LilyPond

The music typesetter

Unofficial MusicXML test suite

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Introduction

Why a MusicXML test suite?

This test suite of sample MusicXML (`https://www.w3.org/2021/06/musicxml40/`) files is supposed to fill a severe gap for all developers implementing MusicXML support in their application: There is no complete test suite of MusicXML files available for testing purposes.

License of the test suite

This collection of MusicXML test files is distributed under the MIT license (`https://www.opensource.org/licenses/mit-license.php`), which means that you can use the files for any purpose, as long as you leave the copyright notice (or the `LICENSE` file) intact.

Connection with LilyPond (`https://lilypond.org/`)

At the same time as providing a generic test suite for MusicXML documents, this test suite also serves as proofs for the `musicxml2ly` script provided with LilyPond. The images shown in this document were generated by running `musicxml2ly` and `lilypond` on the MusicXML files. As `musicxml2ly` does not yet perfectly support every single aspect of MusicXML, the output is not supposed to be used as a definitive reference rendering, but rather as an indication how one particular application supports and interprets each of the test files.

If something does not seem right in the output, it might either be that this feature has not been implemented yet, has been wrongly implemented, or a regression has crept in recently...

In the web version of this document, you can click on the file name of test to see the MusicXML input file. If you click on the figure you can see the corresponding `.ly` intermediary file.

Structure of this test suite

Each test file (typically hand-crafted from the MusicXML specification) checks one particular aspect of MusicXML. A short description of the particular feature for a file is given inside the file in a comment element of the form

```
<identification><miscellaneous>
  <miscellaneous-field name="description"> .... </miscellaneous-field>
</miscellaneous></identification>
```

The files are categorized by their first two digits with the following meaning:

01–03	Basics: pitches, rests, rhythm.
11–14	Staff attributes: time signatures, clefs, key signatures, staff details.
21–24	Notes: chords, note settings, tuplets, grace notes.
31–34	Notations and articulations: dynamics (staff-attached), notations (note-attached), spanners, print-object, color, and font size issues.
41–43	Parts: multiple parts, multi-voice parts, multi-staff parts.
45–46	Repeat and measure issues.
51–52	Page issues: header fields, page layout.
55–59	Exact positioning of items, offsets, etc.
61	Lyrics.

71–75	Instrument-specific: guitar (chord, fretboards), transposing instruments, percussion, figured bass, other instruments.
81–89	MIDI generation (all sound-related issues).
90–99	Various other: compressed MusicXML files, compatibility with broken MusicXML files exported by other applications.

Some of the categories (in particular, the exact item positioning and the MIDI generation) don't have any test cases yet.

