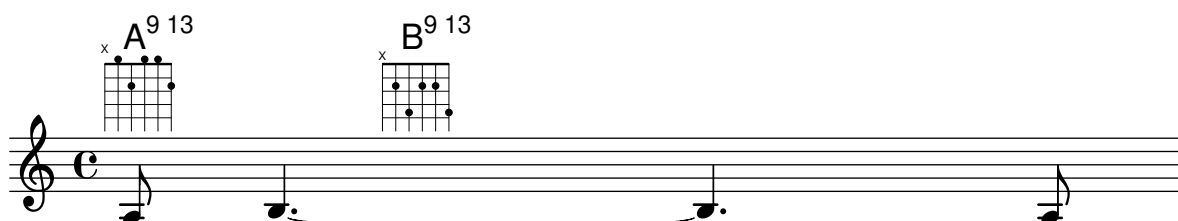
- 1) modify `#'padding` or `#'extra-offset` values (as shown in the first snippet)
- 2) you can add an invisible voice and attach the fret diagrams to the invisible notes in that voice (as shown in the second example).

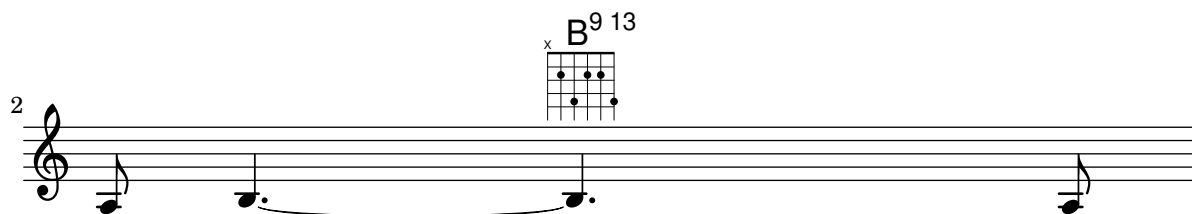
If you need to move the fret according with a rhythmic position inside the bar (in the example, the third beat of the measure) the second example is better, because the fret is aligned with the third beat itself.

```
\header { tagline = ##f }

harmonies = \chordmode
{
  a8:13
  % THE FOLLOWING IS THE COMMAND TO MOVE THE CHORD NAME
  \once \override ChordNames.ChordName.extra-offset = #'(10 . 0)
  b8:13 s2.
  % THIS LINE IS THE SECOND METHOD
  s4 s4 b4:13
}

\score
{
  <<
    \new ChordNames \harmonies
    \new Staff
    {a8~\markup { \fret-diagram "6-x;5-0;4-2;3-0;2-0;1-2;" }
  % THE FOLLOWING IS THE COMMAND TO MOVE THE FRET DIAGRAM
  \once \override TextScript.extra-offset = #'(10 . 0)
  b4.~\markup { \fret-diagram "6-x;5-2;4-4;3-2;2-2;1-4;" } b4. a8\break
  % HERE IS THE SECOND METHOD
  <<
    { a8 b4.~ b4. a8}
    { s4 s4 s4~\markup { \fret-diagram "6-x;5-2;4-4;3-2;2-2;1-4;" }
    }
  >>
  }
  >>
}
```





## Eine Zäsur einfügen

Zäsurzeichen können erstellt werden, indem die 'text'-Eigenschaft des BreathingSign-Objektes verändert wird. Ein gekrümmtes Zäsurzeichen ist auch möglich.

```
\relative c' {
  \override BreathingSign.text = \markup {
    \musicglyph "scripts.caesura.straight"
  }
  c8 e4. \breathe g8. e16 c4

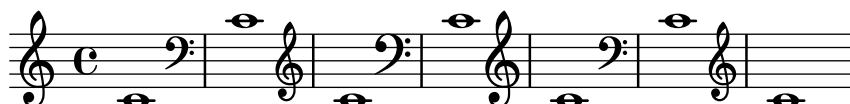
  \override BreathingSign.text = \markup {
    \musicglyph "scripts.caesura.curved"
  }
  g8 e'4. \breathe g8. e16 c4
}
```



## Keep change clefs full sized

When a clef is changed, the clef sign displayed is smaller than the initial clef. This can be overridden with full-size-change.

```
\relative c' {
  \clef "treble"
  c1
  \clef "bass"
  c1
  \clef "treble"
  c1
  \override Staff.Clef.full-size-change = ##t
  \clef "bass"
  c1
  \clef "treble"
  c1
  \revert Staff.Clef.full-size-change
  \clef "bass"
  c1
  \clef "treble"
  c1
}
```



## Line arrows

Arrows can be applied to text-spanners and line-spanners (such as the Glissando).

```
\relative c' ' {
  \override TextSpanner.bound-padding = #1.0
  \override TextSpanner.style = #'line
  \override TextSpanner.bound-details.right.arrow = ##t
  \override TextSpanner.bound-details.left.text = #"fof"
  \override TextSpanner.bound-details.right.text = #"gag"
  \override TextSpanner.bound-details.right.padding = #0.6

  \override TextSpanner.bound-details.right.stencil-align-dir-y = #CENTER
  \override TextSpanner.bound-details.left.stencil-align-dir-y = #CENTER

  \override Glissando.bound-details.right.arrow = ##t
  \override Glissando.arrow-length = #0.5
  \override Glissando.arrow-width = #0.25

  a8\startTextSpan gis a4 b\glissando b,
  g'4 c\stopTextSpan c2
}
```



## Making an object invisible with the 'transparent' property

Setting the transparent property will cause an object to be printed in „invisible ink“: the object is not printed, but all its other behavior is retained. The object still takes up space, it takes part in collisions, and slurs, ties and beams can be attached to it.

This snippet demonstrates how to connect different voices using ties. Normally, ties only connect two notes in the same voice. By introducing a tie in a different voice, and blanking the first up-stem in that voice, the tie appears to cross voices.

```
\relative {
  \time 2/4
  <<
  {
    \once \hide Stem
    \once \override Stem.length = #8
    b'8 ~ 8\noBeam
    \once \hide Stem
    \once \override Stem.length = #8
    g8 ~ 8\noBeam
  }
  \\\
  {
    b8 g g e
  }
  >>
}
```





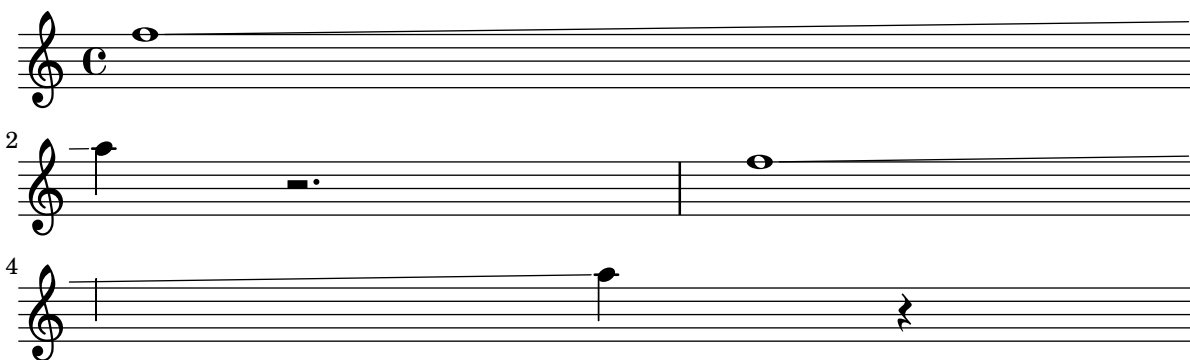
## Making glissandi breakable

Setting the breakable property to `#t` in combination with after-line-breaking allows a glissando to break if it occurs at a line break:

```
\paper { tagline = ##f }

glissandoSkipOn = {
  \override NoteColumn.glissando-skip = ##t
  \hide NoteHead
  \override NoteHead.no-ledgers = ##t
}

\relative c' {
  \override Glissando.breakable = ##t
  \override Glissando.after-line-breaking = ##t
  f1\glissando |
  \break
  a4 r2. |
  f1\glissando
  \once \glissandoSkipOn
  \break
  a2 a4 r4 |
}
```



## Manually controlling beam positions

Beam positions may be controlled manually, by overriding the positions setting of the Beam grob.

```
\relative c' {
  \time 2/4
  % from upper staff-line (position 2) to center (position 0)
  \override Beam.positions = #'(2 . 0)
  c8 c
  % from center to one above center (position 1)
  \override Beam.positions = #'(0 . 1)
  c8 c
}
```



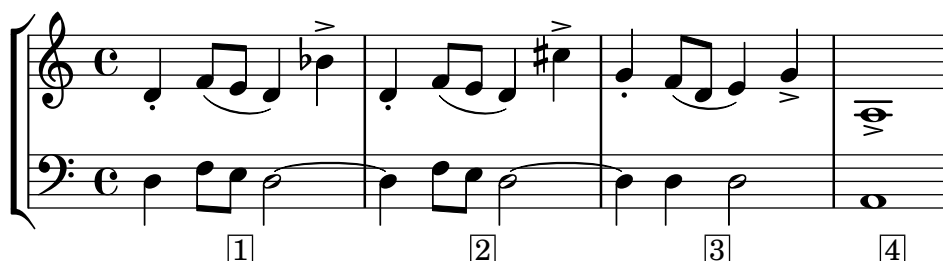
## Measure-centered bar numbers

For film scores, a common convention is to center bar numbers within their measure. This is achieved through setting the `centerBarNumbers` context property to `true`. When this is used, the type of the bar number grobs is `CenteredBarNumber` rather than `BarNumber`.

This example demonstrates a number of settings: the centered bar numbers are boxed and placed below the staves.

```
\layout {
  \context {
    \Score
    centerBarNumbers = ##t
    barNumberVisibility = #all-bar-numbers-visible
    \override CenteredBarNumber.stencil
      = #(make-stencil-boxer 0.1 0.25 ly:text-interface::print)
    \override CenteredBarNumberLineSpanner.direction = #DOWN
  }
}
```

```
\new StaffGroup <<
  \new Staff \relative c' {
    d4-. f8( e d4) bes'-> |
    d,-. f8( e d4) cis'-> |
    g-. f8( d e4) g-> |
    a,1-> |
  }
  \new Staff \relative c {
    \clef bass
    d4 f8 e d2~ |
    4 f8 e d2~ |
    4 4 2 |
    a1 |
  }
>>
```



## Mensurstriche-Layout (Taktstriche zwischen den Systemen)

Das Mensurstriche-Layout, in welchem die Taktlinien nicht auf den Systemen, sondern zwischen den Systemen gesetzt werden, kann mit einer `StaffGroup` anstelle von `ChoirStaff` erreicht werden. Die Taktlinien auf den Systemen werden mit der `transparent`-Eigenschaft ausgelöscht.

```
\layout {
```

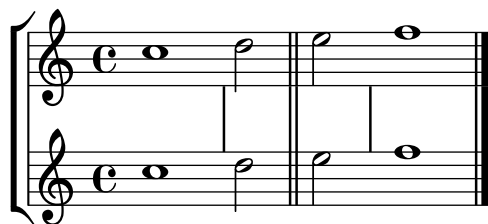
```

\context {
  \Staff
  measureBarType = "-span|"
}
}

music = \fixed c'' {
  c1
  d2 \section e2
  f1 \fine
}

\new StaffGroup <<
  \new Staff \music
  \new Staff \music
>>

```



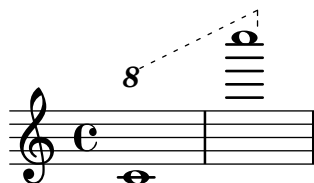
## Modifying the Ottava spanner slope

It is possible to change the slope of the Ottava spanner.

```

\relative c'' {
  \override Staff.OttavaBracket.stencil = #ly:line-spanner::print
  \override Staff.OttavaBracket.bound-details =
    #`((left . ((Y . 0)
      (attach-dir . ,LEFT)
      (padding . 0)
      (stencil-align-dir-y . ,CENTER)))
      (right . ((Y . 5.0) ; Change the number here
        (padding . 0)
        (attach-dir . ,RIGHT)
        (text . ,(make-draw-dashed-line-markup
          (cons 0 -1.2))))))
  \override Staff.OttavaBracket.left-bound-info =
    #ly:horizontal-line-spanner::calc-left-bound-info-and-text
  \override Staff.OttavaBracket.right-bound-info =
    #ly:horizontal-line-spanner::calc-right-bound-info
  \ottava 1
  c1
  c'''1
}

```



## Moving dotted notes in polyphony

When a dotted note in the upper voice is moved to avoid a collision with a note in another voice, the default is to move the upper note to the right. This behaviour can be over-ridden by using the `prefer-dotted-right` property of `NoteCollision`.

```
\new Staff \relative c' <<
{
  f2. f4
  \override Staff.NoteCollision.prefer-dotted-right = ##f
  f2. f4
  \override Staff.NoteCollision.prefer-dotted-right = ##t
  f2. f4
}
\\
{ e4 e e e e e e e e e e }
>>
```



## Moving slur positions vertically

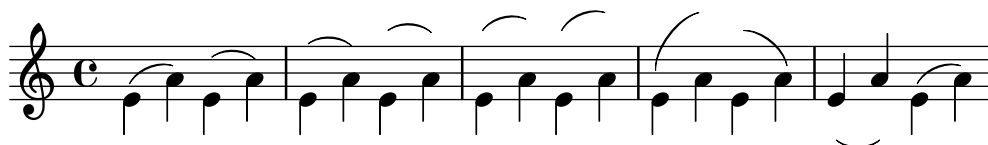
The vertical position of a slur can be adjusted using the `positions` property of `Slur`. The property has 2 parameters, the first referring to the left end of the slur and the second to the right. The values of the parameters are not used by LilyPond to make an exact movement of the slur - instead it selects what placement of the slur looks best, taking into account the parameter values. Positive values move the slur up, and are appropriate for notes with stems down. Negative values move downward slurs further down.

```
\relative c' {
  \stemDown
  e4( a)
  \override Slur.positions = #'(1 . 1)
  e4( a)
  \override Slur.positions = #'(2 . 2)
  e4( a)
  \override Slur.positions = #'(3 . 3)
  e4( a)
  \override Slur.positions = #'(4 . 4)
  e4( a)
  \override Slur.positions = #'(5 . 5)
  e4( a)
  \override Slur.positions = #'(0 . 5)
  e4( a)
  \override Slur.positions = #'(5 . 0)
  e4( a)
}
```

```

\stemUp
\override Slur.positions = #'(-5 . -5)
e4( a)
\stemDown
\revert Slur.positions
e4( a)
}

```



## Systeme schachteln

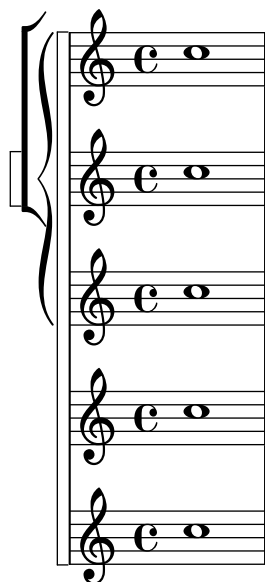
Die Eigenschaft `systemStartDelimiterHierarchy` kann eingesetzt werden, um komplizierte geschachtelte Systemklammern zu erstellen. Der Befehl `\set StaffGroup.systemStartDelimiterHierarchy` nimmt eine Liste mit der Anzahl der Systeme, die ausgegeben werden, auf. Vor jedem System kann eine Systemanfangsklammer angegeben werden. Sie muss in Klammern eingefügt werden und umfasst so viele Systeme, wie die Klammer einschließt. Elemente in der Liste können ausgelassen werden, aber die erste Klammer umfasst immer die gesamte Gruppe. Die Möglichkeiten der Anfangsklammer sind: `SystemStartBar`, `SystemStartBracket`, `SystemStartBrace` und `SystemStartSquare`.

```

\new StaffGroup
\relative c'' <<
  \override StaffGroup.SystemStartSquare.collapse-height = 4
  \set StaffGroup.systemStartDelimiterHierarchy
    = #'(SystemStartSquare (SystemStartBrace (SystemStartBracket a
      (SystemStartSquare b) ) c ) d)

  \new Staff { c1 }
  \new Staff { c1 }
  \new Staff { c1 }
  \new Staff { c1 }
  \new Staff { c1 }
>>

```



## Overriding articulations by type

Sometimes you may want to affect a single articulation-type. Although it is always possible to use `\tweak`, it might become tedious to do so for every single sign of a whole score. The following shows how to tweak articulations with a list of custom settings. One use-case might be to create a style sheet.

With 2.16.2 and above it is possible to put the proposed function, `\customScripts`, into a `\layout-block`.

*% Code by David Nalesnik and Thomas Morley*

```
#(define (custom-script-tweaks ls)
  (lambda (grob)
    (let* ((type (ly:event-property
                  (ly:grob-property grob 'cause)
                  'articulation-type))
           (tweaks (assoc-ref ls type)))
      (if tweaks
          (for-each
            (lambda (x) (ly:grob-set-property! grob (car x) (cdr x)))
            tweaks))))))
```

```
customScripts =
#(define-music-function (settings) (list?)
#{
  \override Script.before-line-breaking =
    #(custom-script-tweaks settings)
#})
```

```
revertCustomScripts = \revert Script.before-line-breaking
```

```
%%%%%%%%%%%%%%
```

```
% Example:
```

```
%%%%%%%%%%%%%%
```

```
% Predefine a list of desired tweaks.
```

```
#(define my-settings-1
' (
  (staccato . ((color . (1 0 0))
               (padding . 0.5)))
  (accent . ((font-size . 0)
             (color . (1 0 0))))
  (tenuto . ((rotation . (45 0 0))
             (padding . 2)
             (font-size . 10)))
  (staccatissimo . ((padding . 1)
                    (color . (1 0 0))))
  (segno . ((font-size . 0)
            (color . (1 0 0))))
))
```

```
#(define my-settings-2
' (
```

```

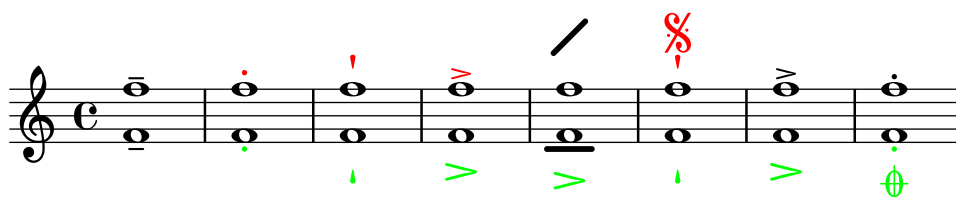
(staccato . ((color . (0 1 0))))
(accent . ((font-size . 4)
           (color . (0 1 0))
           (padding . 1.5)))
(tenuto . ((font-size . 10)))
(staccatissimo . ((padding . 2)
                  (color . (0 1 0))))
(coda . ((color . (0 1 0))
         (padding . 1)))
))

one =
\relative c' {
  f1--
  \customScripts #my-settings-1
  f-. f-! f-> f-- f-!\segno
  \revertCustomScripts
  f-> f-.
}

two =
\relative c' {
  f1--
  \customScripts #my-settings-2
  f-. f-! f-> f---> f-!
  f-> f-.\coda
}

\new Staff
<<
  \new Voice { \voiceOne \one }
  \new Voice { \voiceTwo \two }
>>

```



## Overriding articulations of distinct type

Sometimes you may want to affect a single articulation type. Although it is always possible to use `\tweak`, it might become tedious to do so for every single sign of a whole score. The following shows how to tweak articulations with a list of custom settings. One use case might be to create a style sheet.

With 2.16.2 it is possible to put the proposed function, `\customScripts`, into a `\layout` block.