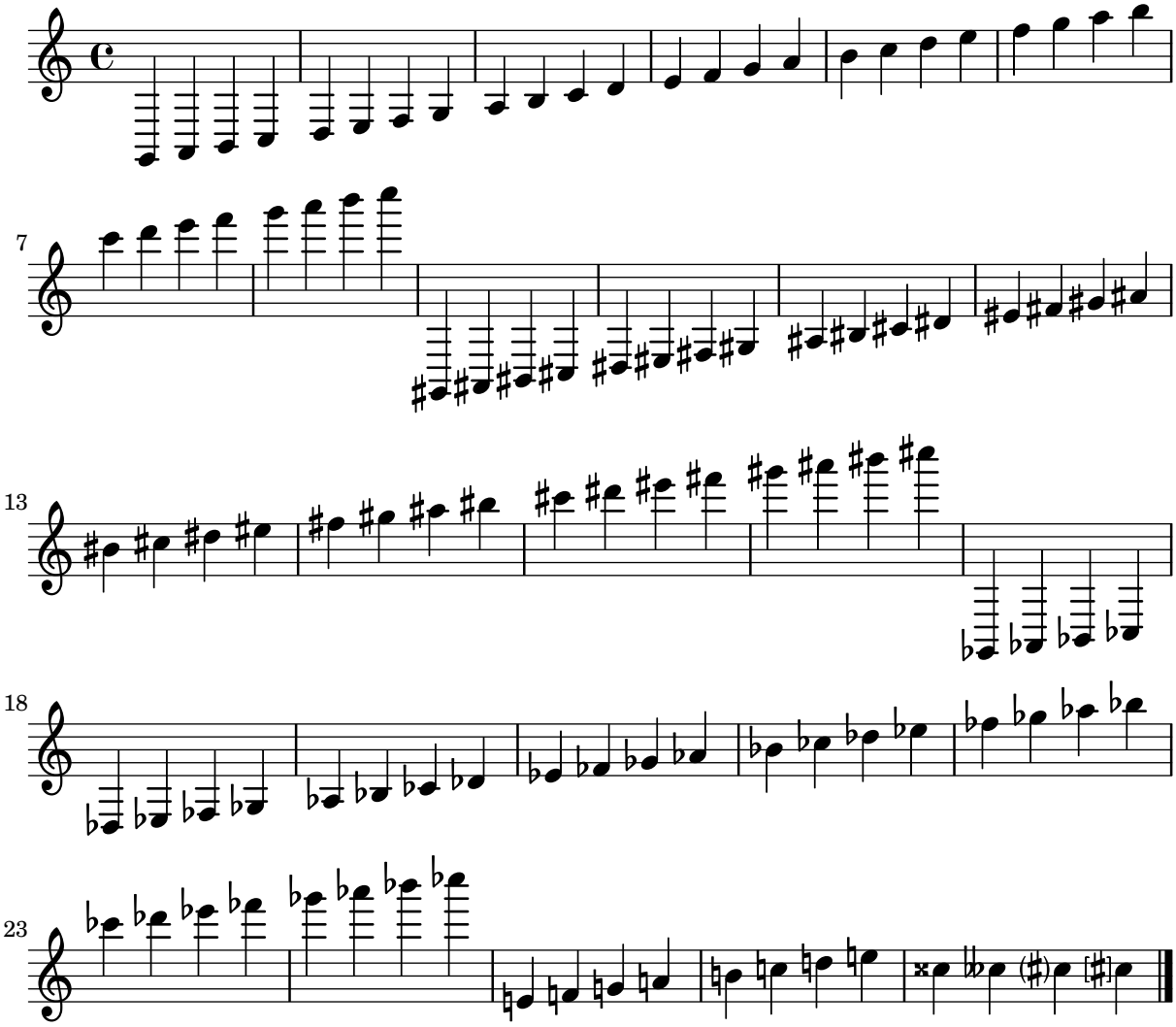
Test cases

01 ... Pitches

01a-Pitches-Pitches.xml

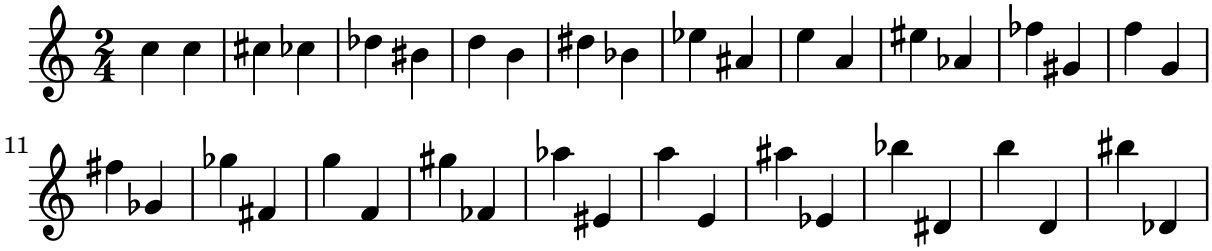
All pitches from G to c'''' in ascending steps. First without accidentals, then with a sharp, and then with a flat accidental.

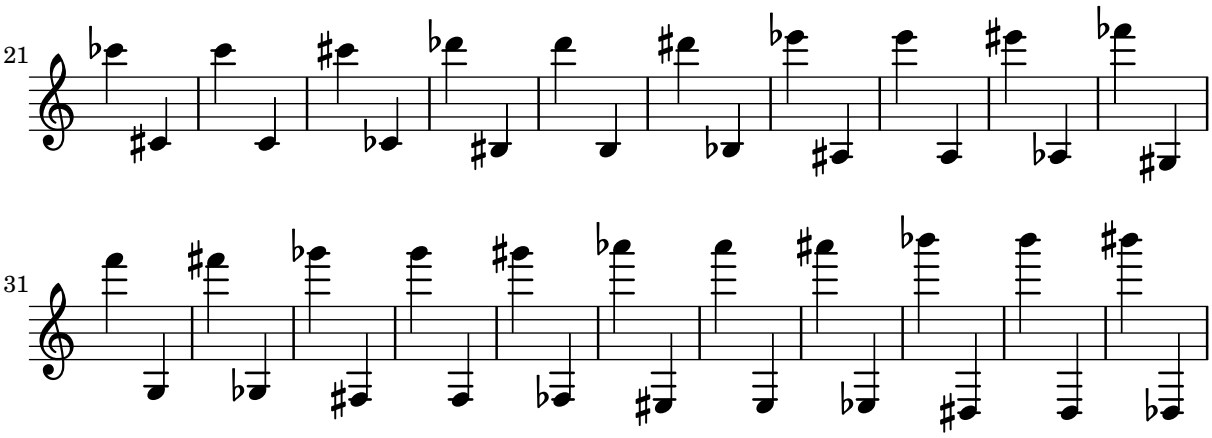
Measures 25 and 26 show explicit natural accidentals; measure 27 displays double alterations, cautionary, and editorial accidentals.



01b-Pitches-Intervals.xml

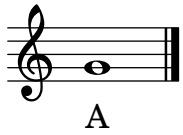
All pitch intervals in ascending jump size.





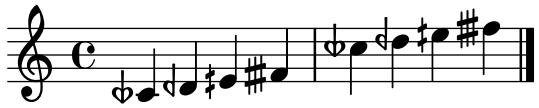
01c-Pitches-NoVoiceElement.xml

The <voice> element of notes is optional in MusicXML. Here, there is one note with lyrics, but without a voice assigned.



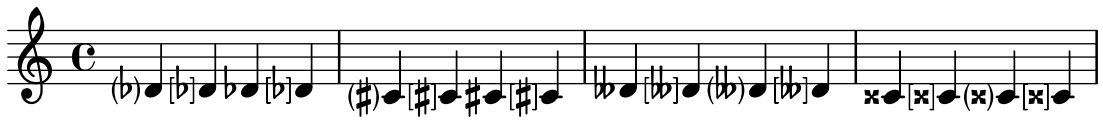
01d-Pitches-Microtones.xml

Some microtones: c flat-and-a-half, d half-flat, e half-sharp, f sharp-and-a-half; once in the lower and once in the upper region of the staff.



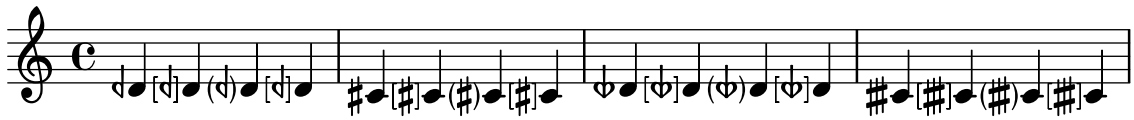
01e-Pitches-ParenthesizedAccidentals.xml

Accidentals have the attributes ‘cautionary’, ‘editorial’, ‘parenthesized’, and ‘bracketed’. The first two measures each have a cautionary accidental, an editorial, a cautionary with parentheses off, and an editorial and cautionary accidental. The next two measures each have a normal accidental, a bracketed, a parenthesized, and a bracketed and parenthesized accidental.



01f-Pitches-ParenthesizedMicrotoneAccidentals.xml

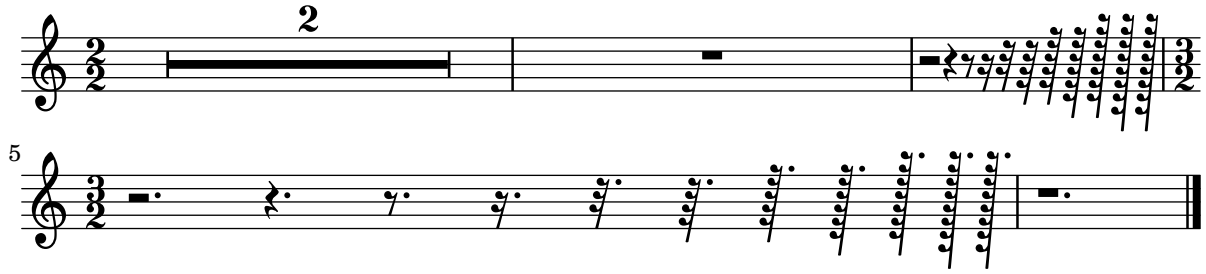
Microtone accidentals can be cautionary or editorial. Each measure has a normal accidental, an editorial, a cautionary, and an editiorial and cautionary accidental.



02 ... Rests

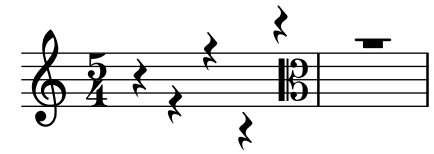
02a-Rests-Durations.xml

All different rest lengths: A two-bar multi-measure rest, a whole rest, a half rest, etc., until a 1024th-rest, then the same with dotted durations. The last bar is a full-measure rest with the attribute ‘measure="no"’.



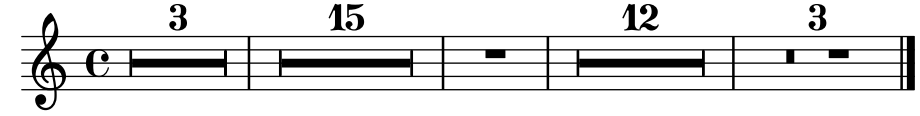
02b-Rests-PitchedRests.xml

Rests can have explicit pitches to position them vertically. In the first bar, the first rest has no explicit pitch and should use the default position, while the remaining rests are explicitly positioned at pitches E4, F5, A3, and C6. The second bar holds a full-measure rest at pitch G4 (within an alto clef).