*% Code by David Nalesnik and Thomas Morley*

```

\define (custom-script-tweaks ls)
  (lambda (grob)

```

```

    (let* ((type (ly:prob-property
                  (ly:grob-property grob 'cause)
                  'articulation-type))
           (tweaks (assoc-ref ls type)))
      (if tweaks
          (for-each
            (lambda (x) (ly:grob-set-property! grob (car x) (cdr x)))
            tweaks))))))

customScripts =
#(define-music-function (settings)(list?)
#{
  \override Script.before-line-breaking =
    #(custom-script-tweaks settings)
#})

revertCustomScripts = { \revert Script.before-line-breaking }

%%%%%%%%%%%%%%
% Example:
%%%%%%%%%%%%%%

% Predefine a list of desired tweaks.
#(define my-settings-1
  '(
    ("staccato" . ((color . (1 0 0))(padding . 0.5)))
    ("accent" . ((font-size . 0)(color . (1 0 0))))
    ("tenuto" . ((rotation . (45 0 0)) (padding . 2)(font-size . 10)))
    ("staccatissimo" . ((padding . 1) (color . (1 0 0))))
    ("segno" . ((font-size . 0)(color . (1 0 0))))
  ))

#(define my-settings-2
  '(
    ("staccato" . ((color . (0 1 0))))
    ("accent" . ((font-size . 4)(color . (0 1 0))(padding . 1.5)))
    ("tenuto" . ((font-size . 10)))
    ("staccatissimo" . ((padding . 2) (color . (0 1 0))))
    ("coda" . ((color . (0 1 0)) (padding . 1)))
  ))

one =
\relative c' {
  f1--
  \customScripts #my-settings-1
  f-. f-! f-> f-- f-!\segno
  \revertCustomScripts
  f-> f-.
}

two =
\relative c' {

```

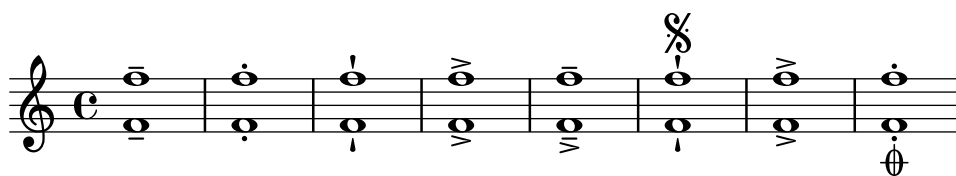


```

f1--
\customScripts #my-settings-2
f-. f-! f-> f---> f-!
f-> f-.\coda
}

\new Staff <<
  \new Voice { \voiceOne \one }
  \new Voice { \voiceTwo \two }
  >>

```



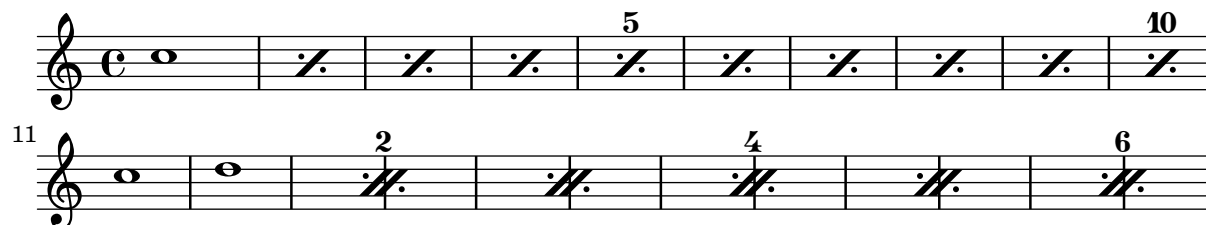
## Sichtbarkeit von Prozent-Wiederholungen

Prozentwiederholungszähler können in regelmäßigen Intervallen angezeigt werden, indem man die Eigenschaft `repeatCountVisibility` beeinflusst.

```

\relative c' {
  \set countPercentRepeats = ##t
  \set repeatCountVisibility = #(every-nth-repeat-count-visible 5)
  \repeat percent 10 { c1 } \break
  \set repeatCountVisibility = #(every-nth-repeat-count-visible 2)
  \repeat percent 6 { c1 d1 }
}

```



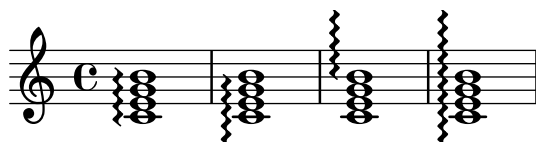
## Positioning arpeggios

If you need to extend or shorten an arpeggio, you can modify the upper and lower start positions independently.

```

\relative c' {
  <c e g b>1\arpeggio
  \once \override Arpeggio.positions = #'(-5 . 0)
  <c e g b>1\arpeggio
  \once \override Arpeggio.positions = #'(0 . 5)
  <c e g b>1\arpeggio
  \once \override Arpeggio.positions = #'(-5 . 5)
  <c e g b>1\arpeggio
}

```



## Positionierung von Ganztaktpausen

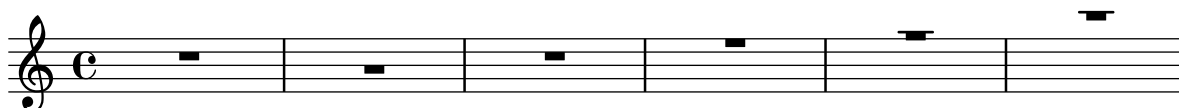
Anders als bei normalen Pausen gibt es keinen direkten Befehl, um die vertikale Position von Ganztaktpausen zu beeinflussen, indem man sie an eine Tonhöhe anhängt. In polyphoner Notation wird aber dennoch die Position der Pausen von geraden und ungeraden Stimmen voneinander unterschieden. Die Position von Ganztaktpausen kann wie folgt verändert werden:

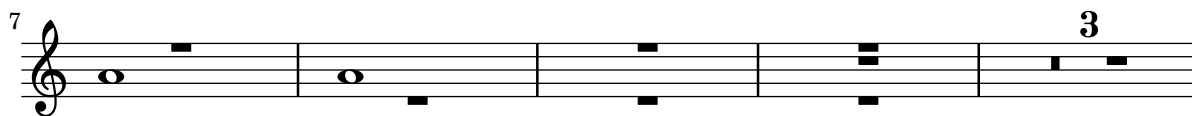
```
\relative c'' {
  % Multi-measure rests by default are set under the fourth line
  R1
  % They can be moved using an override
  \override MultiMeasureRest.staff-position = -2
  R1
  \override MultiMeasureRest.staff-position = 0
  R1
  \override MultiMeasureRest.staff-position = 2
  R1
  \override MultiMeasureRest.staff-position = 3
  R1
  \override MultiMeasureRest.staff-position = 6
  R1
  \revert MultiMeasureRest.staff-position
  \break

  % In two Voices, odd-numbered voices are under the top line
  << { R1 } \\\ { a1 } >>
  % Even-numbered voices are under the bottom line
  << { a1 } \\\ { R1 } >>
  % Multi-measure rests in both voices remain separate
  << { R1 } \\\ { R1 } >>

  % Separating multi-measure rests in more than two voices
  % requires an override
  << { R1 } \\\ { R1 } \\\
    \once \override MultiMeasureRest.staff-position = 0
    { R1 }
  >>

  % Using compressed bars in multiple voices requires another override
  % in all voices to avoid multiple instances being printed
  \compressMMRests
  <<
    \revert MultiMeasureRest.direction
    { R1*3 }
    \\\
    \revert MultiMeasureRest.direction
    { R1*3 }
  >>
}
```





## Textbeschriftung innerhalb von Bögen positionieren

Textbeschriftung kann innerhalb von Bögen gesetzt werden, wenn die `outside-staff-priority`-Eigenschaft auf falsch gesetzt wird.

```
\relative c' {
  \override TextScript.avoid-slur = #'inside
  \override TextScript.outside-staff-priority = ##f
  c2(~\markup { \halign #-10 \natural } d4.) c8
}
```



## Setzen von Taktnummern in Kästen oder Kreisen

Taktnummern können auch in Boxen oder Kreisen gesetzt werden.

```
\relative c' {
  % Prevent bar numbers at the end of a line and permit them elsewhere
  \override Score.BarNumber.break-visibility = #end-of-line-invisible
  \set Score.barNumberVisibility = #(every-nth-bar-number-visible 4)

  % Increase the size of the bar number by 2
  \override Score.BarNumber.font-size = 2

  % Draw a box round the following bar number(s)
  \override Score.BarNumber.stencil
    = #(make-stencil-boxer 0.1 0.25 ly:text-interface::print)
  \repeat unfold 5 { c1 }

  % Draw a circle round the following bar number(s)
  \override Score.BarNumber.stencil
    = #(make-stencil-circler 0.1 0.25 ly:text-interface::print)
  \repeat unfold 4 { c1 } \bar "|."
}
```



## Metronom- und Übungszeichen unter das System setzen

Normalerweise werden Metronom- und Übungszeichen über dem Notensystem ausgegeben. Um sie unter das System zu setzen, muss die `direction`-Eigenschaft von `MetronomeMark` oder `RehearsalMark` entsprechend verändert werden.

```
\layout {
  indent = 0
}
```

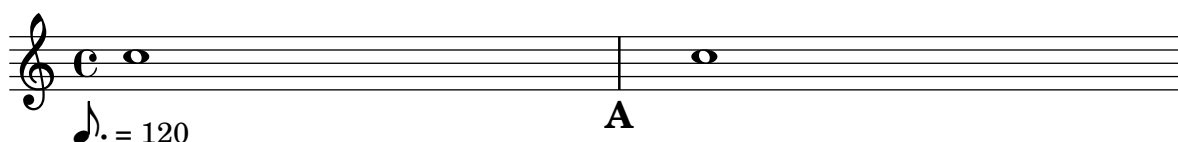
```

    ragged-right = ##f
}

{
  % Metronome marks below the staff
  \override Score.MetronomeMark.direction = #DOWN
  \tempo 8. = 120
  c''1

  % Rehearsal marks below the staff
  \override Score.RehearsalMark.direction = #DOWN
  \mark \default
  c''1
}

```



## Printing note names with and without an octave marker

The NoteNames context can be used to print the text value of notes. The `printOctaveNames` property turns on or off the representation of the octave of the note.

```

scale = \relative c' {
  a4 b c d
  e4 f g a
}

\new Staff {
  <<
    \scale
    \context NoteNames {
      \set printOctaveNames = ##f
    }
  >>
  R1
  <<
    \scale
    \context NoteNames {
      \set printOctaveNames = ##t
    }
  >>
}

```



## Printing tuplet brackets on the note head side

Whichever option you choose for controlling the tuplet bracket visibility, it will show or hide the tuplet bracket irrespectively of tuplet bracket placement (stem side or note head side). However, when placing the tuplet bracket on the note head side some authors recommend always printing the tuplet bracket. The option `visible-over-note-heads` can be used to achieve this.

```
music = \relative c'' {
  \tupletNeutral \tuplet 3/2 { c16[ d e ] f8]
  \tupletUp \tuplet 3/2 { c8 d e }
}

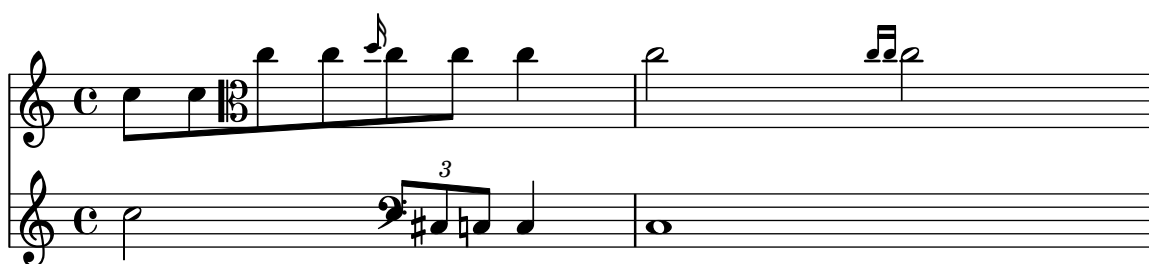
\new Voice {
  \relative c' {
    \time 2/4
    \override TupletBracket.visible-over-note-heads = ##t
    \override Score.TextMark.non-musical = ##f
    { \textMark \markup "default" \music }
    \override TupletBracket.bracket-visibility = #'if-no-beam
    { \textMark \markup \typewriter "'if-no-beam" \music }
  }
}
```



## Proportional strict notespacing

If `strict-note-spacing` is set spacing of notes is not influenced by bars or clefs within a system. Rather, they are placed just before the note that occurs at the same time. This may cause collisions.

```
\relative c'' <<
  \override Score.SpacingSpanner.strict-note-spacing = ##t
  \set Score.proportionalNotationDuration = \musicLength 16
  \new Staff {
    c8[ c \clef alto c c \grace { d16 } c8 c] c4
    c2 \grace { c16[ c16] } c2
  }
  \new Staff {
    c2 \tuplet 3/2 { c8 \clef bass cis,, c } c4
    c1
  }
>>
```



## Removing brace on first line of piano score

This snippet removes the first brace from a `PianoStaff` or a `GrandStaff`, together with the clefs.

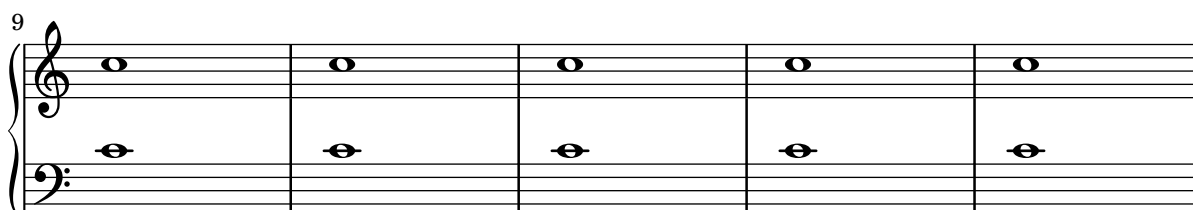
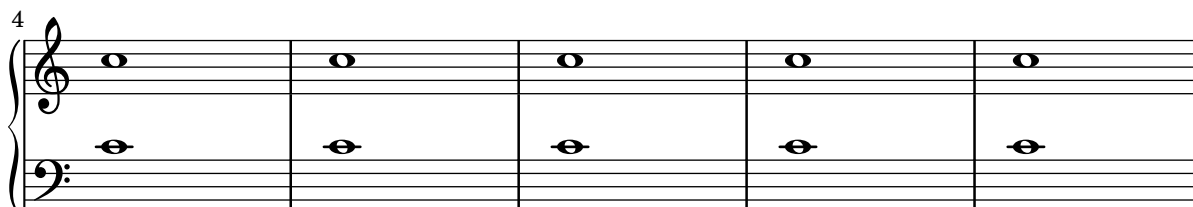
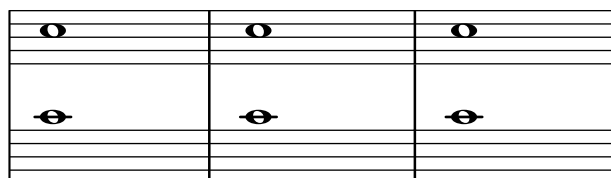
It may be useful when cutting and pasting the engraved image into existing music.

It uses `\alterBroken`.

```
someMusic = {
  \once \override Staff.Clef.stencil = ##f
  \once \override Staff.TimeSignature.stencil = ##f
  \repeat unfold 3 c1 \break
  \repeat unfold 5 c1 \break
  \repeat unfold 5 c1
}

\score {
  \new PianoStaff
  <<
    \new Staff = "right" \relative c' { \someMusic
    \new Staff = "left" \relative c' { \clef F \someMusic }
  >>
  \layout {
    indent=75
    \context {
      \PianoStaff
      \alterBroken transparent #'(#t) SystemStartBrace
    }
  }
}

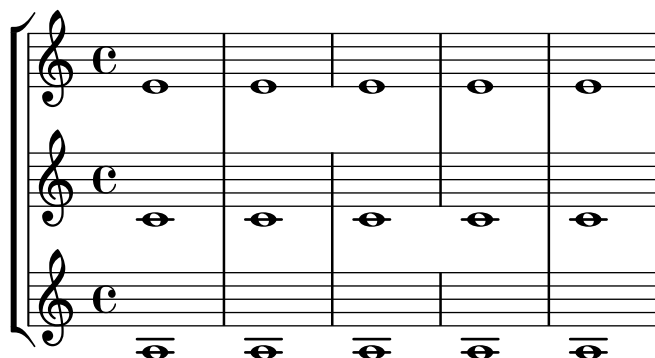
\paper { tagline = ##f }
```



## Removing connecting bar lines on StaffGroup, PianoStaff, or GrandStaff

By default, bar lines in StaffGroup, PianoStaff, or GrandStaff groups are connected between the staves, i.e. a SpanBar is printed. This behaviour can be overridden on a staff-by-staff basis.

```
\relative c' {
  \new StaffGroup <<
    \new Staff {
      e1 | e
      \once \override Staff.BarLine.allow-span-bar = ##f
      e1 | e | e
    }
    \new Staff {
      c1 | c | c
      \once \override Staff.BarLine.allow-span-bar = ##f
      c1 | c
    }
    \new Staff {
      a1 | a | a | a | a
    }
  >>
}
```



## Die erste leere Notenzeile auch entfernen

Ein leeres Notensystem kann auch aus der ersten Zeile einer Partitur entfernt werden, indem die Eigenschaft `remove-first` der `VerticalAxisGroup`-Eigenschaft eingesetzt wird. Das kann man global in einer `\layout`-Umgebung oder lokal in dem bestimmten Notensystem machen, das entfernt werden soll. In letzterem Fall muss man den Kontext angeben.

Das untere Notensystem der zweiten Systemgruppe wird nicht entfernt, weil in die Einstellungen in dem Schnipsel nur für das eine Notensystem gültig sind.

```
\layout {
  \context {
    \Staff \RemoveEmptyStaves
    % To use the setting globally, uncomment the following line:
    % \override VerticalAxisGroup.remove-first = ##t
  }
}

\new StaffGroup <<
  \new Staff \relative c' {
    e4 f g a \break
    c1
  }
```

```

}
\new Staff {
  % To use the setting globally, comment this line,
  % uncomment the line in the \layout block above
  \override Staff.VerticalAxisGroup.remove-first = ##t
  R1 \break
  R
}
>>
\new StaffGroup <<
  \new Staff \relative c' {
    e4 f g a \break
    c1
  }
  \new Staff {
    R1 \break
    R
  }
>>

\paper { tagline = ##f }

```

The image displays the musical notation generated by the provided LaTeX code. It consists of four staves. The first staff contains four quarter notes: e, f, g, and a. The second staff contains a whole rest. The third staff is a system containing two staves; the top staff has four quarter notes (e, f, g, a) and the bottom staff has a whole rest. The fourth staff contains a whole rest. The notation is in common time (C) and the key signature is one sharp (F#).

## Pausenstile

Pausen können in verschiedenen Stilen dargestellt werden.

```

restsA = {
  r\maxima r\longa r\breve r1 r2 r4 r8 r16 s32
  s64 s128 s256 s512 s1024 s1024
}
restsB = {
  r\maxima r\longa r\breve r1 r2 r4 r8 r16 r32
  r64 r128 r256 r512 r1024 s1024
}

```



```

\new Staff \relative c {
  \omit Score.TimeSignature
  \cadenzaOn

  \override Staff.Rest.style = #'mensural
  <>~\markup \typewriter { mensural } \restsA \bar "" \break

  \override Staff.Rest.style = #'neomensural
  <>~\markup \typewriter { neomensural } \restsA \bar "" \break

  \override Staff.Rest.style = #'classical
  <>~\markup \typewriter { classical } \restsB \bar "" \break

  \override Staff.Rest.style = #'z
  <>~\markup \typewriter { z-style } \restsB \bar "" \break

  \override Staff.Rest.style = #'default
  <>~\markup \typewriter { default } \restsB \bar "" \break
}

\paper {
  indent = 0
  tagline = ##f
}

```

The image displays five musical staves, each labeled with a rest style. The first staff, 'mensural', shows simple horizontal lines for rests. The second, 'neomensural', uses vertical stems. The third, 'classical', uses vertical stems with flags. The fourth, 'z-style', uses vertical stems with 'z' characters. The fifth, 'default', uses vertical stems with 'z' characters and multi-measure rest notation.

## Rhythmic slashes

In „simple“ lead-sheets, sometimes no actual notes are written, instead only „rhythmic patterns“ and chords above the measures are notated giving the structure of a song. Such a feature is for example useful while creating/transcribing the structure of a song and also when sharing lead sheets with guitarists or jazz musicians.

```

startPat = {
  \improvisationOn

```

```

\omit Stem
}
stopPat = {
  \improvisationOff
  \undo \omit Stem
}

\new Voice \with {
  \consists Pitch_squash_engraver
} {
  c'4 d' e' f' |
  \startPat
  4 4 4 4 |
  \stopPat
  f'4 e' d' c'
}

```



## Separating key cancellations from key signature changes

By default, the accidentals used for key cancellations are placed adjacent to those for key signature changes. This behavior can be changed by overriding the `break-align-orders` property of the `BreakAlignment` grob.

The value of `break-align-orders` is a vector of length 3, with quoted lists of breakable items as elements. Each list describes the default order of prefatory matter at the end, in the middle, and at the beginning of a line, respectively. We are only interested in changing the behaviour in the middle of a line.

If you look up the definition of `break-align-orders` in LilyPond's Internal Reference (see the `BreakAlignment` (<https://lilypond.org/doc/v2.22/Documentation/internals/breakalignment>) grob), you get the following order in the second element:

```

...
staff-bar
key-cancellation
key-signature
...