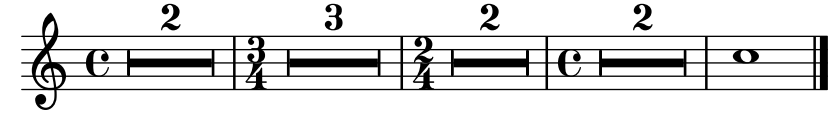
02c-Rests-MultiMeasureRests.xml

Five multi-measure rests: 3 measures, 15 measures, 1 measure, 12 measures, and finally 3 measures with the ‘use-symbols’ attribute set.



02d-Rests-Multimeasure-TimeSignatures.xml

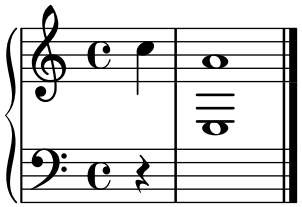
Multi-measure rests should always be converted into durations that are multiples of the time signature.



02e-Rests-NoType.xml

In some cases, a <rest> element misses the <type> child (this happens, for example, with voices in Finale, where you don’t manually insert a rest).

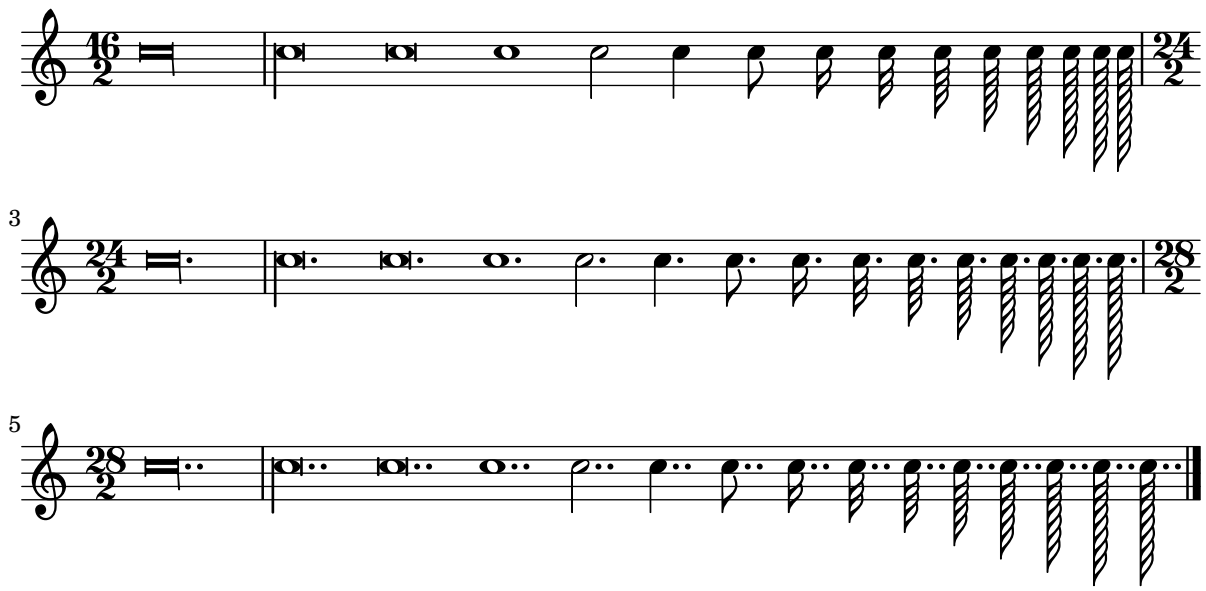
The second note in voice 2 misses a <staff> element; it is thus positioned in the upper staff.



03 ... Rhythm

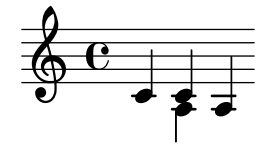
03a-Rhythm-Durations.xml

All note durations, from maxima, long, brevis, whole, etc., until 1024th. First with their plain values, then dotted, and finally double-dotted.



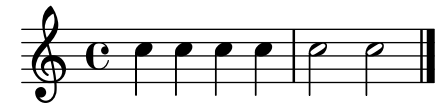
03b-Rhythm-Backup.xml

Two voices with a <backup> element that does not jump to the beginning of the measure for voice 2 but to the second beat. Voice 1 covers beats 1 and 2, and voice 2 covers beats 2 and 3. There is no rest or note for uncovered beats.



03c-Rhythm-DivisionChange.xml

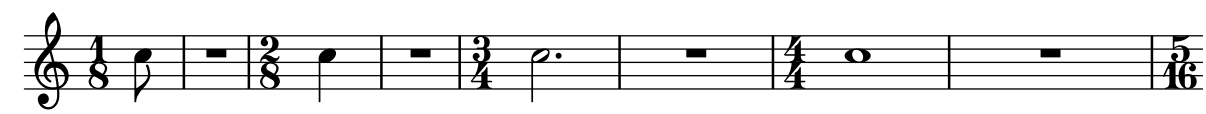
Although uncommon, the divisions of a quarter note can change somewhere in the middle of a MusicXML file. Here, the first half measure uses a division of 1, which then changes to 8 in the middle of the first measure and to 38 in the middle of the second measure.

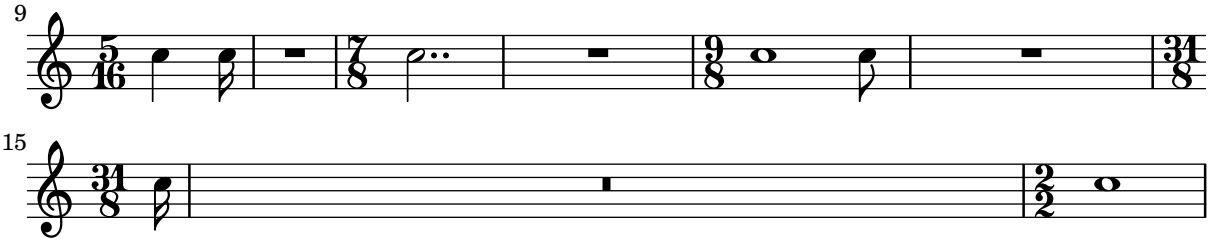


03d-Rhythm-DottedDurations-Factors.xml

Several durations can be written with dots. For multi-measure rests it is also possible to have durations that cannot be expressed with dotted notes (like 5/8).

In bar 15 there is only a 16th note and no rest for the remaining part of the bar.

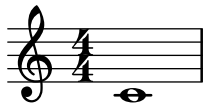




03e-Rhythm-No-Divisions.xml

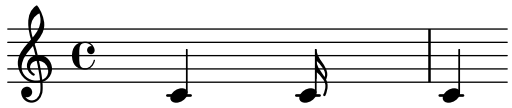
No <divisions> element. The generally agreed default value is 1, and MusicXML version 4.1 will mention this explicitly.

This test holds a single whole note.



03f-Rhythm-Forward.xml

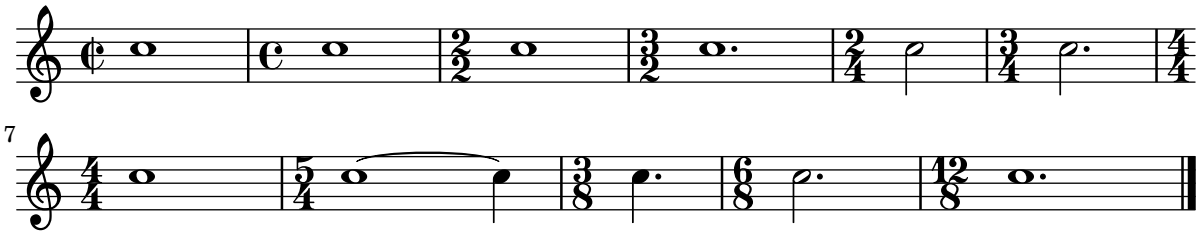
A voice with three <forward> elements in the first measure, putting a quarter note on the second beat, a 16th note on the fourth beat, then filling up the measure to have the correct length. There are no visible rests.



11 ... Time signatures

11a-TimeSignatures.xml

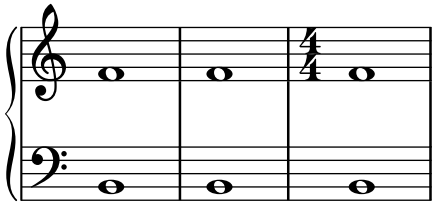
Various time signatures: 2/2 (alla breve), 4/4 (C), 2/2, 3/2, 2/4, 3/4, 4/4, 5/4, 3/8, 6/8, 12/8.



11b-TimeSignatures-NoTime.xml

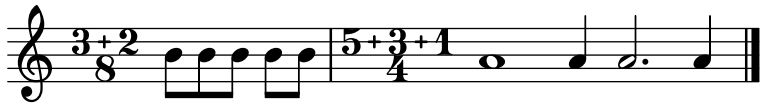
A score without a time signature at the beginning (but with <key> and <clef> elements). The second bar sets a 2/2 time signature with 'print-object="no"' for both staves, and the third bar sets a 4/4 time signature with 'print-object="no"' only for the lower staff.

Whether a time signature is actually displayed at the very beginning (if there is no <time> element) is application-dependent.



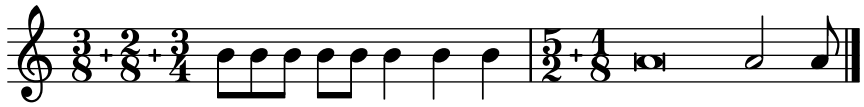
11c-TimeSignatures-Complex.xml

Complex time signatures with the same denominator: (3+2)/8 and (5+3+1)/4.