```

We want to change that, moving `key-cancellation` before `staff-bar`. To make this happen we use the `grob-transformer` function, which gives us access to the original vector as the second argument of the lambda function, here called *orig* (we don't need the first argument, *grob*). We return a new vector, with unchanged first and last elements. For the middle element, we first remove `key-cancellation` from the list, then adding it again before `staff-bar`.

```

#(define (insert-before where what lst)
  (cond
    ((null? lst)                ; If the list is empty,
     (list what))              ; return a single-element list.
    ((eq? where (car lst))      ; If we find symbol `where`,
     (cons what lst))          ; insert `what` before curr. position.
    (else                       ; Otherwise keep building the list by
     (cons (car lst)           ; adding the current element and

```

```

; recursing with the next element.
(insert-before where what (cdr lst))))))

cancellationFirst =
\override Score.BreakAlignment.break-align-orders =
#(grob-transformer
  'break-align-orders
  (lambda (grob orig)
    (let* ((middle (vector-ref orig 1))
           (middle (delq 'key-cancellation middle))
           (middle (insert-before
                       'staff-bar 'key-cancellation middle)))
      (vector
        ;; end of line
        (vector-ref orig 0)
        ;; middle of line
        middle
        ;; beginning of line
        (vector-ref orig 2))))))

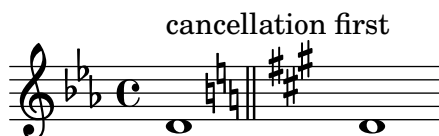
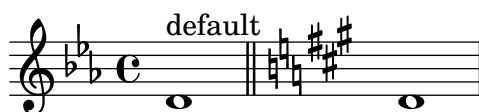
music = { \key es \major d'1 \bar "||"
          \key a \major d'1 }

{ <>^\markup "default"
  \music }

{ <>^\markup "cancellation first"
  \cancellationFirst
  \music }

```

```
\paper { tagline = ##f }
```



## Das Verhalten von Crescendo-Klammern an Taktlinien beeinflussen

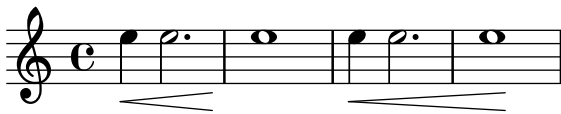
Wenn die Note, an welcher eine Crescendo-Klammer endet, die erste Note eines Taktes ist, wird die Klammer an der vorhergehenden Taktlinie beendet. Dieses Verhalten kann auch mit der Eigenschaft 'to-barline' geändert werden:

```

\relative c' {
  e4\< e2.
  e1\!
  \override Hairpin.to-barline = ##f
  e4\< e2.
  e1\!
}

```

}



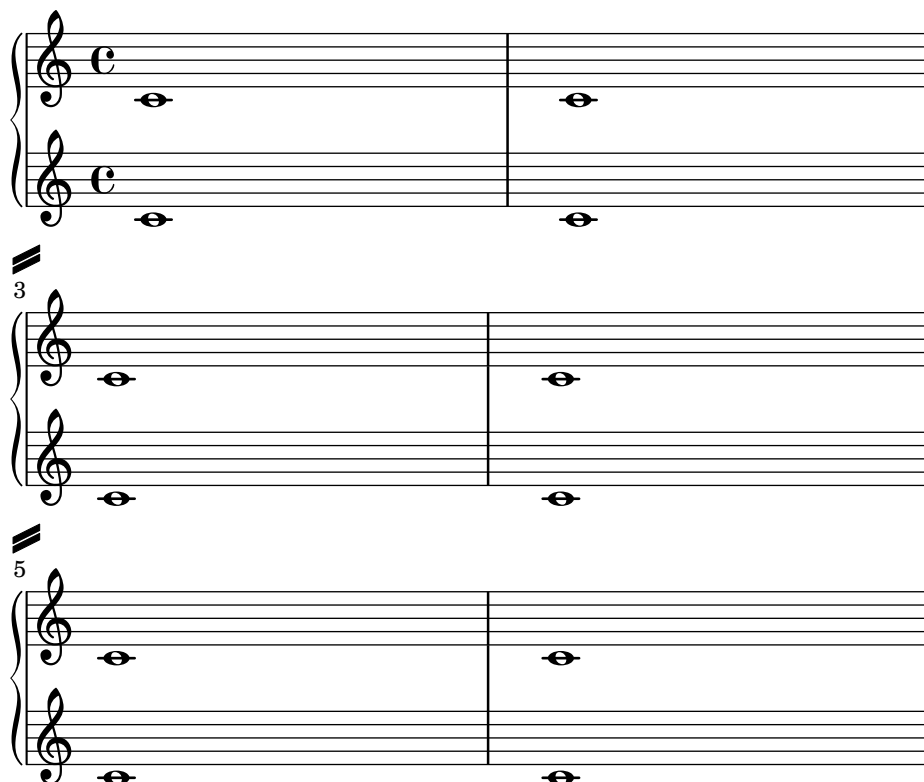
## Setting system separators

System separators can be inserted between systems. Any markup can be used, but `\slashSeparator` has been provided as a sensible default.

```
\paper {
  system-separator-markup = \slashSeparator
  line-width = 120
  tagline = ##f
}

notes = \relative c' {
  c1 | c \break
  c1 | c \break
  c1 | c
}

\book {
  \score {
    \new GrandStaff <<
      \new Staff \notes
      \new Staff \notes
    >>
  }
}
```



## Showing the same articulation above and below a note or chord

By default, LilyPond does not allow the same articulation (e.g., an accent, a fermata, a flageolet, etc.) to be displayed above and below a note. For example, `c4_\fermata^\fermata` only shows a fermata below. The fermata above gets simply ignored.

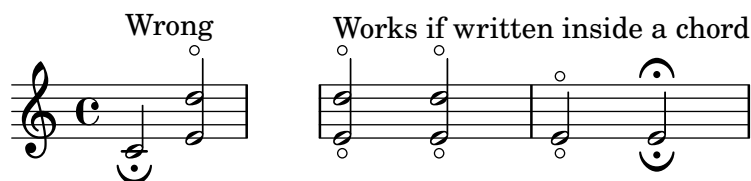
However, one can stick scripts (just like fingerings) inside a chord, which means it is possible to have as many articulations as desired. This approach has the advantage that it ignores the stem and positions the articulation relative to the note head. This can be seen in the case of the flageolets in the snippet. To mimic the behaviour of scripts outside a chord, 'add-stem-support would be required.

The solution is thus to write the note as a chord and add the articulations inside of `<...>`, using the direction modifiers `^` and `_` as appropriate.

```
\relative c' {
  <>^"Wrong"
  c2_\fermata^\fermata % The second fermata is ignored!
  <e d'>2^\flageolet_\flageolet

  \stopStaff s1 \startStaff

  <>^"Works if written inside a chord"
  <e_\flageolet d'^\flageolet>2
  <e_\flageolet d'^\flageolet>2
  <e_\flageolet^\flageolet>2
  <e_\fermata^\fermata>2
}
```



## String number extender lines

Make an extender line for string number indications, showing that a series of notes is supposed to be played all on the same string.

```
stringNumberSpanner =
  #(define-music-function (StringNumber) (string?)
    #{
      \override TextSpanner.style = #'solid
      \override TextSpanner.font-size = #-5
      \override TextSpanner.bound-details.left.stencil-align-dir-y = #CENTER
      \override TextSpanner.bound-details.left.text =
        \markup { \circle \number $StringNumber }
    #})
```

```
\relative c {
  \clef "treble_8"
  \stringNumberSpanner "5"
  \textSpannerDown
  a8\startTextSpan
  b c d e f\stopTextSpan
  \stringNumberSpanner "4"
  g\startTextSpan a
  bes4 a g2\stopTextSpan
}
```



## Suppressing warnings for clashing note columns

If notes from two voices with stems in the same direction are placed at the same position, and both voices have no shift or the same shift specified, the error message ‘warning: ignoring too many clashing note columns’ will appear when compiling the LilyPond file. This message can be suppressed by setting the ‘ignore-collision’ property of the NoteColumn object to #t. Please note that this does not just suppress warnings but stops LilyPond trying to resolve collisions at all and so may have unintended results unless used with care.

```
ignore = \override NoteColumn.ignore-collision = ##t
```

```
\relative c' {
  \new Staff <<
    \new Voice { \ignore \stemDown f2 g }
    \new Voice { c2 \stemDown c, }
  >>
```

}



## Time signature in brackets

The time signature can be enclosed within brackets.

```
\relative c'' {
  \override Staff.TimeSignature.stencil = #(lambda (grob)
    (bracketify-stencil (ly:time-signature::print grob) Y 0.1 0.2 0.1))
  \time 2/4
  a4 b8 c
}
```



## Time signature in parentheses

Enclose the time signature in parentheses.

```
\relative c'' {
  \override Staff.TimeSignature.stencil = #(lambda (grob)
    (parenthesize-stencil (ly:time-signature::print grob) 0.1 0.4 0.4 0.1))
  \time 2/4
  a4 b8 c
}
```



## Time signature printing only the numerator as a number (instead of the fraction)

Sometimes, a time signature should not print the whole fraction (for example, 7/4), but only the numerator (digit 7 in this case). This can be easily done by using `\override Staff.TimeSignature.style = #'single-number` to change the style permanently. By using `\revert Staff.TimeSignature.style`, this setting can be reversed. To apply the single-number style to only one time signature, use the `\override` command and prefix it with a `\once`.

```
\relative c'' {
  \time 3/4
  c4 c c
  % Change the style permanently
  \override Staff.TimeSignature.style = #'single-number
  \time 2/4
  c4 c
  \time 3/4
  c4 c c
  % Revert to default style:
```

```

\revert Staff.TimeSignature.style
\time 2/4
c4 c
% single-number style only for the next time signature
\once \override Staff.TimeSignature.style = #'single-number
\time 5/4
c4 c c c c c
\time 2/4
c4 c
}

```



## Tuplet bracket and change staff

This snippet shows how to set a tuplet starting in a lower staff and finishing in the upper one.

```

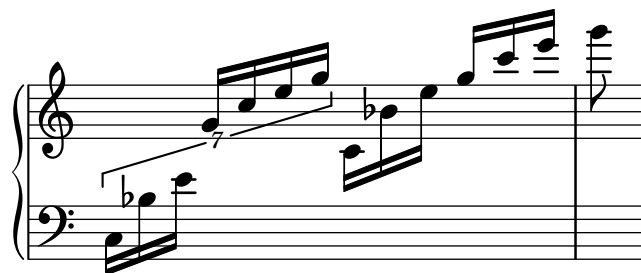
aigues = \relative c' {
  \time 6/8
  s4.
  \stemDown
  c16[ bes' e]
  \stemUp
  g c e
  \stemDown
  g8
}

basses = \relative c {
  \time 3/4
  \clef F
  \tweak positions #'(4.5 . 9.5)
  \tweak edge-height #'(1 . -1)
  \tuplet 7/6 {
    c16[ bes' e]
    \change Staff = md
    \stemUp
    g[ c e g]
  }
  s4.s8
}

\new PianoStaff
\with { \omit TimeSignature }
<<
  \new Staff = md \aigues
  \new Staff = mg \basses
>>

```





## Eigenschaften des Schlüssels optimieren

Der Befehl `\clef "treble_8"` ist gleichbedeutend mit einem expliziten Setzen der Eigenschaften von `clefGlyph`, `clefPosition` (welche die vertikale Position des Schlüssels bestimmt), `middleCPosition` und `clefTransposition`. Ein Schlüssel wird ausgegeben, wenn eine der Eigenschaften außer `middleCPosition` sich ändert.

Eine Änderung des Schriftzeichens (Glyph), der Schlüsselposition oder der Oktavierung selber ändert noch nicht die Position der darauf folgenden Noten auf dem System: das geschieht nur, wenn auch die Position des eingestrichenen C (`middleCPosition`) angegeben wird. Die Positionsparameter sind relativ zur Mittellinie des Systems, dabei versetzen positive Zahlen die Position nach oben, jeweils eine Zahl für jede Linie plus Zwischenraum. Der `clefTransposition`-Wert ist normalerweise auf 7, -7, 15 oder -15 gesetzt, aber auch andere Werte sind gültig.

Wenn ein Schlüsselwechsel an einem Zeilenwechsel geschieht, wird das neue Symbol sowohl am Ende der alten Zeilen als auch am Anfang der neuen Zeile ausgegeben. Wenn der Warnungs-Schlüssel am Ende der alten Zeile nicht erforderlich ist, kann er unterdrückt werden, indem die `explicitClefVisibility`-Eigenschaft des Staff-Kontextes auf den Wert `end-of-line-invisible` gesetzt wird. Das Standardverhalten kann mit `\unset Staff.explicitClefVisibility` wieder hergestellt werden.

Die folgenden Beispiele zeigen die Möglichkeiten, wenn man diese Eigenschaften manuell setzt. Auf der ersten Zeile erhalten die manuellen Änderungen die ursprüngliche relative Positionierung von Schlüssel und Noten, auf der zweiten Zeile nicht.

```
{
% The default treble clef
\key f \major
c'1
% The standard bass clef
\set Staff.clefGlyph = "clefs.F"
\set Staff.clefPosition = 2
\set Staff.middleCPosition = 6
\set Staff.middleCClefPosition = 6
\key g \major
c'1
% The baritone clef
\set Staff.clefGlyph = "clefs.C"
\set Staff.clefPosition = 4
\set Staff.middleCPosition = 4
\set Staff.middleCClefPosition = 4
\key f \major
c'1
% The standard choral tenor clef
\set Staff.clefGlyph = "clefs.G"
\set Staff.clefPosition = -2
\set Staff.clefTransposition = -7
```

```

\set Staff.middleCPosition = 1
\set Staff.middleCClefPosition = 1
\key f \major
c'1
% A non-standard clef
\set Staff.clefPosition = 0
\set Staff.clefTransposition = 0
\set Staff.middleCPosition = -4
\set Staff.middleCClefPosition = -4
\key g \major
c'1 \break

% The following clef changes do not preserve
% the normal relationship between notes, key signatures
% and clefs:

\set Staff.clefGlyph = "clefs.F"
\set Staff.clefPosition = 2
c'1
\set Staff.clefGlyph = "clefs.G"
c'1
\set Staff.clefGlyph = "clefs.C"
c'1
\set Staff.clefTransposition = 7
c'1
\set Staff.clefTransposition = 0
\set Staff.clefPosition = 0
c'1

% Return to the normal clef:

\set Staff.middleCPosition = 0
c'1
}

\paper { tagline = ##f }

```



## Veränderung des Layouts von Verzierungen innerhalb der Noten

Das Layout von Verzierungsausdrücken kann in der Musik verändert werden mit den Funktionen `add-grace-property` und `remove-grace-property`. Das folgende Beispiel definiert die Richtung von Hälzen (Stem) für diese Verzierung, sodass die Hälse nicht immer nach unten zeigen, und ändert den Standardnotenkopf in ein Kreuz.

```

\relative c' {

```

```

\new Staff {
  $(remove-grace-property 'Voice 'Stem 'direction)
  $(add-grace-property 'Voice 'NoteHead 'style 'cross)
  \new Voice {
    \acciaccatura { f16 } g4
    \grace { d16 e } f4
    \appoggiatura { f,32 g a } e2
  }
}

```



## Using alternative flag styles

Alternative styles of flag on eighth and shorter notes can be displayed by overriding the `stencil` property of `Flag`. Valid values are `modern-straight-flag`, `old-straight-flag` and `flat-flag`.

```

testnotes = {
  \autoBeamOff
  c8 d16 c32 d64 \acciaccatura { c8 } d64 r4
}

\score {
  \relative c' {
    \time 2/4
    \testnotes

    \override Flag.stencil = #modern-straight-flag
    \testnotes

    \override Flag.stencil = #old-straight-flag
    \testnotes

    \override Flag.stencil = #flat-flag
    \testnotes

    \revert Flag.stencil
    \testnotes
  }
  \layout {
    indent = 0
    \context {
      \Score
      \override NonMusicalPaperColumn.line-break-permission = ##f
    }
  }
}

```



## Using ly:grob-object to access grobs with \tweak

Some grobs can be accessed “laterally” from within another grob’s callback. These are usually listed as “layout objects” in the “Internal properties” section of a grob-interface. The function ly:grob-object is used to access these grobs.

Demonstrated below are some ways of accessing grobs from within a NoteHead callback, but the technique is not limited to NoteHeads. However, the NoteHead callback is particularly important, since it is the implicit callback used by the \tweak command.

The example function defined below (“display-grobs”) is probably not that useful, but it demonstrates that the grobs are indeed being accessed.

Example console output:

```
#<Grob Accidental >
()
#<Grob Stem >
#(define (notehead-get-accidental notehead)
  ;; notehead is grob
  (ly:grob-object notehead 'accidental-grob))

#(define (notehead-get-arpeggio notehead)
  ;; notehead is grob
  (let ((notecolumn (notehead-get-notecolumn notehead)))
    (ly:grob-object notecolumn 'arpeggio)))

#(define (notehead-get-notecolumn notehead)
  ;; notehead is grob
  (ly:grob-parent notehead X))

#(define (notehead-get-stem notehead)
  ;; notehead is grob
  (let ((notecolumn (notehead-get-notecolumn notehead)))
    (ly:grob-object notecolumn 'stem)))

#(define (display-grobs notehead)
  ;; notehead is grob
  (let ((accidental (notehead-get-accidental notehead))
        (arpeggio (notehead-get-arpeggio notehead))
        (stem (notehead-get-stem notehead)))
    (format (current-error-port) "~2&~a\n" (make-string 20 #\ -))
    (for-each
     (lambda (x) (format (current-error-port) "~a\n" x))
     (list accidental arpeggio stem))))

\relative c' {
  %% display grobs for each note head:
  \%override NoteHead.before-line-breaking = #display-grobs
  <c
  %% or just for one:
  \tweak before-line-breaking #display-grobs
  es
  g>1\arpeggio
}
```



## Using PostScript to generate special note head shapes

When a note head with a special shape cannot easily be generated with graphic markup, PostScript code can be used to generate the shape. This example shows how a parallelogram-shaped note head is generated.

```
%% Updaters remark:
%% For unknown reasons this snippet returns a gs-error, but only, if compiled
%% with multiple others like: lilypond *.ly
%% Thus changing to a path-stencil.
%% TODO description needs to get adjusted --harm
```

```
parallelogram =
  #(ly:make-stencil
    '(path 0.1
      (rmoveto 0 0.25
        lineto 1.3125 0.75
        lineto 1.3125 -0.25
        lineto 0 -0.75)
      round
      round
      #t)
    (cons 0 1.3125)
    (cons -.75 .75))

myNoteHeads = \override NoteHead.stencil = \parallelogram
normalNoteHeads = \revert NoteHead.stencil

\relative c' {
  \myNoteHeads
  g4 d'
  \normalNoteHeads
  <f, \tweak stencil \parallelogram b e>4 d
}
```



## Using the \tweak command to tweak individual grobs

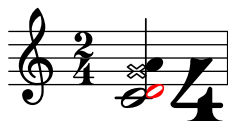
With the \tweak command, every grob can be tuned directly. Here are some examples of available tweaks.

```
\relative c' {
  \time 2/4
  \set fingeringOrientations = #'(right)
  <
    \tweak font-size #3 c
    \tweak color #red d-\tweak font-size #8 -4
```

```

\tweak style #'cross g
\tweak duration-log #2 a
>2
}

```



## Vertikale Ausrichtung von Dynamik und Textbeschriftung beeinflussen

Indem man die 'Y-extent-Eigenschaft auf einen passenden Wert setzt, können alle DynamicLineSpanner-Objekte (Crescendo-Klammern und Dynamik-Texte) (hairpins and dynamic texts) unabhängig von ihrer wirklichen Ausdehnung an einem gemeinsamen Referenzpunkt ausgerichtet werden. Auf diese Weise ist jedes Element vertikal ausgerichtet und der Notensatz sieht ansprechender aus.