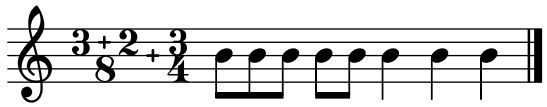
11d-TimeSignatures-ComplexMultiple.xml

Complex time signatures with separate fractions displayed: 3/8+2/8+3/4 and 5/2+1/8.



11e-TimeSignatures-ComplexMixed.xml

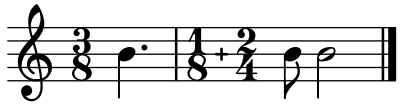
Complex time signatures of mixed type: (3+2)/8+3/4.



11f-TimeSignatures-SymbolMeaning.xml

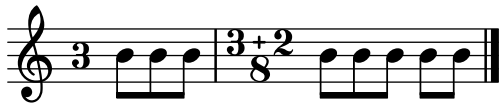
Semantically invalid use cases for the ‘symbol’ attribute of <time>. The actual display is application-dependent.

This test shows a 3/8 time signature with ‘symbol="cut"’ and a complex 1/8+2/4 time signature with ‘symbol="single-number"’.



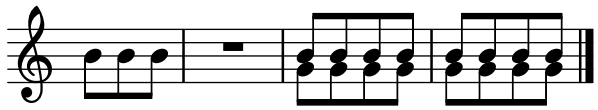
11g-TimeSignatures-SingleNumber.xml

Two time signatures (3/8 and 3+2/8) having the attribute ‘symbol="single-number"’ (which is a misnomer; it actually means to show only the numerator part).



11h-TimeSignatures-SenzaMisura.xml

A <senza-misura> time signature. The first bar has three eighth notes, the second bar contains a full-measure rest (indicated by setting ‘measure="yes"’ for the <rest> element) with a length of a dotted half note, and both the third bar contains four eighth notes (in two voices).

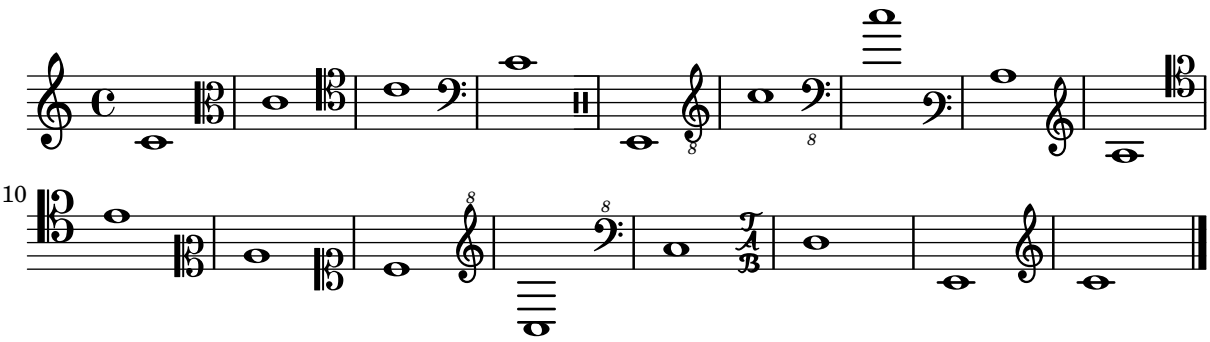


12 ... Clefs

12a-Clefs.xml

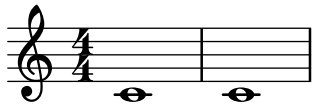
Various clefs: G, C, F, percussion, TAB, and 'none' (in measure 16). Some clefs are also shown with transposition and on other staff lines than their default; the displayed note is always C4.

Each measure shows a different clef; only measure 17 has the same treble clef as the first measure.



12b-Clefs-NoKeyOrClef.xml

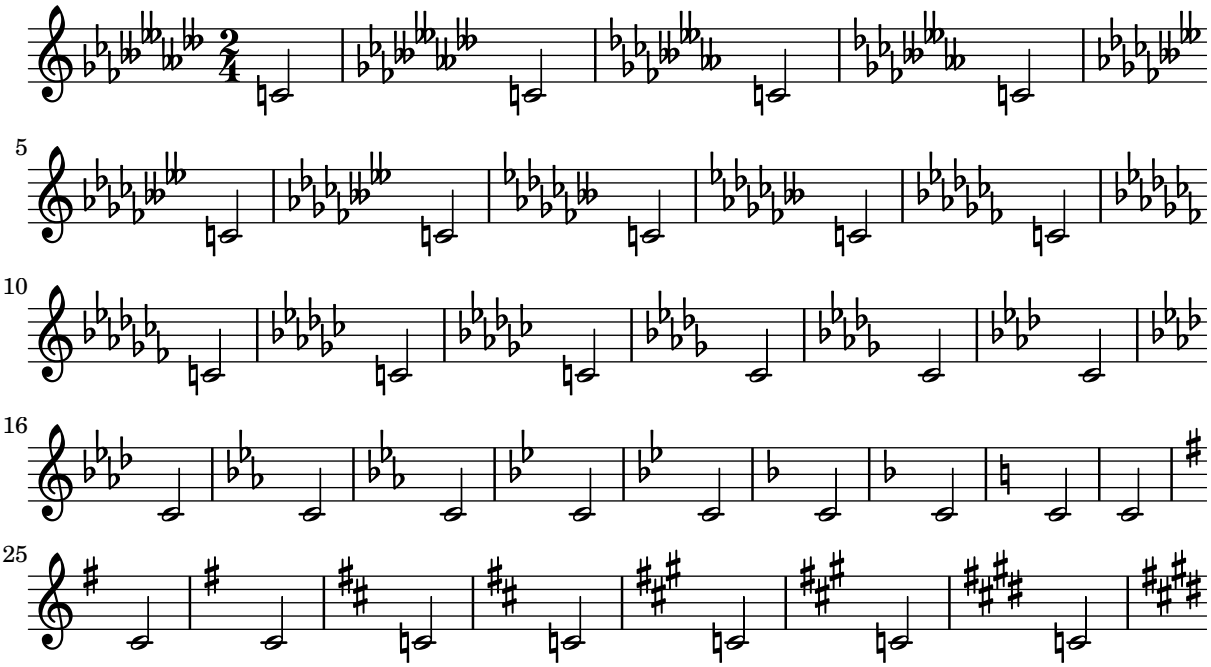
A score without a <key> or <clef> element (but with <time>). The default (4/4 in treble clef) should be used.

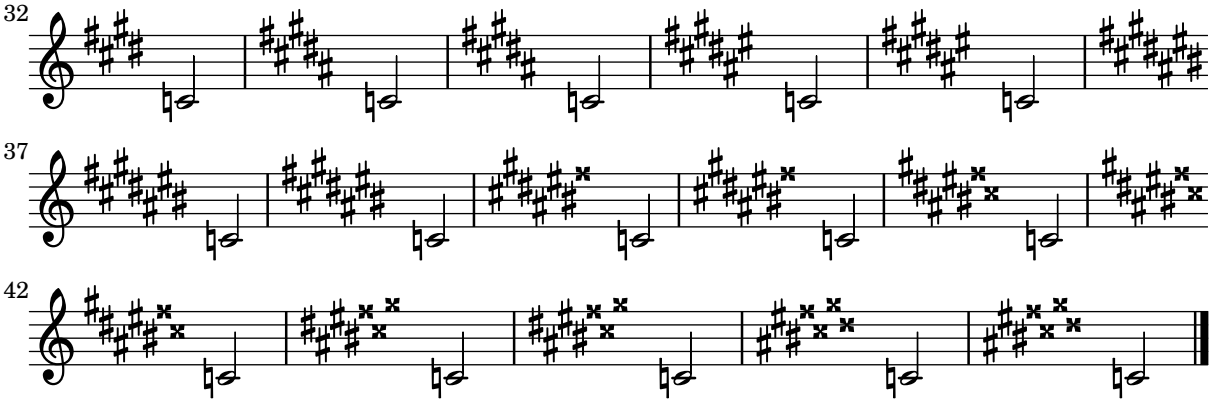


13 ... Key signatures

13a-KeySignatures.xml

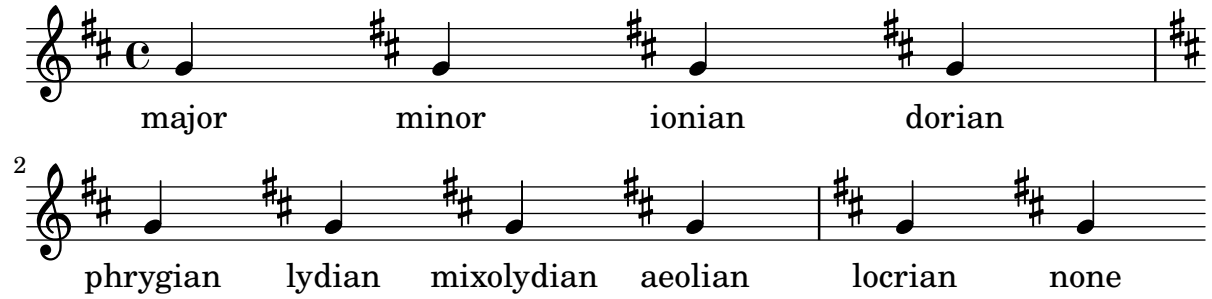
Various key signatures: from 11 flats to 11 sharps. Each signature is shown twice, with one measure in major and the other measure in minor.