Die gleiche Idee wird benutzt, um Textbeschriftungen an ihrer Grundlinie auszurichten.

```

music = \relative c' {
  a'2\p b\f
  e4\p f\f> g, b\p
  c2^\markup { \huge gorgeous } c^\markup { \huge fantastic }
}

{
  \music
  \break
  \override DynamicLineSpanner.staff-padding = 3
  \textLengthOn
  \override TextScript.staff-padding = 1
  \music
}

\paper { tagline = ##f }

```



## Gesangstext und Ossia vertikal ausrichten

Dieser Schnipsel zeigt, wie man die Kontexteigenschaften alignBelowContext und alignAboveContext benutzen kann, um die Positionierung von Gesangstext und Ossia-Abschnitten zu kontrollieren.

```

\relative c' <<
  \new Staff = "1" { c4 c s2 }

```

```

\new Staff = "2" { c4 c s2 }
\new Staff = "3" { c4 c s2 }
{ \skip 2
  <<
    \lyrics {
      \set alignBelowContext = "1"
      lyrics4 below
    }
    \new Staff \with {
      alignAboveContext = "3"
      fontSize = -2
      \override StaffSymbol.staff-space = #(magstep -2)
      \remove "Time_signature_engraver"
    } {
      \tuplet 6/4 {
        \override TextScript.padding = 3
        c8["ossia above" d e d e f]
      }
    }
  >>
}
>>

\paper {
  ragged-right = ##t
}

```



## Vertically centering paired figured bass extenders

Where figured bass extender lines are being used by setting `useBassFigureExtenders` to true, pairs of congruent figured bass extender lines are vertically centered if `figuredBassCenterContinuations` is set to true.

```

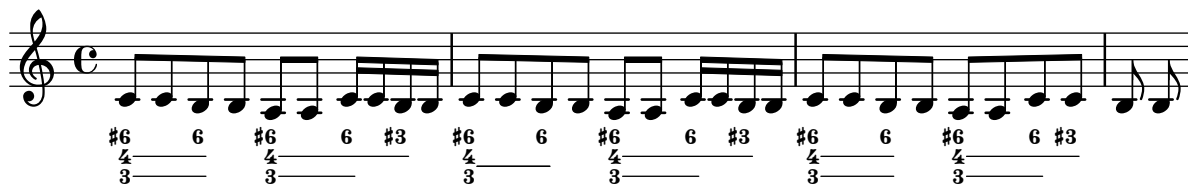
<<
\relative c' {
  c8 c b b a a c16 c b b
  c8 c b b a a c16 c b b
  c8 c b b a a c c b b
}

```

```

\figures {
  \set useBassFigureExtenders = ##t
  <6+ 4 3>4 <6 4 3>8 r
  <6+ 4 3>4 <6 4 3>8 <4 3+>16 r
  \set figuredBassCenterContinuations = ##t
  <6+ 4 3>4 <6 4 3>8 r
  <6+ 4 3>4 <6 4 3>8 <4 3+>16 r
  \set figuredBassCenterContinuations = ##f
  <6+ 4 3>4 <6 4 3>8 r
  <6+ 4 3>4 <6 4 3>8 <4 3+>8
}
>>

```





## Paper and layout

Abschnitt “Spacing issues” in *Notationsreferenz*

### Aligning and centering instrument names

The horizontal alignment of instrument names is tweaked by changing the `Staff.InstrumentName.self-alignment-X` property. The `\layout` variables `indent` and `short-indent` define the space in which the instrument names are aligned before the first and the following systems, respectively.

```
\paper { left-margin = 3\cm }

\score {
  \new StaffGroup <<

    \new Staff \with {
      \override InstrumentName.self-alignment-X = #LEFT
      instrumentName = \markup \left-column {
        "Left aligned"
        "instrument name"
      }
      shortInstrumentName = "Left"
    }

    { c'1 \break c'1 }

    \new Staff \with {
      \override InstrumentName.self-alignment-X = #CENTER
      instrumentName = \markup \center-column {
        Centered
        "instrument name"
      }
      shortInstrumentName = "Centered"
    }

    { g'1 g'1 }

    \new Staff \with {
      \override InstrumentName.self-alignment-X = #RIGHT
      instrumentName = \markup \right-column {
        "Right aligned"
        "instrument name"
      }
      shortInstrumentName = "Right"
    }

    { e'1 e'1 }

  >>

  \layout {
    ragged-right = ##t
```

```

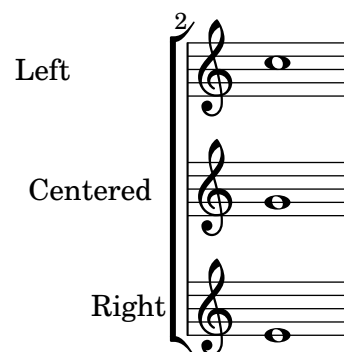
    indent = 4\cm
    short-indent = 2\cm
  }
}

```

Left aligned  
instrument name

Centered  
instrument name

Right aligned  
instrument name



## Arranging separate lyrics on a single line

Sometimes you may want to put lyrics for different performers on a single line: where there is rapidly alternating text, for example. This snippet shows how this can be done with `\override VerticalAxisGroup.nonstaff-nonstaff-spacing.minimum-distance = ##f`.

```

\header { tagline = ##f }

\layout {
  \context {
    \Lyrics
    \override VerticalAxisGroup
      .nonstaff-nonstaff-spacing
      .minimum-distance = ##f
  }
}

aliceSings = \markup { \smallCaps "Alice" }
eveSings = \markup { \smallCaps "Eve" }

<<
\new Staff <<
  \new Voice = "alice" {
    f'4^\aliceSings g' r2 |
    s1 |
    f'4^\aliceSings g' r2 |
    s1 | \break

```

```

% ...

\voiceOne
s2 a'8^\aliceSings a' b'4 |
\oneVoice
g'1
}
\new Voice = "eve" {
s1 |
a'2^\eveSings g' |
s1 |
a'2^\eveSings g'
% ...

\voiceTwo
f'4^\eveSings a'8 g' f'4 e' |
\oneVoice
s1
}
>>
\new Lyrics \lyricsto "alice" {
may -- be
sec -- ond
% ...
Shut up, you fool!
}
\new Lyrics \lyricsto "eve" {
that the
words are
% ...
...and then I was like--
}
>>

```

The musical score consists of three staves. The first staff has four measures: Alice sings 'may-be' (quarter note, quarter rest), Eve sings 'that the' (quarter note, quarter note), Alice sings 'sec-ond' (quarter note, quarter rest), and Eve sings 'words are' (quarter note, quarter note). The second staff has two measures: Eve sings '...and then I' (quarter note, quarter note, quarter note, quarter note) and Alice sings 'Shut up, you fool!' (quarter note, quarter note, quarter note, quarter note). The third staff has one measure: Eve sings '...and then I' (quarter note, quarter note, quarter note, quarter note) and Alice sings 'Shut up, you fool!' (quarter note, quarter note, quarter note, quarter note).

## Book parts

`\bookpart` can be used to split a book into several parts. Each part last page can be affected by `ragged-last-bottom`. Header and footer markups can detect a part last page, and make the difference with the book last page.

```
#(set-default-paper-size "a6")
```

```

\book {
  %% book paper, which is inherited by all children bookparts
  \paper {
    ragged-last-bottom = ##t
    %% Page footer: add a different part-tagline at part last page
    oddFooterMarkup = \markup {
      \column {
        \fill-line {
          %% Copyright header field only on book first page.
          \if \on-first-page \fromproperty #'header:copyright
        }
        \fill-line {
          %% Part tagline header field only on each part last page.
          \if \on-last-page-of-part \fromproperty #'header:parttagline
        }
        \fill-line {
          %% Tagline header field only on book last page.
          \if \on-last-page \fromproperty #'header:tagline
        }
      }
    }
  }
}

%% book header, which is inherited by the first bookpart
\header {
  title = "Book title"
  copyright = "Copyright line on book first page"
  parttagline = "Part tagline"
  tagline = "Book tagline"
}

\bookpart {
  %% a different page breaking function may be used on each part
  \paper { page-breaking = #ly:minimal-breaking }
  \header { subtitle = "First part" }
  \markup { The first book part }
  \markup { a page break }
  \pageBreak
  \markup { first part last page }
  \markup \wordwrap { with ragged-last-bottom (see the space below this text) }
}

\bookpart {
  \header { subtitle = "Second part" }
  { c'4 }
}
}

```

# **Book title**

## **First part**

The first book part

a page break

Copyright line on book first page

2

first part last page  
with ragged-last-bottom (see the space below this  
text)

Part tagline

3

## Book title

### Second part



Part tagline  
Book tagline

## Changing the staff size

Though the simplest way to resize staves is to use  `#(set-global-staff-size xx)`, an individual staff's size can be changed by scaling the properties `'staff-space` and `fontSize`.

```
<<
  \new Staff {
    \relative c'' {
      \dynamicDown
      c8\ff c c c c c c c
    }
  }
  \new Staff \with {
    fontSize = #-3
    \override StaffSymbol.staff-space = #(magstep -3)
  } {
    \clef bass
    c8 c c c c\f c c c
  }
>>
```



## Clip systems

This code shows how to clip (extract) snippets from a full score.

This file needs to be run separately with `-dclip-systems`; the snippets page may not adequately show the results. The result will be files named `'base-from-start-to-end[-count].eps'`.

If system starts and ends are included, they include extents of the System grob, e.g., instrument names.

Grace notes at the end point of the region are not included.

Regions can span multiple systems. In this case, multiple EPS files are generated.

```
#(ly:set-option 'clip-systems)
#(ly:set-option 'separate-page-formats 'ps)
#(define output-suffix "1")

origScore = \score {
  \relative c' {
    \new Staff \with { instrumentName = "Instrument" }
    c1
    d1
    \grace c16 e1
    \key d \major
    f1 \break
    \clef bass
    g,1
    fis1
  }
}

\book {
  \score {
    \origScore
    \layout {
      % Each clip-region is a (START . END) pair
      % where both are rhythmic-locations.

      % (make-rhythmic-locations BAR-NUMBER NUM DEN)
      % means NUM/DEN whole-notes into bar numbered BAR-NUMBER

      clip-regions = #(list
        (cons
          (make-rhythmic-location 2 0 1)
          (make-rhythmic-location 4 0 1))

        (cons
          (make-rhythmic-location 0 0 1)
```



```

      (make-rhythmic-location 4 0 1))

    (cons
      (make-rhythmic-location 0 0 1)
      (make-rhythmic-location 6 0 1))
    )
  }
}

#(ly:set-option 'clip-systems #f)
#(ly:set-option 'separate-page-formats #f)
#(define output-suffix #f)

\book {
  \score { \origScore }
  \markup { \bold \fontsize #6 clips }
  \score {
    \lyrics {
      \markup { from-2.0.1-to-4.0.1-clip.eps }
      \markup {
        \epsfile #X #30.0 #(format #f "~a-1-from-2.0.1-to-4.0.1-clip.eps"
          (ly:parser-output-name)) }
    }
  }
}

```

Instrument

5

## Creating blank staves

To create blank staves, generate empty measures then remove the `Bar_number_engraver` from the `Score` context, and the `Time_signature_engraver`, `Clef_engraver` and `Bar_engraver` from the `Staff` context.

```

#(set-global-staff-size 20)

\score {
  {
    \repeat unfold 12 { s1 \break }
  }
  \layout {
    indent = 0\in
    \context {
      \Staff
      \remove "Time_signature_engraver"
      \remove "Clef_engraver"
      \remove "Bar_engraver"
    }
    \context {
      \Score
      \remove "Bar_number_engraver"
    }
  }
}

% uncomment these lines for "letter" size
%{
\paper {
  #(set-paper-size "letter")
  ragged-last-bottom = ##f
  line-width = 7.5\in
  left-margin = 0.5\in
  bottom-margin = 0.25\in
  top-margin = 0.25\in
}
%}

% uncomment these lines for "A4" size
%{
\paper {
  #(set-paper-size "a4")
  ragged-last-bottom = ##f
  line-width = 180
  left-margin = 15
  bottom-margin = 10
  top-margin = 10
}
%}

```



## Demonstrating all headers

All header fields with special meanings.

```
\header {
  copyright = "copyright"
  title = "title"
  subtitle = "subtitle"
  composer = "composer"
  arranger = "arranger"
  instrument = "instrument"
  meter = "meter"
  opus = "opus"
  piece = "piece"
  poet = "poet"
  texidoc = "All header fields with special meanings."
  copyright = "public domain"
  enteredby = "jcn"
  source = "urtext"
}

\layout {
  ragged-right = ##f
}

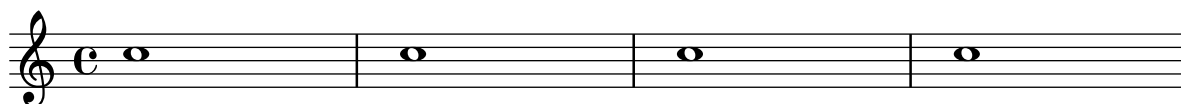
\score {
  \relative c' { c1 | c | c | c }
}
```

```

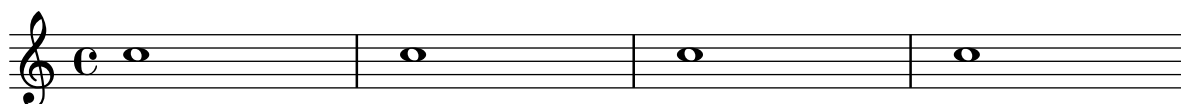
\score {
  \relative c' { c1 | c | c | c }
  \header {
    title = "localtitle"
    subtitle = "localsubtitle"
    composer = "localcomposer"
    arranger = "localarranger"
    instrument = "localinstrument"
    metre = "localmetre"
    opus = "localopus"
    piece = "localpiece"
    poet = "localpoet"
    copyright = "localcopyright"
  }
}

```

	<b>title</b>	
	<b>subtitle</b>	
poet	<b>instrument</b>	composer
meter		arranger
piece		opus



localpiece localopus



## Setting system separators

System separators can be inserted between systems. Any markup can be used, but `\slashSeparator` has been provided as a sensible default.

```

\paper {
  system-separator-markup = \slashSeparator
  line-width = 120
  tagline = ##f
}

```

```

notes = \relative c' {
  c1 | c \break
  c1 | c \break
  c1 | c
}

```

```

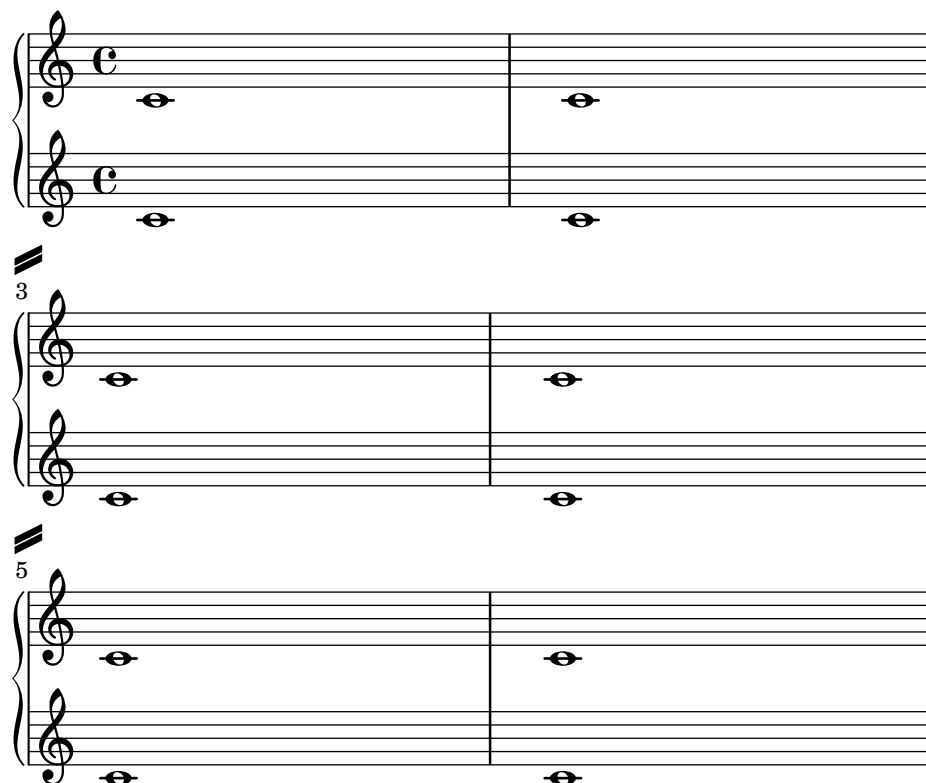
\book {
  \score {

```

```

\new GrandStaff <<
  \new Staff \notes
  \new Staff \notes
>>
}
}

```



## Table of contents

A table of contents is included using `\markuplist \table-of-contents`. The TOC items are added with the `\tocItem` command.

```
#(set-default-paper-size "a6")
```

```

\book {
  \markuplist \table-of-contents
  \pageBreak
  \tocItem \markup { The first score }
  \score {
    {
      c'1 \pageBreak
      \mark \default \tocItem \markup { Mark A }
      d'1
    }
  }
  \pageBreak
  \tocItem \markup { The second score }
  \score {
    { e'1 }
    \header { piece = "Second score" }
  }
}

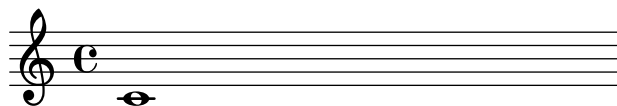
```

}  
}

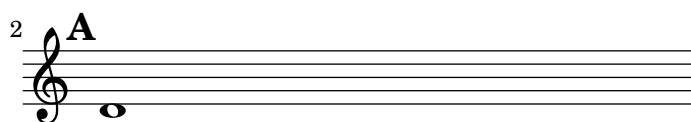
## Table of Contents

<b>The first score</b>	<b>2</b>
<b>Mark A</b>	<b>3</b>
<b>The second score</b>	<b>4</b>

2



3



4

Second score



Music engraving by LilyPond 2.25.12—[www.lilypond.org](http://www.lilypond.org)

## Vertically aligned StaffGroups without connecting SystemStartBar

This snippet shows how to achieve vertically aligned StaffGroups with a SystemStartBar for each StaffGroup, but without connecting them.

```
#(set-global-staff-size 18)
```

```
\header { tagline = ##f }
```

```
\paper {
  indent = 0
  ragged-right = ##f
  print-all-headers = ##t
}
```

```
\layout {
  \context {
    \StaffGroup
    \consists Text_mark_engraver
    \consists Staff_collecting_engraver
    systemStartDelimiterHierarchy =
```



```

    #'(SystemStartBrace (SystemStartBracket a b))
  }

\context {
  \Score
  \remove Text_mark_engraver
  \remove Staff_collecting_engraver
  \override SystemStartBrace.style = #'bar-line
  \omit SystemStartBar
  \override SystemStartBrace.padding = #-0.1
  \override SystemStartBrace.thickness = #1.6
  \override StaffGrouper.staffgroup-staff-spacing.basic-distance = #15
}
}

%%% EXAMPLE

txt =
\lyricmode {
  Wer4 nur den lie -- ben Gott läßt wal2 -- ten4
  und4 hof -- fet auf ihn al -- le Zeit2.
}

% First StaffGroup "exercise"

eI =
\relative c' {
  \textMark \markup {
    \bold Teacher:
    This is a simple setting of the choral. Please improve it.
  }
  \key a \minor
  \time 4/4
  \voiceOne

  \partial 4
  e4
  a b c b
  a b gis2
  e4\fermata g! g f
  e a a gis
  a2.\fermata
  \bar ":|."
}

eII =
\relative c' {
  \key a \minor
  \time 4/4
  \voiceTwo
  \partial 4
  c4

```

```

e e e gis
a f e2
b4 b d d
c c d d
c2.
\bar " : | . "
}

eIII =
\relative c' {
  \key a \minor
  \time 4/4
  \clef bass
  \voiceOne

  \partial 4
  a4
  c b a b
  c d b2
  gis4 g g b
  c a f e
  e2.
}

eIV =
\relative c' {
  \key a \minor
  \time 4/4
  \clef bass
  \voiceTwo

  \partial 4
  a,4
  a' gis a e
  a, d e2
  e,4\fermata e' b g
  c f d e
  a,2.\fermata
  \bar " : | . "
}

exercise =
\new StaffGroup = "exercise"
<<

\new Staff
<<
  \new Voice \eI
  \new Voice \eII
>>

\new Lyrics \txt

```

```

\new Staff
  <<
    \new Voice \eIII
    \new Voice \eIV
  >>
>>

% Second StaffGroup "simple Bach"

sbI =
\relative c' {
  \textMark \markup { \bold" Pupil:" Here's my version! }
  \key a \minor
  \time 4/4
  \voiceOne

  \partial 4
  e4
  a b c b
  a b gis2
  e4\fermata g! g f
  e a a gis
  a2.\fermata
  \bar ":|."
}

sbII =
\relative c' {
  \key a \minor
  \time 4/4
  \voiceTwo
  \partial 4
  c8 d
  e4 e e8 f g4
  f f e2
  b4 b8 c d4 d
  e8 d c4 b8 c d4
  c2.
  \bar ":|."
}

sbIII =
\relative c' {
  \key a \minor
  \time 4/4
  \clef bass
  \voiceOne

  \partial 4
  a8 b
  c4 b a b8 c

```

```

    d4 d8 c b2
    gis4 g g8 a b4
    b a8 g f4 e
    e2.
}

sbIV =
\relative c' {
  \key a \minor
  \time 4/4
  \clef bass
  \voiceTwo

  \partial 4
  a,4
  a' gis a e
  f8 e d4 e2
  e,4\fermata e' b a8 g
  c4 f8 e d4 e
  a,2.\fermata
  \bar ":|."
}

simpleBach =
\new StaffGroup = "simple Bach"
<<

  \new Staff
  <<
    \new Voice \sbI
    \new Voice \sbII
  >>

  \new Lyrics \txt

  \new Staff
  <<
    \new Voice \sbIII
    \new Voice \sbIV
  >>
>>

% Third StaffGroup "chromatic Bach"

cbI =
\relative c' {
  \textMark \markup {
    \bold "Teacher:"
    \column {
      "Well, you simply copied and transposed a version of J.S.Bach."
      "Do you know this one?"
    }
  }
}
```

```

}
\key a \minor
\time 4/4
\voiceOne

\partial 4
e4
a b c b
a b gis4. fis8
e4\fermata g! g f
e a a8 b gis4
a2.\fermata
\bar " : | ."
}

cbII =
\relative c' {
  \key a \minor
  \time 4/4
  \voiceTwo
  \partial 4
  c8 d
  e4 e e8 fis gis4
  a8 g! f!4 e2
  b4 e e d
  d8[ cis] d dis e fis e4
  e2.
  \bar " : | ."
}

cbIII =
\relative c' {
  \key a \minor
  \time 4/4
  \clef bass
  \voiceOne

  \partial 4
  a8 b
  c[ b] a gis8 a4 d,
  e8[ e'] d c b4. a8
  gis4 b c d8 c
  b[ a] a b c b b c16 d
  c2.
}

cbIV =
\relative c' {
  \key a \minor
  \time 4/4
  \clef bass
  \voiceTwo

```

```

\partial 4
a4
c, e a, b
c d e2
e4\fermata e a b8 c
gis[ g] fis f e dis e4
a,2.\fermata
\bar " : | ."
}

chromaticBach =
\new StaffGroup = "chromatic Bach"
<<

\new Staff
<<
  \new Voice \cbI
  \new Voice \cbII
>>

\new Lyrics \txt

\new Staff
<<
  \new Voice \cbIII
  \new Voice \cbIV
>>
>>

% Score

\score {
  <<
    \exercise
    \simpleBach
    \chromaticBach
  >>

  \header {
    title = \markup
      \column {
        \combine \null \vspace #1
        "Exercise: Improve the given choral"
        " "
      }
  }
}

\layout {
  \context {
    \Lyrics
    \override LyricText.X-offset = #-1

```

}

}

}

## Exercise: Improve the given choral

**Teacher:** This is a simple setting of the choral. Please improve it.

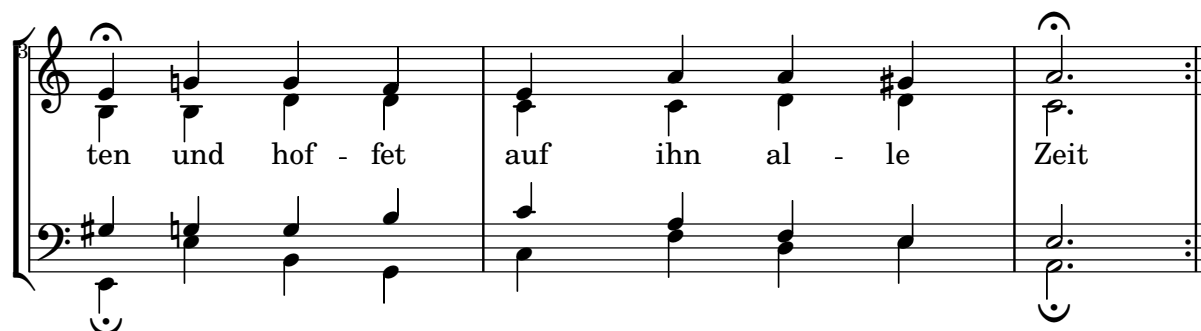
Musical score for the Teacher's simple setting of the choral. The score is in C major, 4/4 time, and consists of two staves (treble and bass). The lyrics are: "Wer nur den lieben Gott läßt wal -". The melody is simple, with the treble staff playing the main melody and the bass staff providing a simple harmonic accompaniment.

**Pupil:** Here's my version!

Musical score for the Pupil's version of the choral. The score is in C major, 4/4 time, and consists of two staves (treble and bass). The lyrics are: "Wer nur den lieben Gott läßt wal -". The melody is more complex than the Teacher's version, with the treble staff playing a more active melody and the bass staff providing a more complex harmonic accompaniment.

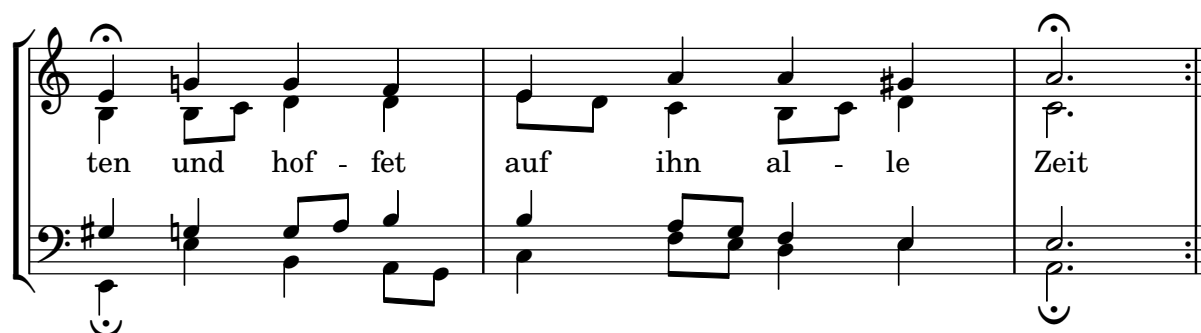
**Teacher:** Well, you simply copied and transposed a version of J.S.Bach.  
Do you know this one?

Musical score for the Teacher's version of the choral, which is a transcription of J.S. Bach's setting. The score is in C major, 4/4 time, and consists of two staves (treble and bass). The lyrics are: "Wer nur den lieben Gott läßt wal -". The melody is more complex than the Pupil's version, with the treble staff playing a more active melody and the bass staff providing a more complex harmonic accompaniment.



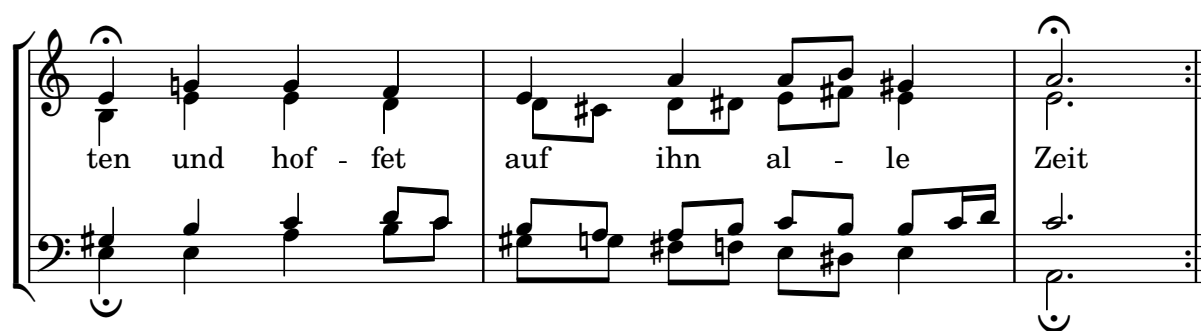
ten und hof - fet auf ihn al - le Zeit

This system shows a musical score with a treble and bass staff. The treble staff has a key signature of one sharp (F#) and a common time signature (C). The melody consists of quarter notes: G4 (ten), Bb4 (und), D5 (hof), E5 (fet), G4 (auf), A4 (ihn), B4 (al), and C#5 (le). The bass staff provides a harmonic accompaniment with chords. The system concludes with a double bar line and repeat dots.



ten und hof - fet auf ihn al - le Zeit

This system continues the musical score. The treble staff melody is identical to the first system. The bass staff accompaniment features more movement, including eighth and sixteenth notes, particularly in the second measure. The system concludes with a double bar line and repeat dots.



ten und hof - fet auf ihn al - le Zeit

This system continues the musical score. The treble staff melody is identical to the first system. The bass staff accompaniment is more active, featuring sixteenth and thirty-second notes. The system concludes with a double bar line and repeat dots.



## Titles

Abschnitt “Titles and headers” in *Notationsreferenz*

### Adding the current date to a score

With a little Scheme code, the current date can easily be added to a score.

```
\paper { tagline = ##f }

% first, define a variable to hold the formatted date:
date = #(strftime "%d-%m-%Y" (localtime (current-time)))

% use it in the title block:
\header {
  title = "Including the date!"
  subtitle = \date
}

\score {
  \relative c' {
    c4 c c c
  }
}

% and use it in a \markup block:
\markup {
  \date
}
```

### Including the date!

**07-01-2024**



07-01-2024

### Aligning and centering instrument names

The horizontal alignment of instrument names is tweaked by changing the `Staff.InstrumentName.self-alignment-X` property. The `\layout` variables `indent` and `short-indent` define the space in which the instrument names are aligned before the first and the following systems, respectively.

```
\paper { left-margin = 3\cm }

\score {
  \new StaffGroup <<

    \new Staff \with {
      \override InstrumentName.self-alignment-X = #LEFT
      instrumentName = \markup \left-column {
        "Left aligned"
        "instrument name"
      }
    }
}
```

```

    }
    shortInstrumentName = "Left"
  }

  { c''1 \break c''1 }

\new Staff \with {
  \override InstrumentName.self-alignment-X = #CENTER
  instrumentName = \markup \center-column {
    Centered
    "instrument name"
  }
  shortInstrumentName = "Centered"
}

{ g'1 g'1}

\new Staff \with {
  \override InstrumentName.self-alignment-X = #RIGHT
  instrumentName = \markup \right-column {
    "Right aligned"
    "instrument name"
  }
  shortInstrumentName = "Right"
}

{ e'1 e'1 }

>>


\layout {
  ragged-right = ##t
  indent = 4\cm
  short-indent = 2\cm
}

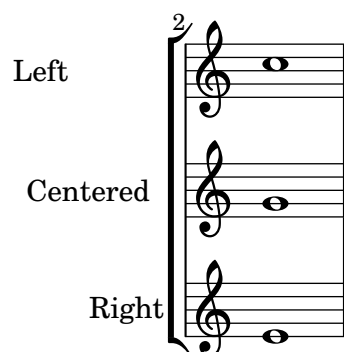
```

Left aligned  
instrument name

Centered  
instrument name

Right aligned  
instrument name





## Demonstrating all headers

All header fields with special meanings.

```
\header {
  copyright = "copyright"
  title = "title"
  subtitle = "subtitle"
  composer = "composer"
  arranger = "arranger"
  instrument = "instrument"
  meter = "meter"
  opus = "opus"
  piece = "piece"
  poet = "poet"
  texidoc = "All header fields with special meanings."
  copyright = "public domain"
  enteredby = "jcn"
  source = "urtext"
}

\layout {
  ragged-right = ##f
}

\score {
  \relative c'' { c1 | c | c | c }
}

\score {
  \relative c'' { c1 | c | c | c }
  \header {
    title = "localtitle"
    subtitle = "localsubtitle"
    composer = "localcomposer"
    arranger = "localarranger"
    instrument = "localinstrument"
    metre = "localmetre"
    opus = "localopus"
    piece = "localpiece"
    poet = "localpoet"
    copyright = "localcopyright"
  }
}
```

```

    }
}

```

	<b>title</b>	
	<b>subtitle</b>	
poet	<b>instrument</b>	composer
meter		arranger
piece		opus



localpiece

localopus



## Outputting the version number

It is possible to print the version number of LilyPond in markup.

```
\markup { Processed with LilyPond version #(lilypond-version) }
```

Processed with LilyPond version 2.25.12

## Spacing

Abschnitt “Spacing issues” in *Notationsreferenz*

### Adjusting lyrics vertical spacing

This snippet shows how to bring the lyrics line closer to the staff.

*% Default layout:*

```
<<
\new Staff \new Voice = melody \relative c' {
  c4 d e f
  g4 f e d
  c1
}
\new Lyrics \lyricsto melody { aa aa aa aa aa aa aa aa aa }

\new Staff {
  \new Voice = melody \relative c' {
    c4 d e f
    g4 f e d
    c1
  }
}
% Reducing the minimum space below the staff and above the lyrics:
\new Lyrics \with {
  \override VerticalAxisGroup.nonstaff-relatedstaff-spacing =
    #'((basic-distance . 1))
}
\lyricsto melody { aa aa aa aa aa aa aa aa aa }
>>
```



### Fingersatz auch innerhalb des Systems setzen

Normalerweise werden vertikal orientierte Fingersatzzahlen außerhalb des Systems gesetzt. Das kann aber verändert werden.

```
\relative c' {
  <c-1 e-2 g-3 b-5>2
  \override Fingering.staff-padding = #'()
  <c-1 e-2 g-3 b-5>4 g'-0
  a8[-1 b]-2 g-0 r
  \override Fingering.add-stem-support = ##f
  a[-1 b]-2 g-0 r
  \override Fingering.add-stem-support = ##t
  a[-1 b]-2 g-0 r
```

```
\override Fingering.add-stem-support = #only-if-beamed
a[-1 b]-2 g-0 r
}
```



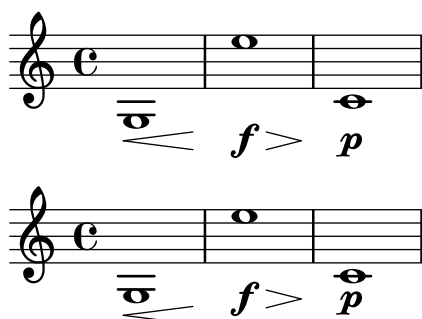
## Breaking vertical alignment of dynamics and textscripts

By default, LilyPond uses `DynamicLineSpanner` grobs to vertically align successive dynamic objects like hairpins and dynamic text. However, this is not always wanted. By inserting `\breakDynamicSpan`, which ends the alignment spanner prematurely, this vertical alignment can be avoided.

```
{ g1\< |
  e''\f\> |
  c'\p }

{ g1\< |
  e''\breakDynamicSpan\f\> |
  c'\p }
```

```
\paper { tagline = ##f }
```



## Page label

Page labels may be placed inside music or at top-level, and referred to in markups.

```
\label license
\markup "This snippet is available under the Creative Commons
Public Domain Dedication license."
```

```
{
  \repeat volta 2 {
    \label startRepeat
    \repeat unfold 20 { c'2 2 }
    \pageBreak
    2 2
  }
  \textEndMark \markup {
    \with-link #'startRepeat \line {
      To page \page-ref #'startRepeat "0" "?"
    }
  }
}
```

```

    }
  }
}

\markup {
  See page \page-ref #'license "0" "?" for
  licensing information.
}

```

This snippet is available under the Creative Commons Public Domain Dedication license.

5

9

13

17

21 To page ?

See page ? for licensing information.

## Proportional strict notespacing

If strict-note-spacing is set spacing of notes is not influenced by bars or clefs within a system. Rather, they are placed just before the note that occurs at the same time. This may cause collisions.

```

\relative c' ' <<
  \override Score.SpacingSpanner.strict-note-spacing = ##t
  \set Score.proportionalNotationDuration = \musicLength 16
  \new Staff {
    c8[ c \clef alto c c \grace { d16 } c8 c] c4
    c2 \grace { c16[ c16] } c2
  }
  \new Staff {
    c2 \tuplet 3/2 { c8 \clef bass cis,, c } c4
    c1
  }
>>

```



## Vertikale Ausrichtung von Dynamik und Textbeschriftung beeinflussen

Indem man die 'Y-extent-Eigenschaft auf einen passenden Wert setzt, können alle `DynamicLineSpanner`-Objekte (Crescendo-Klammern und Dynamik-Texte) (hairpins and dynamic texts) unabhängig von ihrer wirklichen Ausdehnung an einem gemeinsamen Referenzpunkt ausgerichtet werden. Auf diese Weise ist jedes Element vertikal ausgerichtet und der Notensatz sieht ansprechender aus.

Die gleiche Idee wird benutzt, um Textbeschriftungen an ihrer Grundlinie auszurichten.

```
music = \relative c' {
  a'2\p b\f
  e4\p f\f\> g, b\p
  c2^\markup { \huge gorgeous } c^\markup { \huge fantastic }
}

{
  \music
  \break
  \override DynamicLineSpanner.staff-padding = 3
  \textLengthOn
  \override TextScript.staff-padding = 1
  \music
}
```

\paper { tagline = ##f }



## Gesangstext und Ossia vertikal ausrichten

Dieser Schnipsel zeigt, wie man die Kontexteigenschaften `alignBelowContext` und `alignAboveContext` benutzen kann, um die Positionierung von Gesangstext und Ossia-Abschnitten zu kontrollieren.

```
\relative c' <<
  \new Staff = "1" { c4 c s2 }
```



```

\new Staff = "2" { c4 c s2 }
\new Staff = "3" { c4 c s2 }
{ \skip 2
  <<
    \lyrics {
      \set alignBelowContext = "1"
      lyrics4 below
    }
    \new Staff \with {
      alignAboveContext = "3"
      fontSize = -2
      \override StaffSymbol.staff-space = #(magstep -2)
      \remove "Time_signature_engraver"
    } {
      \tuplet 6/4 {
        \override TextScript.padding = 3
        c8["ossia above" d e d e f]
      }
    }
  >>
}
>>

\paper {
  ragged-right = ##t
}

```



## MIDI

Abschnitt “Creating MIDI output” in *Notationsreferenz*

### Changing MIDI output to one channel per voice

When outputting MIDI, the default behavior is for each staff to represent one MIDI channel, with all the voices on a staff amalgamated. This minimizes the risk of running out of MIDI channels, since there are only 16 available per track.

However, by moving the `Staff_performer` to the `Voice` context, each voice on a staff can have its own MIDI channel, as is demonstrated by the following example: despite being on the same staff, two MIDI channels are created, each with a different `midiInstrument`.

```
\score {
  \new Staff <<
    \new Voice \relative c''' {
      \set midiInstrument = "flute"
      \voiceOne
      \key g \major
      \time 2/2
      r2 g-"Flute" ~
      g fis ~
      fis4 g8 fis e2 ~
      e4 d8 cis d2
    }
    \new Voice \relative c'' {
      \set midiInstrument = "clarinet"
      \voiceTwo
      b1-"Clarinet"
      a2. b8 a
      g2. fis8 e
      fis2 r
    }
  >>
  \layout { }
  \midi {
    \context {
      \Staff
      \remove "Staff_performer"
    }
    \context {
      \Voice
      \consists "Staff_performer"
    }
  }
  \tempo 2 = 72
}
```



## Das Tempo ohne Metronom-Angabe verändern

Um das Tempo für die MIDI-Ausgabe zu ändern, ohne eine Tempoangabe in den Noten auszugeben, kann die Metronombezeichnung unsichtbar gemacht werden:

```
\score {
  \new Staff \relative c' {
    \tempo 4 = 160
    c4 e g b
    c4 b d c
    \set Score.tempoHideNote = ##t
    \tempo 4 = 96
    d,4 fis a cis
    d4 cis e d
  }
  \layout { }
  \midi { }
}
```



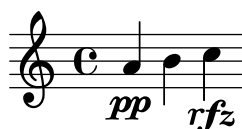
## Creating custom dynamics in MIDI output

The following example shows how to create a dynamic marking, not included in the default list, and assign a specific value to it so that it affects MIDI output.

The dynamic mark `\rfz` gets value 0.9.

```
#(define (myDynamics dynamic)
  (if (equal? dynamic "rfz")
    0.9
    (default-dynamic-absolute-volume dynamic)))

\score {
  \new Staff {
    \set Staff.midiInstrument = "cello"
    \set Score.dynamicAbsoluteVolumeFunction = #myDynamics
    \new Voice {
      \relative {
        a'4\pp b c-\rfz
      }
    }
  }
  \layout {}
  \midi {}
}
```



## Customized drum notation in printed and MIDI output

Customized drum „pitch“ names (suitable for a custom drum style, for example) may be used both in printed and MIDI output by defining such variables as `drumPitchNames`, `drumStyleTable` and `midiDrumPitches`, as demonstrated here.

In short, this snippet

- defines some "pitch" names,
- defines how they will be rendered,
- tells LilyPond to use them for layout,
- assigns pitches to the names, and
- tells LilyPond to use them for MIDI output.

```
%% This snippet tries to amend
%% NR 2.5.1 Common notation for percussion - Custom percussion staves
%% http://lilypond.org/doc/v2.24/Documentation/notation/common-notation-for-percussion#cust

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%
%% To use custom drum pitch names for your score and midi you need to follow
%% this route:
%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% LAYOUT:
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%
%% (1) Define a name and put it in `drumPitchNames'
%%     This can be done at toplevel with
%%         drumPitchNames.my-name = #'my-name
%%     It's possible to add an alias as well.
%% (2) Define how it should be printed
%%     Therefore put them into a top-level list, where each entry should
%%     be of the form:
%%         (my-name
%%          note-head-style-or-default
%%          articulation-type-or-#f
%%          staff-position)
%% Example:
%%         #(define my-style
%%           '(
%%             (my-name default tenuto -1)
%%             ; ...
%%           ))
%% (3) Tell LilyPond to use these custom definitions, with
%%         drumStyleTable = #(alist->hash-table my-style)
%%     in a \layout or \with block
%%
%% Now we're done for layout. Here is a short but complete example:
%%     \new DrumStaff
%%       \with { drumStyleTable = #(alist->hash-table my-style) }
%%       \drummode { my-name }
```

```

%% MIDI:
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%
%% (1) Again at top-level, assign a pitch to your custom note name
%%      midiDrumPitches.my-name = ges
%%      Note that you have to use the name, which is in drumPitchNames, no alias
%% (2) Tell LilyPond to use this pitch(es), with
%%      drumPitchTable = #(alist->hash-table midiDrumPitches)
%%
%% Example:
%%      \score {
%%        \new DrumStaff
%%        \with {
%%          drumStyleTable = #(alist->hash-table my-style)
%%          drumPitchTable = #(alist->hash-table midiDrumPitches)
%%        }
%%        \drummode { my-name4 }
%%        \layout {}
%%        \midi {}
%%      }
%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% TESTING
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%
%% To test whether all is fine, run the following sequence in terminal:
%%      lilypond my-file.ly
%%      midi2ly my-file.midi
%%      gedit my-file-midi.ly
%%
%% This will do the following:
%% 1. create pdf and midi
%% 2. transform the midi back to a .ly-file
%%    (note: midi2ly is not always good in correctly identifying enharmonic pitches)
%% 3. open this file in gedit (or use another editor)
%% Now watch what you've got.
%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% FULL EXAMPLE
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

drumPitchNames.dbass      = #'dbass
drumPitchNames.dba       = #'dbass  % 'db is in use already
drumPitchNames.dbassmute = #'dbassmute
drumPitchNames.dbm       = #'dbassmute
drumPitchNames.do        = #'dopen
drumPitchNames.dopenmute = #'dopenmute
drumPitchNames.dom       = #'dopenmute
drumPitchNames.dslap     = #'dslap
drumPitchNames.ds        = #'dslap

```

```

drumPitchNames.dslapmute = #'dslapmute
drumPitchNames.dsm       = #'dslapmute

#(define djembe
  '((dbass      default  #f          -2)
    (dbassmute  default  stopped     -2)
    (dopen      default  #f          0)
    (dopenmute  default  stopped     0)
    (dslap      default  #f          2)
    (dslapmute  default  stopped     2)))

midiDrumPitches.dbass = g
midiDrumPitches.dbassmute = fis
midiDrumPitches.dopen = a
midiDrumPitches.dopenmute = gis
midiDrumPitches.dslap = b
midiDrumPitches.dslapmute = ais

one = \drummode { r4 dba4 do ds r dbm dom dsm }

\score {
  \new DrumStaff
  \with {
    \override StaffSymbol.line-count = #3
    instrumentName = #"Djembe "
    drumStyleTable = #(alist->hash-table djembe)
    drumPitchTable = #(alist->hash-table midiDrumPitches)
  }
  \one
  \layout {}
  \midi {}
}

```



## Demo MidiInstruments

Problem: How to know which midiInstrument would be best for your composition?

Solution: A LilyPond demo file.

```

\header {
  title = "Demo of all midi sounds"
  arranger = "Myself "
}

baseMelody = \relative c' {
  c4.\mf g c16 b' c d
  e16 d e f g4 g'4 r
  R1
}

melody = {

```

```

\tempo 4 = 150
\baseMelody
}

\score {
  \new Staff <<
    \new Voice \melody
  >>
  \layout { }
}

\score {
  \new Staff <<
    \new Voice {
      r\mf
      \set Staff.midiInstrument = "acoustic grand" \melody
      \set Staff.midiInstrument = "bright acoustic" \melody
      \set Staff.midiInstrument = "electric grand" \melody
      \set Staff.midiInstrument = "honky-tonk" \melody
      \set Staff.midiInstrument = "electric piano 1" \melody
      \set Staff.midiInstrument = "electric piano 2" \melody
      \set Staff.midiInstrument = "harpsichord" \melody
      \set Staff.midiInstrument = "clav" \melody
      \set Staff.midiInstrument = "celesta" \melody
      \set Staff.midiInstrument = "glockenspiel" \melody
      \set Staff.midiInstrument = "music box" \melody
      \set Staff.midiInstrument = "vibraphone" \melody
      \set Staff.midiInstrument = "marimba" \melody
      \set Staff.midiInstrument = "xylophone" \melody
      \set Staff.midiInstrument = "tubular bells" \melody
      \set Staff.midiInstrument = "dulcimer" \melody
      \set Staff.midiInstrument = "drawbar organ" \melody
      \set Staff.midiInstrument = "percussive organ" \melody
      \set Staff.midiInstrument = "rock organ" \melody
      \set Staff.midiInstrument = "church organ" \melody
      \set Staff.midiInstrument = "reed organ" \melody
      \set Staff.midiInstrument = "accordion" \melody
      \set Staff.midiInstrument = "harmonica" \melody
      \set Staff.midiInstrument = "concertina" \melody
      \set Staff.midiInstrument = "acoustic guitar (nylon)" \melody
      \set Staff.midiInstrument = "acoustic guitar (steel)" \melody
      \set Staff.midiInstrument = "electric guitar (jazz)" \melody
      \set Staff.midiInstrument = "electric guitar (clean)" \melody
      \set Staff.midiInstrument = "electric guitar (muted)" \melody
      \set Staff.midiInstrument = "overdriven guitar" \melody
      \set Staff.midiInstrument = "distorted guitar" \melody
      \set Staff.midiInstrument = "acoustic bass" \melody
      \set Staff.midiInstrument = "electric bass (finger)" \melody
      \set Staff.midiInstrument = "electric bass (pick)" \melody
      \set Staff.midiInstrument = "fretless bass" \melody
      \set Staff.midiInstrument = "slap bass 1" \melody
      \set Staff.midiInstrument = "slap bass 2" \melody
    }
  >>
}

```

```
\set Staff.midiInstrument = "synth bass 1" \melody
\set Staff.midiInstrument = "synth bass 2" \melody
\set Staff.midiInstrument = "violin" \melody
\set Staff.midiInstrument = "viola" \melody
\set Staff.midiInstrument = "cello" \melody
\set Staff.midiInstrument = "contrabass" \melody
\set Staff.midiInstrument = "tremolo strings" \melody
\set Staff.midiInstrument = "pizzicato strings" \melody
\set Staff.midiInstrument = "orchestral harp" \melody
\set Staff.midiInstrument = "timpani" \melody
\set Staff.midiInstrument = "string ensemble 1" \melody
\set Staff.midiInstrument = "string ensemble 2" \melody
\set Staff.midiInstrument = "synthstrings 1" \melody
\set Staff.midiInstrument = "synthstrings 2" \melody
\set Staff.midiInstrument = "choir aaahs" \melody
\set Staff.midiInstrument = "voice oohs" \melody
\set Staff.midiInstrument = "synth voice" \melody
\set Staff.midiInstrument = "orchestra hit" \melody
\set Staff.midiInstrument = "trumpet" \melody
\set Staff.midiInstrument = "trombone" \melody
\set Staff.midiInstrument = "tuba" \melody
\set Staff.midiInstrument = "muted trumpet" \melody
\set Staff.midiInstrument = "french horn" \melody
\set Staff.midiInstrument = "brass section" \melody
\set Staff.midiInstrument = "synthbrass 1" \melody
\set Staff.midiInstrument = "synthbrass 2" \melody
\set Staff.midiInstrument = "soprano sax" \melody
\set Staff.midiInstrument = "alto sax" \melody
\set Staff.midiInstrument = "tenor sax" \melody
\set Staff.midiInstrument = "baritone sax" \melody
\set Staff.midiInstrument = "oboe" \melody
\set Staff.midiInstrument = "english horn" \melody
\set Staff.midiInstrument = "bassoon" \melody
\set Staff.midiInstrument = "clarinet" \melody
\set Staff.midiInstrument = "piccolo" \melody
\set Staff.midiInstrument = "flute" \melody
\set Staff.midiInstrument = "recorder" \melody
\set Staff.midiInstrument = "pan flute" \melody
\set Staff.midiInstrument = "blown bottle" \melody
\set Staff.midiInstrument = "shakuhachi" \melody
\set Staff.midiInstrument = "whistle" \melody
\set Staff.midiInstrument = "ocarina" \melody
\set Staff.midiInstrument = "lead 1 (square)" \melody
\set Staff.midiInstrument = "lead 2 (sawtooth)" \melody
\set Staff.midiInstrument = "lead 3 (calliope)" \melody
\set Staff.midiInstrument = "lead 4 (chiff)" \melody
\set Staff.midiInstrument = "lead 5 (charang)" \melody
\set Staff.midiInstrument = "lead 6 (voice)" \melody
\set Staff.midiInstrument = "lead 7 (fifths)" \melody
\set Staff.midiInstrument = "lead 8 (bass+lead)" \melody
\set Staff.midiInstrument = "pad 1 (new age)" \melody
\set Staff.midiInstrument = "pad 2 (warm)" \melody
```



```

\set Staff.midiInstrument = "pad 3 (polysynth)" \melody
\set Staff.midiInstrument = "pad 4 (choir)" \melody
\set Staff.midiInstrument = "pad 5 (bowed)" \melody
\set Staff.midiInstrument = "pad 6 (metallic)" \melody
\set Staff.midiInstrument = "pad 7 (halo)" \melody
\set Staff.midiInstrument = "pad 8 (sweep)" \melody
\set Staff.midiInstrument = "fx 1 (rain)" \melody
\set Staff.midiInstrument = "fx 2 (soundtrack)" \melody
\set Staff.midiInstrument = "fx 3 (crystal)" \melody
\set Staff.midiInstrument = "fx 4 (atmosphere)" \melody
\set Staff.midiInstrument = "fx 5 (brightness)" \melody
\set Staff.midiInstrument = "fx 6 (goblins)" \melody
\set Staff.midiInstrument = "fx 7 (echoes)" \melody
\set Staff.midiInstrument = "fx 8 (sci-fi)" \melody
\set Staff.midiInstrument = "sitar" \melody
\set Staff.midiInstrument = "banjo" \melody
\set Staff.midiInstrument = "shamisen" \melody
\set Staff.midiInstrument = "koto" \melody
\set Staff.midiInstrument = "kalimba" \melody
\set Staff.midiInstrument = "bagpipe" \melody
\set Staff.midiInstrument = "fiddle" \melody
\set Staff.midiInstrument = "shanai" \melody
\set Staff.midiInstrument = "tinkle bell" \melody
\set Staff.midiInstrument = "agogo" \melody
\set Staff.midiInstrument = "steel drums" \melody
\set Staff.midiInstrument = "woodblock" \melody
\set Staff.midiInstrument = "taiko drum" \melody
\set Staff.midiInstrument = "melodic tom" \melody
\set Staff.midiInstrument = "synth drum" \melody
\set Staff.midiInstrument = "reverse cymbal" \melody
\set Staff.midiInstrument = "guitar fret noise" \melody
\set Staff.midiInstrument = "breath noise" \melody
\set Staff.midiInstrument = "seashore" \melody
\set Staff.midiInstrument = "bird tweet" \melody
\set Staff.midiInstrument = "telephone ring" \melody
\set Staff.midiInstrument = "helicopter" \melody
\set Staff.midiInstrument = "applause" \melody
\set Staff.midiInstrument = "gunshot" \melody
}
>>
\midi { }
}

\paper { tagline = ##f }

```

## Demo of all midi sounds



## Replacing default MIDI instrument equalization

The default MIDI instrument equalizer can be replaced by setting the `instrumentEqualizer` property in the `Score` context to a user-defined Scheme procedure that uses a MIDI instrument name as its argument along with a pair of fractions indicating the minimum and maximum volumes respectively to be applied to that specific instrument.

The following example sets the minimum and maximum volumes for flute and clarinet respectively."

```
#(define my-instrument-equalizer-alist '())

#(set! my-instrument-equalizer-alist
  (append
    '(
      ("flute" . (0.7 . 0.9))
      ("clarinet" . (0.3 . 0.6)))
    my-instrument-equalizer-alist))

#(define (my-instrument-equalizer s)
  (let ((entry (assoc s my-instrument-equalizer-alist)))
    (if entry
      (cdr entry))))

\score {
  <<
    \new Staff {
      \key g \major
      \time 2/2
      \set Score.instrumentEqualizer = #my-instrument-equalizer
      \set Staff.midiInstrument = "flute"
      \new Voice \relative {
        r2 g''\mp g fis~
        4 g8 fis e2~
        4 d8 cis d2
      }
    }
    \new Staff {
      \key g \major
      \set Staff.midiInstrument = "clarinet"
      \new Voice \relative {
        b'1\p a2. b8 a
        g2. fis8 e
        fis2 r
      }
    }
  >>
  \layout { }
```

```
\midi { }  
}
```



## Templates

### Vorlage für Alte Notation – moderne Transkription des gregorianischen Chorals

Dieses Beispiel zeigt eine moderne Transkription des Gregorianischen Chorals. Hier gibt es keine Takte, keine Notenhälsen und es werden nur halbe und Viertelnoten verwendet. Zusätzliche Zeichen zeigen die Länge von Pausen an.

```
chant = \relative c' {
  \set Score.timing = ##f
  f4 a2 \divisioMinima
  g4 b a2 f2 \divisioMaior
  g4( f) f( g) a2 \finalis
}

verba = \lyricmode {
  Lo -- rem ip -- sum do -- lor sit a -- met
}

\score {
  \new GregorianTranscriptionStaff <<
    \new GregorianTranscriptionVoice = "melody" \chant
    \new GregorianTranscriptionLyrics = "one" \lyricsto melody \verba
  >>
}
```



### Vorlage für anglikanischen Psalm

Diese Vorlage zeigt eine Art, anglikanische Psalmengesänge zu setzen. Hier wird auch gezeigt, wie Strophen als einfacher Text unter den Noten hinzugefügt werden können. Zwei Strophen sind in unterschiedlicher Weise notiert um mehr Möglichkeiten darzustellen.

```
\paper { tagline = ##f }

SopranoMusic = \relative g' {
  g1 | c2 b | a1 | \bar "||"
  a1 | d2 c | c b | c1 | \bar "||"
}

AltoMusic = \relative c' {
  e1 | g2 g | f1 |
  f1 | f2 e | d d | e1 |
}

TenorMusic = \relative a {
  c1 | c2 c | c1 |
  d1 | g,2 g | g g | g1 |
}
```

```

BassMusic = \relative c {
  c1 | e2 e | f1 |
  d1 | b2 c | g' g | c,1 |
}

global = {
  \time 2/2
}

dot = \markup {
  \raise #0.7 \musicglyph "dots.dot"
}

tick = \markup {
  \raise #1 \fontsize #-5 \musicglyph "scripts.rvarcomma"
}

% Use markup to center the chant on the page
\markup {
  \fill-line {
    \score { % centered
      <<
        \new ChoirStaff <<
          \new Staff <<
            \global
            \clef "treble"
            \new Voice = "Soprano" <<
              \voiceOne
              \SopranoMusic
            >>
            \new Voice = "Alto" <<
              \voiceTwo
              \AltoMusic
            >>
          >>
          \new Staff <<
            \clef "bass"
            \global
            \new Voice = "Tenor" <<
              \voiceOne
              \TenorMusic
            >>
            \new Voice = "Bass" <<
              \voiceTwo
              \BassMusic
            >>
          >>
        >>
      >>
    }
  }
  \layout {
    \context {

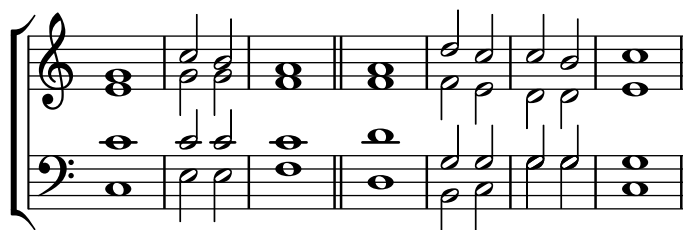
```

```

        \Score
        \override SpacingSpanner.base-shortest-duration =
            \musicLength 2
    }
    \context {
        \Staff
        \remove "Time_signature_engraver"
    }
} % End score
} % End markup

\markup {
    \fill-line {
        \column {
            \left-align {
                \null \null \null
                \line {
                    \fontsize #5 0
                    \fontsize #3 come
                    let us \bold sing | unto \dot the | Lord : let
                }
                \line {
                    us heartily
                    \concat { re \bold joice }
                    in the | strength of | our
                }
                \line {
                    sal | vation.
                }
                \null
                \line {
                    \hspace #2.5 8. Today if ye will hear his voice *
                }
                \line {
                    \concat { \bold hard en }
                    \tick not your \tick hearts : as in the pro-
                }
                \line {
                    vocation * and as in the \bold day of tempt- \tick
                }
                \line {
                    -ation \tick in the \tick wilderness.
                }
            }
        }
    }
}

```



**O** come let us **sing** | unto • the | Lord : let  
us heartily **rejoice** in the | strength of | our  
sal | vation.

8. Today if ye will hear his voice \*  
**harden** ' not your ' hearts : as in the pro-  
vocation \* and as in the **day** of tempt- '  
-ation ' in the ' wilderness.

## Hymnus-Vorlage

Dieses Beispiel zeigt eine Möglichkeit, eine Hymnusmelodie zu setzen, in der jede Zeile mit einem Auftakt beginnt und einem unvollständigen Takt abschließt. Es zeigt auch, wie man die Strophen als allein stehenden Text unter die Noten hinzufügt.

```
Timeline = {
  \time 4/4
  \tempo 4=96
  \partial 2
  s2 | s1 | s2 \breathe s2 | s1 | s2 \caesura \break
  s2 | s1 | s2 \breathe s2 | s1 | s2 \fine
}
```

```
SopranoMusic = \relative g' {
  g4 g | g g g g | g g g g | g g g g | g2
  g4 g | g g g g | g g g g | g g g g | g2
}
```

```
AltoMusic = \relative c' {
  d4 d | d d d d | d d d d | d d d d | d2
  d4 d | d d d d | d d d d | d d d d | d2
}
```

```
TenorMusic = \relative a {
  b4 b | b b b b | b b b b | b b b b | b2
  b4 b | b b b b | b b b b | b b b b | b2
}
```

```
BassMusic = \relative g {
  g4 g | g g g g | g g g g | g g g g | g2
  g4 g | g g g g | g g g g | g g g g | g2
}
```

```

global = {
  \key g \major
}

\score { % Start score
  <<
    \new PianoStaff << % Start pianostaff
      \new Staff << % Start Staff = RH
        \global
        \clef "treble"
        \new Voice = "Soprano" << % Start Voice = "Soprano"
          \Timeline
          \voiceOne
          \SopranoMusic
        >> % End Voice = "Soprano"
      \new Voice = "Alto" << % Start Voice = "Alto"
        \Timeline
        \voiceTwo
        \AltoMusic
      >> % End Voice = "Alto"
    >> % End Staff = RH
  \new Staff << % Start Staff = LH
    \global
    \clef "bass"
    \new Voice = "Tenor" << % Start Voice = "Tenor"
      \Timeline
      \voiceOne
      \TenorMusic
    >> % End Voice = "Tenor"
  \new Voice = "Bass" << % Start Voice = "Bass"
    \Timeline
    \voiceTwo
    \BassMusic
  >> % End Voice = "Bass"
  >> % End Staff = LH
  >> % End pianostaff
  >>
} % End score

\markup {
  \fill-line {
    ""
    {
      \column {
        \left-align {
          "This is line one of the first verse"
          "This is line two of the same"
          "And here's line three of the first verse"
          "And the last line of the same"
        }
      }
    }
  }
}

```



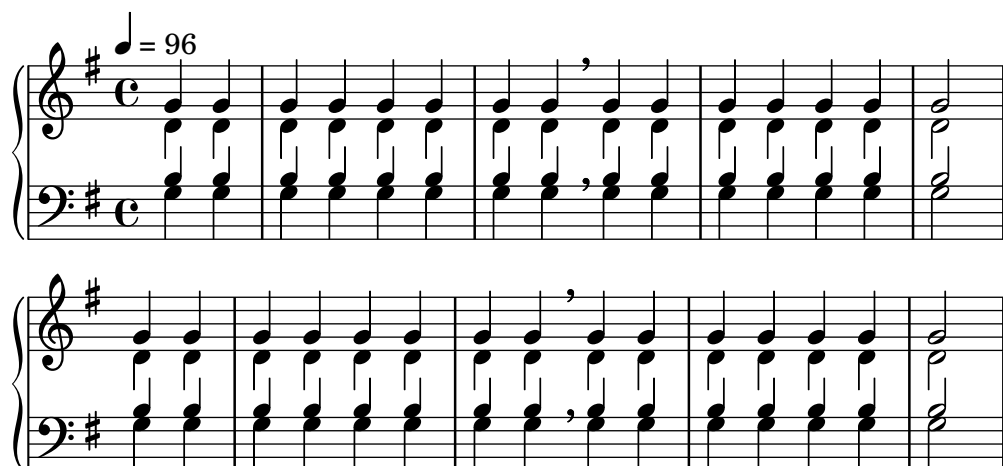
```

    }
    ""
  }
}

\layout {
  \context {
    \Score
    caesuraType = #'((bar-line . "||"))
    fineBarType = "||"
  }
}

\paper { % Start paper block
  indent = 0      % don't indent first system
  line-width = 130 % shorten line length to suit music
  tagline = ##f % Don't print tag line, can be removed
} % End paper block

```



This is line one of the first verse  
 This is line two of the same  
 And here's line three of the first verse  
 And the last line of the same

## Vorlage für Jazz-Combo

Hier ist ein ziemlich kompliziertes Beispiel für ein Jazz-Ensemble. Achtung: Alle Instrumente sind in `\key c \major` (C-Dur) notiert. Das bezieht sich auf die klingende Musik: LilyPond transponiert die Tonart automatisch, wenn sich die Noten innerhalb eines `transpose`-Abschnitts befinden.

```

\header {
  title = "Song"
  subtitle = "(tune)"
  composer = "Me"
  meter = "moderato"
  piece = "Swing"
  tagline = \markup {
    \column {

```

```

    "LilyPond example file by Amelie Zapf,"
    "Berlin 07/07/2003"
  }
}
}
% To make the example display in the documentation
\paper {
  paper-width = 130
}
%#(set-global-staff-size 16)
\include "english.ly"

%%%%%%%%%%%%%% Some macros %%%%%%%%%%%%%%%

sl = {
  \override NoteHead.style = #'slash
  \hide Stem
}
nsl = {
  \revert NoteHead.style
  \undo \hide Stem
}
crOn = \override NoteHead.style = #'cross
crOff = \revert NoteHead.style

%% insert chord name style stuff here.

jazzChords = { }

%%%%%%%%%%%%%% Keys 'n' thangs %%%%%%%%%%%%%%%

global = { \time 4/4 }

Key = { \key c \major }

% ##### Horns #####

% ----- Trumpet -----
trpt = \transpose c d \relative c' {
  \Key
  c1 | c | c |
}
trpHarmony = \transpose c' d {
  \jazzChords
}
trumpet = {
  \global
  \clef treble
  <<
  \trpt
  >>
}

```

```

% ----- Alto Saxophone -----
alto = \transpose c a \relative c' {
  \Key
  c1 | c | c |
}
altoHarmony = \transpose c' a {
  \jazzChords
}
altoSax = {
  \global
  \clef treble
  <<
    \alto
  >>
}

% ----- Baritone Saxophone -----
bari = \transpose c a' \relative c {
  \Key
  c1
  c1
  \sl
  d4^"Solo" d d d
  \nsl
}
bariHarmony = \transpose c' a \chordmode {
  \jazzChords s1 s d2:maj e:m7
}
bariSax = {
  \global
  \clef treble
  <<
    \bari
  >>
}

% ----- Trombone -----
tbone = \relative c {
  \Key
  c1 | c | c
}
tboneHarmony = \chordmode {
  \jazzChords
}
trombone = {
  \global
  \clef bass
  <<
    \tbone
  >>
}

```

```
% ##### Rhythm Section #####
```

```
% ----- Guitar -----
```

```
gtr = \relative c'' {
  \Key
  c1
  \sl
  b4 b b b
  \ns1
  c1
}
gtrHarmony = \chordmode {
  \jazzChords
  s1 c2:min7+ d2:maj9
}
guitar = {
  \global
  \clef treble
  <<
  \gtr
  >>
}
```

```
%% ----- Piano -----
```

```
rhUpper = \relative c'' {
  \voiceOne
  \Key
  c1 | c | c
}
rhLower = \relative c' {
  \voiceTwo
  \Key
  e1 | e | e
}
```

```
lhUpper = \relative c' {
  \voiceOne
  \Key
  g1 | g | g
}
```

```
lhLower = \relative c {
  \voiceTwo
  \Key
  c1 | c | c
}
```

```
PianoRH = {
  \clef treble
  \global
  <<
  \new Voice = "one" \rhUpper
```

```

    \new Voice = "two" \rhLower
  >>
}
PianoLH = {
  \clef bass
  \global
  <<
    \new Voice = "one" \lhUpper
    \new Voice = "two" \lhLower
  >>
}

piano = {
  <<
    \new Staff = "upper" \PianoRH
    \new Staff = "lower" \PianoLH
  >>
}

% ----- Bass Guitar -----
Bass = \relative c {
  \Key
  c1 | c | c
}
bass = {
  \global
  \clef bass
  <<
    \Bass
  >>
}

% ----- Drums -----
up = \drummode {
  \voiceOne
  hh4 <hh sn> hh <hh sn>
  hh4 <hh sn> hh <hh sn>
  hh4 <hh sn> hh <hh sn>
}
down = \drummode {
  \voiceTwo
  bd4 s bd s
  bd4 s bd s
  bd4 s bd s
}

drumContents = {
  \global
  <<
    \new DrumVoice \up
    \new DrumVoice \down
  >>
}

```

```

}

%%%%%%%%%% It All Goes Together Here %%%%%%%%%%%

\score {
  <<
    \new StaffGroup = "horns" <<
      \new Staff = "trumpet" \with { instrumentName = "Trumpet" }
      \trumpet
      \new Staff = "altosax" \with { instrumentName = "Alto Sax" }
      \altoSax
      \new ChordNames = "barichords" \with { instrumentName = "Trumpet" }
      \bariHarmony
      \new Staff = "barisax" \with { instrumentName = "Bari Sax" }
      \bariSax
      \new Staff = "trombone" \with { instrumentName = "Trombone" }
      \trombone
    >>

    \new StaffGroup = "rhythm" <<
      \new ChordNames = "chords" \gtrHarmony
      \new Staff = "guitar" \with { instrumentName = "Guitar" }
      \guitar
      \new PianoStaff = "piano" \with {
        instrumentName = "Piano"
        midiInstrument = "acoustic grand"
      }
      \piano
      \new Staff = "bass" \with { instrumentName = "Bass" }
      \bass
      \new DrumStaff \with { instrumentName = "Drums" }
      \drumContents
    >>
  >>
  \layout {
    \context { \Staff \RemoveEmptyStaves }
    \context {
      \Score
      \override BarNumber.padding = 3
      \override RehearsalMark.padding = 2
      skipBars = ##t
    }
  }
  \midi { }
}

```

## Song

(tune)

Me

moderato  
Swing

Trumpet

Alto Sax

Bari Sax

Trombone

Guitar

Piano

Bass

Drums

B<sup>Δ</sup> Solo C<sup>#</sup>m<sup>7</sup>

Cm<sup>Δ</sup> D<sup>Δ</sup>9

## Orchester, Chor und Klavier

Diese Vorlage zeigt die Benutzung von geschachtelten `StaffGroup`- und `GrandStaff`-Kontexte, um Instrumente in Untergruppen zu unterteilen, und die Benutzung von `\transpose` für transponierende Instrumente. Alle Noten werden in C geschrieben. Noten können in C eingegeben werden, oder auch in der Tonart des Instrumentes: dann müssen sie zuerst nach C transponiert werden, bevor sie einer Variable zugewiesen werden.

```
#(set-global-staff-size 17)
```

```
\paper {
  indent = 3.0\cm % add space for instrumentName
  short-indent = 1.5\cm % add less space for shortInstrumentName
}
```

```
\header { tagline = ##f }
```

```
fluteMusic = \relative c' { \key g \major g'1 b }
```

*% Pitches as written on a manuscript for Clarinet in A  
% are transposed to concert pitch.*

```
clarinetMusic = \transpose c' a
  \relative c'' { \key bes \major bes1 d }
```

```
trumpetMusic = \relative c { \key g \major g'1 b }
```

*% Key signature is often omitted for horns*

```
hornMusic = \transpose c' f
  \relative c { d'1 fis }
```

```
percussionMusic = \relative c { \key g \major g1 b }
```

```
sopranoMusic = \relative c'' { \key g \major g'1 b }
```

```
sopranoLyrics = \lyricmode { Lyr -- ics }
```

```
altoIMusic = \relative c' { \key g \major g'1 b }
```

```
altoIIMusic = \relative c' { \key g \major g'1 b }
```

```
altoILyrics = \sopranoLyrics
```

```
altoIIILyrics = \lyricmode { Ah -- ah }
```

```
tenorMusic = \relative c' { \clef "treble_8" \key g \major g1 b }
```

```
tenorLyrics = \sopranoLyrics
```

```
pianoRHMus = \relative c { \key g \major g'1 b }
```

```
pianoLHMus = \relative c { \clef bass \key g \major g1 b }
```

```
violinIMusic = \relative c' { \key g \major g'1 b }
```

```
violinIIMusic = \relative c' { \key g \major g'1 b }
```

```
violaMusic = \relative c { \clef alto \key g \major g'1 b }
```

```
celloMusic = \relative c { \clef bass \key g \major g1 b }
```

```
bassMusic = \relative c { \clef "bass_8" \key g \major g,1 b }
```

```
\score {
  <<
    \new StaffGroup = "StaffGroup_woodwinds" <<
      \new Staff = "Staff_flute" \with { instrumentName = "Flute" }
      \fluteMusic
```



```

\new Staff = "Staff_clarinet" \with {
  instrumentName = \markup { \concat { "Clarinet in B" \flat } }
}

% Declare that written Middle C in the music
% to follow sounds a concert B flat, for
% output using sounded pitches such as MIDI.
%\transposition bes

% Print music for a B-flat clarinet
\transpose bes c' \clarinetMusic
>>

\new StaffGroup = "StaffGroup_brass" <<
  \new Staff = "Staff_hornI" \with { instrumentName = "Horn in F" }
  % \transposition f
  \transpose f c' \hornMusic

  \new Staff = "Staff_trumpet" \with { instrumentName = "Trumpet in C" }
  \trumpetMusic

>>

\new RhythmicStaff = "RhythmicStaff_percussion"
\with { instrumentName = "Percussion" }
<<
  \percussionMusic
>>

\new PianoStaff \with { instrumentName = "Piano" }
<<
  \new Staff { \pianoRHMusical }
  \new Staff { \pianoLHMusical }
>>

\new ChoirStaff = "ChoirStaff_choir" <<
  \new Staff = "Staff_soprano" \with { instrumentName = "Soprano" }
  \new Voice = "soprano"
  \sopranoMusical

  \new Lyrics \lyricsto "soprano" { \sopranoLyrics }
  \new GrandStaff = "GrandStaff_altoI"
  \with { \accepts Lyrics } <<
    \new Staff = "Staff_altoI" \with { instrumentName = "Alto I" }
    \new Voice = "altoI"
    \altoIMusical

    \new Lyrics \lyricsto "altoI" { \altoILyrics }
    \new Staff = "Staff_altoII" \with { instrumentName = "Alto II" }
    \new Voice = "altoII"
    \altoIIMusical

  \new Lyrics \lyricsto "altoII" { \altoIILyrics }
>>

```

```

\new Staff = "Staff_tenor" \with { instrumentName = "Tenor" }
  \new Voice = "tenor"
  \tenorMusic

\new Lyrics \lyricsto "tenor" { \tenorLyrics }
>>
\new StaffGroup = "StaffGroup_strings" <<
  \new GrandStaff = "GrandStaff_violins" <<
    \new Staff = "Staff_violinI" \with { instrumentName = "Violin I" }
    \violinIMusic

    \new Staff = "Staff_violinII" \with { instrumentName = "Violin II" }
    \violinIIMusic
  >>

  \new Staff = "Staff_viola" \with { instrumentName = "Viola" }
  \violaMusic

  \new Staff = "Staff_cello" \with { instrumentName = "Cello" }
  \celloMusic

  \new Staff = "Staff_bass" \with { instrumentName = "Double Bass" }
  \bassMusic
>>
>>
\layout { }
}

```

A musical score template for a symphony orchestra and vocal ensemble. The score is written for 15 parts: Flute, Clarinet in B $\flat$ , Horn in F, Trumpet in C, Percussion, Piano, Soprano, Alto I, Alto II, Tenor, Violin I, Violin II, Viola, Cello, and Double Bass. The key signature is one sharp (F#) and the time signature is common time (C). The score is divided into two systems. The first system contains the Flute, Clarinet in B $\flat$ , Horn in F, Trumpet in C, Percussion, Piano, Soprano, Alto I, Alto II, Tenor, Violin I, Violin II, Viola, Cello, and Double Bass. The second system contains the Soprano, Alto I, Alto II, Tenor, Violin I, Violin II, Viola, Cello, and Double Bass. The lyrics for the vocal parts are: Soprano (Lyr - ics), Alto I (Lyr - ics), Alto II (Lyr - ics), Tenor (Ah - ah), and Violin I (Lyr - ics). The score is written in a standard musical notation style with a large brace on the left side grouping the parts into two systems. The first system is for the woodwinds, brass, percussion, piano, and vocal soloists. The second system is for the vocal ensemble and the string section. The score is written in a standard musical notation style with a large brace on the left side grouping the parts into two systems. The first system is for the woodwinds, brass, percussion, piano, and vocal soloists. The second system is for the vocal ensemble and the string section.

## Vorlage für einfache Klaviernotation

Hier ein einfaches Klaviersystem.

```
upper = \relative c'' {
  \clef treble
  \key c \major
  \time 4/4
```

```
  a4 b c d
}
```

```
lower = \relative c {
  \clef bass
  \key c \major
  \time 4/4
```

```
  a2 c
}
```

```

\score {
  \new PianoStaff \with { instrumentName = "Piano" }
  <<
    \new Staff = "upper" \upper
    \new Staff = "lower" \lower
  >>
  \layout { }
  \midi { }
}

```



## Piano template with centered lyrics

Anstatt ein eigenes System für Melodie und Text zu schreiben, können Sie den Text auch zwischen die beiden Klaviersysteme schreiben (und damit das zusätzliche System für die Gesangsstimme auslassen).

```

upper = \relative c'' {
  \clef treble
  \key c \major
  \time 4/4

  a4 b c d
}

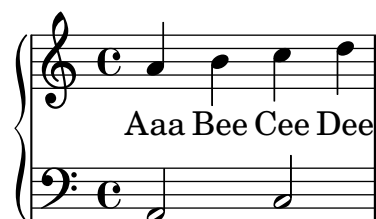
lower = \relative c {
  \clef bass
  \key c \major
  \time 4/4

  a2 c
}

text = \lyricmode {
  Aaa Bee Cee Dee
}

\score {
  \new PianoStaff <<
    \new Staff = upper { \new Voice = "singer" \upper }
    \new Lyrics \lyricsto "singer" \text
    \new Staff = lower { \lower }
  >>
  \layout { }
  \midi { }
}

```



## Vorlage für Klavier und Gesangsstimme

Das nächste Beispiel ist typisch für ein Lied: Im oberen System die Melodie mit Text, darunter Klavierbegleitung.

```
melody = \relative c'' {
  \clef treble
  \key c \major
  \time 4/4

  a b c d
}

text = \lyricmode {
  Aaa Bee Cee Dee
}

upper = \relative c'' {
  \clef treble
  \key c \major
  \time 4/4

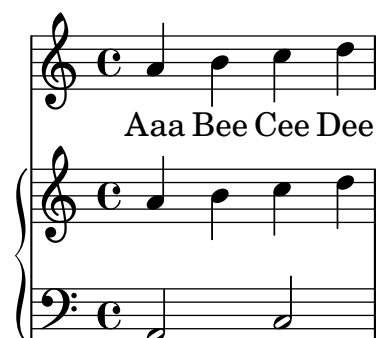
  a4 b c d
}

lower = \relative c {
  \clef bass
  \key c \major
  \time 4/4

  a2 c
}

\score {
  <<
    \new Voice = "mel" { \autoBeamOff \melody }
    \new Lyrics \lyricsto mel \text
    \new PianoStaff <<
      \new Staff = "upper" \upper
      \new Staff = "lower" \lower
    >>
  >>
  \layout {
    \context { \Staff \RemoveEmptyStaves }
  }
  \midi { }
```

}



## SATB-Chorvorlage auf vier Systemen

SATB-Chorvorlage auf vier Systemen

```

global = {
  \key c \major
  \time 4/4
  \dynamicUp
}
sopranonotes = \relative c'' {
  c2 \p \< d c d \f
}
sopranowords = \lyricmode { do do do do }
altonotes = \relative c'' {
  c2\p d c d
}
altowords = \lyricmode { re re re re }
tenornotes = {
  \clef "G_8"
  c2\mp d c d
}
tenorwords = \lyricmode { mi mi mi mi }
bassnotes = {
  \clef bass
  c2\mf d c d
}
basswords = \lyricmode { mi mi mi mi }

\score {
  \new ChoirStaff <<
    \new Staff <<
      \new Voice = "soprano" <<
        \global
        \sopranonotes
      >>
      \new Lyrics \lyricsto "soprano" \sopranowords
    >>
    \new Staff <<
      \new Voice = "alto" <<
        \global
        \altonotes
      >>
    >>
  >>
}

```

```

>>
\new Lyrics \lyricsto "alto" \altowords
>>
\new Staff <<
  \new Voice = "tenor" <<
    \global
    \tenornotes
  >>
  \new Lyrics \lyricsto "tenor" \tenorwords
  >>
\new Staff <<
  \new Voice = "bass" <<
    \global
    \bassnotes
  >>
  \new Lyrics \lyricsto "bass" \basswords
  >>
>>
}

```

## Score for diatonic accordion

A template to write a score for a diatonic accordion.

- There is a horizontal staff indicating if the accordion must be pushed (thick line) or pulled (thin line).
- There is a small rhythmic staff with lyrics that describes the bass buttons to press. The bar lines are made from gridlines.
- The tabulator staff for diatonic accordions shows the geographic position of the buttons and not (as for every other instrument) the pitch of the notes; the keys on the melody side of the accordion are placed in three columns and about 12 rows.

In the tabulator staff notation the outermost column is described with notes between lines, the innermost column is described with notes between lines and a cross as accidental, and the middle column is described with notes on a line, whereby the row in the middle is represented on the middle line in the staff.

Some words to transpose piano notes to the diatonic accordion:

1. Every diatonic accordion is built for some keys only (for example, for the keys of C major and F major), so it is important to transpose a piano melody to match one of these keys. Transpose the source code, not only the output because this code is required later on to translate it once more to the tabulator staff. This can be done with the command `displayLilyMusic`.
2. You have to alternate the push- and pull-direction of the accordion regularly. If the player has a too long part to pull the accordion gets broken. On the other hand, some harmonies are only available in one direction. Considering this, decide which parts of the melody are the push-parts and which the pull-parts.
3. For each pull- or push-part translate the piano notes to the according tabulature representation.

```
verse = \lyricmode { Wie gross bist du! Wie gross bist du! }
```

```
harmonies = \new ChordNames \chordmode {
  \germanChords
  \set chordChanges = ##t
  bes8 bes8 bes8
  es2 f
  bes1
}
```

```
NoStem = { \hide Stem }
```

```
NoNoteHead = \hide NoteHead
```

```
ZeroBeam = \override Beam.positions = #'(0 . 0)
```

```
staffTabLine = \new Staff \with {
  \remove "Time_signature_engraver"
  \remove "Clef_engraver"
} {
  \override Staff.StaffSymbol.line-positions = #'(0)
  % Shows one horizontal line. The vertical line
  % (simulating a bar-line) is simulated with a gridline
  \set Staff.midiInstrument = #"choir aahs"
  \key c \major
  \relative c''
  {
    % disable the following line to see the noteheads while writing the song
    \NoNoteHead
    \override NoteHead.no-ledgers = ##t

    % The beam between 8th-notes is used to draw the push-line
    %How to fast write the push-lines:
    % 1. write repeatedly 'c c c c c c c c |' for the whole length of the song
    % 2. uncomment the line \NoNoteHead
    % 3. compile
    % 4. Mark the positions on which push/pull changes.
    %     In the score-picture click on the position
    %         the push- or pull-part starts
    %         (on the noteHead, the cursor will change to a hand-icon).
    %     The cursor in the source code will jump just at this position.
```



```

% a) If a push-part starts there, replace the 'c' by an 'e['
% b) If a pull-part starts there, replace the 'c' by an 's'
% 5. Switch into 'overwrite-mode' by pressing the 'ins' key.
% 6. For the pull-parts overwrite the 'c' with 's'
% 7. For every push-part replace the last 'c' with 'e]'
% 8. Switch into 'insert-mode' again
% 9. At last it should look like e.g.
% (s s e[ c | c c c c c c c c | c c c c c c e] s s)
% 10. re-enable the line \NoNoteHead
\autoBeamOff
\ZeroBeam
s8 s s e[ c c c c c c e] | s s s s s
}
}

% Accordion melody in tabulator score
% 1. Place a copy of the piano melody below
% 2. Separate piano melody into pull- and push-parts
% according to the staffTabLine you've already made
% 3. For each line: Double the line. Remark the 1st one
% (Keeps unchanged as reference) and then change the second
% line using the transformation paper
% or the macros 'conv2diaton push.bsh' and 'conv2diaton pull.bsh'
% Tips:
% - In jEdit Search & Replace mark the Option 'Keep Dialog'

AccordionTabTwoCBesDur = {
% pull 1
%<f' bes'>8 <f' a'>8 <d' bes'>8 |
<g' a'>8 <g' b'>8 <e' a'>8 |
% push 2
%<g' c'>4 <f' d'> <g' ees'> <f' a'> |
<g' a'>4 <d' eisis'> <g' bisis'> <d' f'> |
% pull 3
% <f' bes'>2 r8 }
<g' a'>2 r8 }

AccordionTab= { \dynamicUp
% 1. Place a copy of the piano melody above
% 2. Separate piano melody into pull- and push-parts
% according to the staffTabLine you've already made
% 3. For each line: Double the line. Remark the 1st one
% (Keeps unchanged as reference) and then
% change the second line using the transformation paper
% Tips:
% - In jEdit Search & Replace mark the Option 'Keep Dialog'
% -
\AccordionTabTwoCBesDur
}

\header { tagline = ##f }

```

```

\layout {
  \context {
    \Score
    % The vertical line (simulating a bar-line) in
    % the staffBassRhythm is a gridline
    \consists "Grid_line_span_engraver"
  }
  \context {
    \Staff
    \consists "Grid_point_engraver"
    gridInterval = \musicLength 4*4 % 4/4 - tact. How many beats per bar
    % The following line has to be adjusted O-F-T-E-N.
    \override GridPoint.Y-extent = #'(-2 . -21)
  }
  \context {
    \ChoirStaff
    \remove "System_start_delimiter_engraver"
  }
}

staffVoice = \new Staff = astaffvoice {
  \time 4/4
  \set Staff.instrumentName = "Voice"
  \set Staff.midiInstrument = "voice oohs"
  \key bes \major
  \partial 8*3
  \clef treble
  {
    \context Voice = "melodyVoi"
    {
      <f' bes'>8 <f' a'>8 <d' bes'>8 |
      <g' c''>4 <f' d''> <g' es''> <f' a'> |
      <f' bes'>2 r8
    }
    \bar "|"
  }
}

staffAccordionMel =
\new Staff \with { \remove "Clef_engraver" } {
  \accidentalStyle forget %Set the accidentals (Vorzeichen) for each note,
  %do not remember them for the rest of the measure.
  \time 4/4
  \set Staff.instrumentName="Accordion"
  \set Staff.midiInstrument="voice oohs"
  \key c \major
  \clef treble
  { \AccordionTab \bar "|" }
}

AltOn =

```

```

#(define-music-function (mag) (number?)
  #{ \override Stem.length = #(* 7.0 mag)
    \override NoteHead.font-size =
  #(inexact->exact (* (/ 6.0 (log 2.0)) (log mag))) #})

AltOff = {
  \revert Stem.length
  \revert NoteHead.font-size
}

BassRhythm = {s4 s8 | c2 c2 | c2 s8 }
LyricBassRhythmI= \lyricmode { c b | c }

staffBassRhythm =
\new Staff = staffbass \with { \remove "Clef_engraver" } {
  % This is not a RhythmicStaff because it must be possible to append lyrics.

  \override Score.GridLine.extra-offset = #'( 13.0 . 0.0 ) % x.y
  \override Staff.StaffSymbol.line-positions = #'( 0 )
  % Shows one horizontal line. The vertical line
  % (simulating a bar-line) is simulated by a grid
  % Search for 'grid' in this page to find all related functions
  \time 4/4
  {
    \context Voice = "VoiceBassRhythm"
    \stemDown \AltOn #0.6
    \relative c''
    {
      \BassRhythm
    }
    \AltOff
    \bar "|"
  }
}

\score {
  \new ChoirStaff <<
    \harmonies
    \staffVoice
    \context Lyrics = "lmelodyVoi"
    \with { alignBelowContext = astaffvoice }
    \lyricsto melodyVoi \verse
    \staffAccordionMel
    \staffTabLine
    \staffBassRhythm
    \context Lyrics = "lBassRhythmAboveI"
    \with { alignAboveContext = staffbass }
    \lyricsto VoiceBassRhythm \LyricBassRhythmI
  >>
}

```

Voice: **B** **E $\flat$**  **F** **B**  
 Wie gross bist du! Wie gross bist du!

Accordion: **c** **b** **c**

## Vorlage für eine Notenzeile mit Noten, Text und Akkorden

Mit diesem Beispiel können Sie einen Song mit Melodie, Text und Akkorden schreiben.

```

melody = \relative c' {
  \clef treble
  \key c \major
  \time 4/4

  a4 b c d
}

text = \lyricmode {
  Aaa Bee Cee Dee
}

harmonies = \chordmode {
  a2 c
}

\score {
  <<
    \new ChordNames {
      \set chordChanges = ##t
      \harmonies
    }
    \new Voice = "one" { \autoBeamOff \melody }
    \new Lyrics \lyricsto "one" \text
  >>
  \layout { }
  \midi { }
}

```

**A** **C**  
 Aaa Bee Cee Dee

## Single staff template with notes, lyrics, chords and frets

Here is a simple lead sheet template with melody, lyrics, chords and fret diagrams.

```

verseI = \lyricmode {
  \set stanza = #"1."
  This is the first verse
}

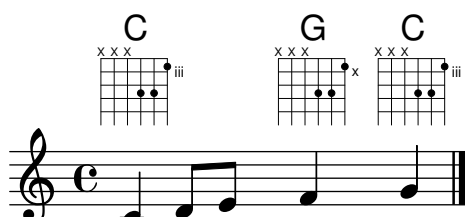
verseII = \lyricmode {
  \set stanza = #"2."
  This is the second verse.
}

theChords = \chordmode {
  % insert chords for chordnames and fretboards here
  c2 g4 c
}

staffMelody = \relative c' {
  \key c \major
  \clef treble
  % Type notes for melody here
  c4 d8 e f4 g
  \bar "|"
}

\score {
  <<
    \context ChordNames { \theChords }
    \context FretBoards { \theChords }
    \new Staff {
      \context Voice = "voiceMelody" { \staffMelody }
    }
    \new Lyrics = "lyricsI" {
      \lyricsto "voiceMelody" \verseI
    }
    \new Lyrics = "lyricsII" {
      \lyricsto "voiceMelody" \verseII
    }
  >>
  \layout { }
  \midi { }
}

```



The image displays a musical score for a single staff. At the top, three fretboard diagrams are shown for the chords C, G, and C. Each diagram is a 6-string guitar fretboard with frets 1 through 5 indicated. The C chord diagram shows the first string open, second string at fret 1, third string at fret 2, and fourth, fifth, and sixth strings open. The G chord diagram shows the first string at fret 3, second string at fret 2, third string at fret 3, fourth string at fret 2, fifth string at fret 3, and sixth string at fret 3. The second C chord diagram shows the first string open, second string at fret 1, third string at fret 2, and fourth, fifth, and sixth strings open. Below the diagrams is a musical staff in treble clef with a common time signature (C). The melody consists of the notes C4, D4, E4, F4, and G4, each beamed to the next note. The staff ends with a double bar line. Below the staff, the lyrics are written: "1. This is the first verse" and "2. This is the second verse."

1. This is the first verse  
2. This is the second verse.

## Vorlage für eine Notenzeile mit Akkorden

Wollen Sie ein Liedblatt mit Melodie und Akkorden schreiben? Hier ist das richtige Beispiel für Sie!

```
melody = \relative c' {
  \clef treble
  \key c \major
  \time 4/4

  f4 e8[ c] d4 g
  a2 ~ a
}

harmonies = \chordmode {
  c4:m f:min7 g:maj c:aug
  d2:dim b4:5 e:sus
}

\score {
  <<
    \new ChordNames {
      \set chordChanges = ##t
      \harmonies
    }
    \new Staff \melody
  >>
  \layout{ }
  \midi { }
}
```



## Vorlage für ein Notensystem mit Noten und Gesangstext

Das nächste Beispiel zeigt eine einfache Melodie mit Text. Kopieren Sie es in Ihre Datei, fügen Sie Noten und Text hinzu und übersetzen Sie es mit LilyPond. In dem Beispiel wird die automatische Balkenverbindung ausgeschaltet (mit dem Befehl `\autoBeamOff`), wie es für Vokalmusik üblich ist. Wenn Sie die Balken wieder einschalten wollen, müssen Sie die entsprechende Zeile entweder ändern oder auskommentieren.

```
melody = \relative c' {
  \clef treble
  \key c \major
  \time 4/4

  a4 b c d
}

text = \lyricmode {
  Aaa Bee Cee Dee
}
```

```

\score{
  <<
    \new Voice = "one" {
      \autoBeamOff
      \melody
    }
    \new Lyrics \lyricsto "one" \text
  >>
  \layout { }
  \midi { }
}

```



## Vorlage für ein Notensystem

Das erste Beispiel zeigt ein Notensystem mit Noten, passend für ein Soloinstrument oder ein Melodiefragment. Kopieren Sie es und fügen Sie es in Ihre Datei ein, schreiben Sie die Noten hinzu, und Sie haben eine vollständige Notationsdatei.

```

melody = \relative c' {
  \clef treble
  \key c \major
  \time 4/4

  a4 b c d
}

```

```

\score {
  \new Staff \melody
  \layout { }
  \midi { }
}

```



## Vorlage für Streichquartett (einfach)

Dieses Beispiel demonstriert die Partitur für ein Streichquartett. Hier wird auch eine „\global“-Variable für Taktart und Vorzeichen benutzt.

```

global= {
  \time 4/4
  \key c \major
}

violinOne = \new Voice \relative c' {
  c2 d
}

```

```

    e1
    \bar "|"
  }

violinTwo = \new Voice \relative c' {
  g2 f
  e1
  \bar "|"
}

viola = \new Voice \relative c' {
  \clef alto
  e2 d
  c1
  \bar "|"
}

cello = \new Voice \relative c' {
  \clef bass
  c2 b
  a1
  \bar "|"
}

\score {
  \new StaffGroup <<
    \new Staff \with { instrumentName = "Violin 1" }
    << \global \violinOne >>
    \new Staff \with { instrumentName = "Violin 2" }
    << \global \violinTwo >>
    \new Staff \with { instrumentName = "Viola" }
    << \global \viola >>
    \new Staff \with { instrumentName = "Cello" }
    << \global \cello >>
  >>
  \layout { }
  \midi { }
}

```

Violin 1

Violin 2

Viola

Cello



## Vorlage für Streichquartett mit einzelnen Stimmen

Mit diesem Beispiel können Sie ein schönes Streichquartett notieren, aber wie gehen Sie vor, wenn Sie Stimmen brauchen? Das Beispiel oben hat gezeigt, wie Sie mit Variablen einzelne Abschnitte getrennt voneinander notieren können. Im nächsten Beispiel wird nun gezeigt, wie Sie mit diesen Variablen einzelne Stimmen erstellen.

Sie müssen das Beispiel in einzelne Dateien aufteilen; die Dateinamen sind in den Kommentaren am Anfang jeder Datei enthalten. `piece.ly` enthält die Noten. Die anderen Dateien – `score.ly`, `vn1.ly`, `vn2.ly`, `vla.ly` und `vlc.ly` – erstellen daraus die entsprechenden Stimmen bzw. die Partitur (`score.ly`). Mit `ag` wird den Stimmen ein Name zugewiesen, auf den zurückgegriffen werden kann.

```
% piece.ly
% (This is the global definitions file)

global= {
  \time 4/4
  \key c \major
}

Violinone = \new Voice \relative c' {
  c2 d e1
  \bar "|."
}

Violintwo = \new Voice \relative c' {
  g2 g e1
  \bar "|."
}

Viola = \new Voice \relative c' {
  \clef alto
  e2 d c1
  \bar "|."
}

Cello = \new Voice \relative c' {
  \clef bass
  c2 b a1
  \bar "|."
}

music = {
  <<
    \tag #'score \tag #'vn1
    \new Staff \with { instrumentName = "Violin 1" }
    << \global \Violinone >>

    \tag #'score \tag #'vn2
    \new Staff \with { instrumentName = "Violin 2" }
    << \global \Violintwo >>

    \tag #'score \tag #'vla
```

```

\new Staff \with { instrumentName = "Viola" }
<< \global \Viola >>

\tag #'score \tag #'vlc
\new Staff \with { instrumentName = "Cello" }
<< \global \Cello >>
>>
}

% These are the other files you need to save on your computer

% score.ly
% (This is the main file)

% uncomment the line below when using a separate file
%\include "piece.ly"

#(set-global-staff-size 14)

\score {
  \new StaffGroup \keepWithTag #'score \music
  \layout { }
  \midi { }
}

%{ Uncomment this block when using separate files

% vn1.ly
% (This is the Violin 1 part file)

\include "piece.ly"
\score {
  \keepWithTag #'vn1 \music
  \layout { }
}

% vn2.ly
% (This is the Violin 2 part file)

\include "piece.ly"
\score {
  \keepWithTag #'vn2 \music
  \layout { }
}

% vla.ly
% (This is the Viola part file)

\include "piece.ly"
\score {
  \keepWithTag #'vla \music

```

```

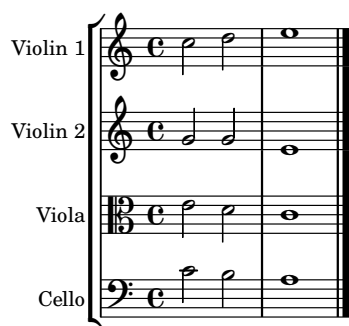
\layout { }
}

% vlc.ly
% (This is the Cello part file)

\include "piece.ly"
\score {
  \keepWithTag #'vlc \music
  \layout { }
}

%}

```



## Vorlage für Vokalensemble

Dieses Beispiel ist für vierstimmigen Gesang (SATB). Bei größeren Stücken ist es oft sinnvoll, eine allgemeine Variable zu bestimmen, die in allen Stimmen eingefügt wird. Taktart und Vorzeichen etwa sind fast immer gleich in allen Stimmen.

```

\paper {
  top-system-spacing.basic-distance = 10
  score-system-spacing.basic-distance = 20
  system-system-spacing.basic-distance = 20
  last-bottom-spacing.basic-distance = 10
}

global = {
  \key c \major
  \time 4/4
}

sopMusic = \relative {
  c''4 c c8[( b)] c4
}
sopWords = \lyricmode {
  hi hi hi hi
}

altoMusic = \relative {
  e'4 f d e
}
altoWords = \lyricmode {

```

```

    ha ha ha ha
}

tenorMusic = \relative {
    g4 a f g
}
tenorWords = \lyricmode {
    hu hu hu hu
}

bassMusic = \relative {
    c4 c g c
}
bassWords = \lyricmode {
    ho ho ho ho
}

\score {
  \new ChoirStaff <<
    \new Lyrics = "sopranos" \with {
      % this is needed for lyrics above a staff
      \override VerticalAxisGroup.staff-affinity = #DOWN
    }
    \new Staff = "women" <<
      \new Voice = "sopranos" {
        \voiceOne
        << \global \sopMusic >>
      }
      \new Voice = "altos" {
        \voiceTwo
        << \global \altoMusic >>
      }
    >>
    \new Lyrics = "altos"
    \new Lyrics = "tenors" \with {
      % this is needed for lyrics above a staff
      \override VerticalAxisGroup.staff-affinity = #DOWN
    }
    \new Staff = "men" <<
      \clef bass
      \new Voice = "tenors" {
        \voiceOne
        << \global \tenorMusic >>
      }
      \new Voice = "basses" {
        \voiceTwo << \global \bassMusic >>
      }
    >>
    \new Lyrics = "basses"
    \context Lyrics = "sopranos" \lyricsto "sopranos" \sopWords
    \context Lyrics = "altos" \lyricsto "altos" \altoWords
    \context Lyrics = "tenors" \lyricsto "tenors" \tenorWords

```

```

\context Lyrics = "basses" \lyricsto "basses" \bassWords
>>
}

```



## Vocal ensemble template with automatic piano reduction

In diesem Beispiel wird ein automatischer Klavierauszug zu der Chorpartitur hinzugefügt. Das zeigt eine der Stärken von LilyPond – man kann eine Variable mehr als einmal benutzen. Wenn Sie irgendeine Änderung an einer Chorstimme vornehmen, (etwa `tenorMusic`), verändert sich auch der Klavierauszug entsprechend.

```

\paper {
  top-system-spacing.basic-distance = 10
  score-system-spacing.basic-distance = 20
  system-system-spacing.basic-distance = 20
  last-bottom-spacing.basic-distance = 10
}

```

```

global = {
  \key c \major
  \time 4/4
}

```

```

sopMusic = \relative {
  c'4 c c8[( b)] c4
}

```

```

sopWords = \lyricmode {
  hi hi hi hi
}

```

```

altoMusic = \relative {
  e'4 f d e
}

```

```

altoWords = \lyricmode {
  ha ha ha ha
}

```

```

tenorMusic = \relative {
  g4 a f g
}

```

```

tenorWords = \lyricmode {
  hu hu hu hu
}

```

```

}

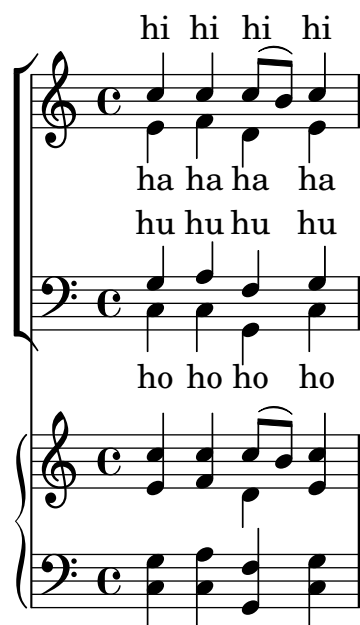
bassMusic = \relative {
  c4 c g c
}
bassWords = \lyricmode {
  ho ho ho ho
}

\score {
  <<
    \new ChoirStaff <<
      \new Lyrics = "sopranos" \with {
        % This is needed for lyrics above a staff
        \override VerticalAxisGroup.staff-affinity = #DOWN
      }
      \new Staff = "women" <<
        \new Voice = "sopranos" { \voiceOne << \global \sopMusic >> }
        \new Voice = "altos" { \voiceTwo << \global \altoMusic >> }
      >>
      \new Lyrics = "altos"
      \new Lyrics = "tenors" \with {
        % This is needed for lyrics above a staff
        \override VerticalAxisGroup.staff-affinity = #DOWN
      }
    >>

    \new Staff = "men" <<
      \clef bass
      \new Voice = "tenors" { \voiceOne << \global \tenorMusic >> }
      \new Voice = "basses" { \voiceTwo << \global \bassMusic >> }
    >>
    \new Lyrics = "basses"
    \context Lyrics = "sopranos" \lyricsto "sopranos" \sopWords
    \context Lyrics = "altos" \lyricsto "altos" \altoWords
    \context Lyrics = "tenors" \lyricsto "tenors" \tenorWords
    \context Lyrics = "basses" \lyricsto "basses" \bassWords
  >>
  \new PianoStaff <<
    \new Staff <<
      \set Staff.printPartCombineTexts = ##f
      \partCombine
      << \global \sopMusic >>
      << \global \altoMusic >>
    >>
    \new Staff <<
      \clef bass
      \set Staff.printPartCombineTexts = ##f
      \partCombine
      << \global \tenorMusic >>
      << \global \bassMusic >>
    >>
  >>
}

```

```
>>
}
```



## Vorlage für Vokalensemble mit dem Gesangstext über und unter dem System

In diesem Beispiel werden die Texte mit den Befehlen `alignAboveContext` und `alignBelowContext` über und unter dem System angeordnet.

```
global = {
  \key c \major
  \time 4/4
}

sopMusic = \relative c' {
  c4 c c8[( b)] c4
}
sopWords = \lyricmode {
  hi hi hi hi
}

altoMusic = \relative c' {
  e4 f d e
}
altoWords = \lyricmode {
  ha ha ha ha
}

tenorMusic = \relative c' {
  g4 a f g
}
tenorWords = \lyricmode {
  hu hu hu hu
}
```

```

bassMusic = \relative c {
  c4 c g c
}
bassWords = \lyricmode {
  ho ho ho ho
}

\score {
  \new ChoirStaff <<
    \new Staff = "women" <<
      \new Voice = "sopranos" { \voiceOne << \global \sopMusic >> }
      \new Voice = "altos" { \voiceTwo << \global \altoMusic >> }
    >>
    \new Lyrics \with { alignAboveContext = "women" }
      \lyricsto "sopranos" \sopWords
    \new Lyrics \with { alignBelowContext = "women" }
      \lyricsto "altos" \altoWords
    % we could remove the line about this with the line below, since
    % we want the alto lyrics to be below the alto Voice anyway.
    % \new Lyrics \lyricsto "altos" \altoWords

    \new Staff = "men" <<
      \clef bass
      \new Voice = "tenors" { \voiceOne << \global \tenorMusic >> }
      \new Voice = "basses" { \voiceTwo << \global \bassMusic >> }
    >>
    \new Lyrics \with { alignAboveContext = "men" }
      \lyricsto "tenors" \tenorWords
    \new Lyrics \with { alignBelowContext = "men" }
      \lyricsto "basses" \bassWords
    % again, we could replace the line above this with the line below.
    % \new Lyrics \lyricsto "basses" \bassWords
  >>
}

```



## Sologesang und zweistimmiger Refrain

Diese Vorlage erstellt eine Partitur, die mit Sologesang beginnt und einen Refrain für zwei Stimmen enthält. Sie zeigt auch die Benutzung von Platzhalter-Pausen innerhalb der `\global-`



Variable, um Taktwechsel (und andere Elemente, die für alle Stimmen gleich sind) für das gesamte Stück zu definieren.

```
\header { tagline = ##f }

global = {
  \key g \major

  % verse
  \time 3/4
  s2.*2
  \break

  % refrain
  \time 2/4
  s2*2
  \bar "|."
}

SoloNotes = \relative g' {
  \clef "treble"

  % verse
  g4 g g |
  b4 b b |

  % refrain
  R2*2 |
}

SoloLyrics = \lyricmode {
  One two three |
  four five six |
}

SopranoNotes = \relative c'' {
  \clef "treble"

  % verse
  R2.*2 |

  % refrain
  c4 c |
  g4 g |
}

SopranoLyrics = \lyricmode {
  la la |
  la la |
}

BassNotes = \relative c {
```

```

\clef "bass"

% verse
R2.*2 |

% refrain
c4 e |
d4 d |
}

BassLyrics = \lyricmode {
  dum dum |
  dum dum |
}

\score {
  <<
    \new Voice = "SoloVoice" << \global \SoloNotes >>
    \new Lyrics \lyricsto "SoloVoice" \SoloLyrics

    \new ChoirStaff <<
      \new Voice = "SopranoVoice" << \global \SopranoNotes >>
      \new Lyrics \lyricsto "SopranoVoice" \SopranoLyrics

      \new Voice = "BassVoice" << \global \BassNotes >>
      \new Lyrics \lyricsto "BassVoice" \BassLyrics
    >>
  >>
  \layout {
    ragged-right = ##t
    \context { \Staff
      % these lines prevent empty staves from being printed
      \RemoveEmptyStaves
      \override VerticalAxisGroup.remove-first = ##t
    }
  }
}

```