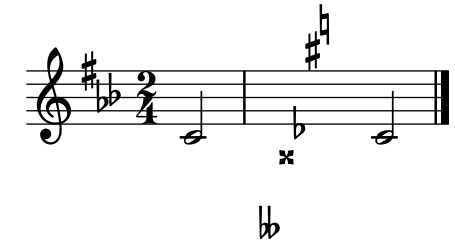
13b-KeySignatures-ChurchModes.xml

All different modes: ‘major’, ‘minor’, ‘ionian’, ‘dorian’, ‘phrygian’, ‘lydian’, ‘mixolydian’, ‘aeolian’, ‘locrian’, and ‘none’. All modes are given with two sharps.



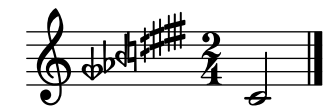
13c-KeySignatures-NonTraditional.xml

Non-traditional key signatures, where each alteration is separately given. The first signature is [f sharp, a flat, b flat]. The second one is [c flat-flat, g sharp-sharp, d flat, b sharp, f natural], with explicitly selected octaves for each alteration.



13d-KeySignatures-Microtones.xml

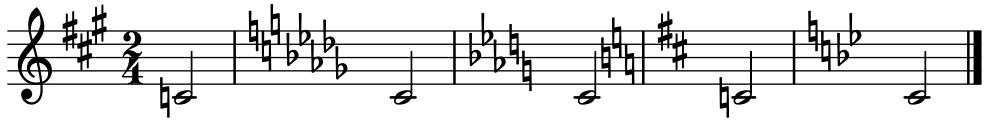
Non-traditional key signatures with microtone alterations: [g flat-and-a-half, a flat, b half-flat, c natural, d half-sharp, e sharp, f sharp-and-a-half].



13e-KeySignatures-Cancel.xml

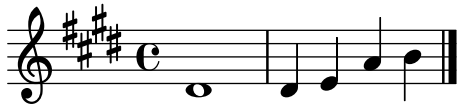
Tests of key signature cancellation: in measure 2 it is positioned at the default location (which usually means that the cancellation comes immediately after the bar line), in measure 3 it uses the attribute ‘location="right"’ (i.e., the cancellation comes after the new key signature), in measure 4 it uses ‘location="before-barline"’, and in measure 5 it uses the attribute ‘location="left"’ (the cancellation comes before the new key signature).

The <cancel> element's value (4) in the last measure intentionally doesn't correspond to the value of the previous <fifths> value (2) for testing purposes.



13f-KeySignatures-Visible.xml

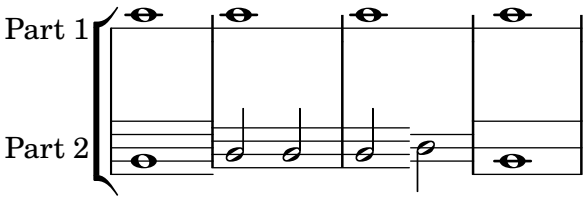
Test the 'print-object' attribute of key signatures. The signature at the beginning of the second bar is a flat major and should be invisible; the following notes d flat, e flat, a flat, and b flat shouldn't have a flat accidental.



14 ... Staff attributes

14a-StaffDetails-LineChanges.xml

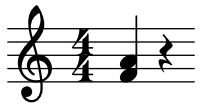
Testing staff line configurations and pitched notes. The number of staff lines can be modified by using the <staff-lines> child of the <staff-details> element. This can happen globally (the first staff has one line globally) or during the part at the beginning of a measure and even inside a measure (the second part has five lines initially, four at the beginning of the second measure, and three starting in the middle of the third measure). The fourth measure in the lower staff has five lines again but uses the 'print-object="no"' attribute in the <line-detail> element to suppress the second and fourth staff line.



21 ... Chorded notes

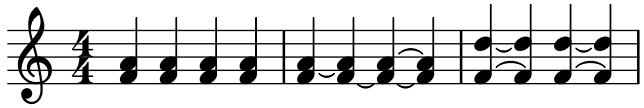
21a-Chord-Basic.xml

A chord consisting of two quarter notes followed by a quarter rest.



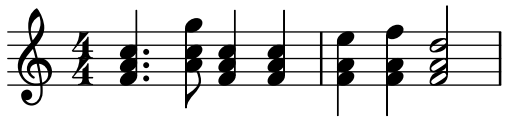
21b-Chords-TwoNotes.xml

Some subsequent (identical) two-note chords. In the second bar, the chords are tied (top note, bottom note, both notes). In the third bar, the unnatural directions of the ties are enforced with the 'placement' attribute (between chords one and two) and the 'orientation' attribute (between chords three and four)



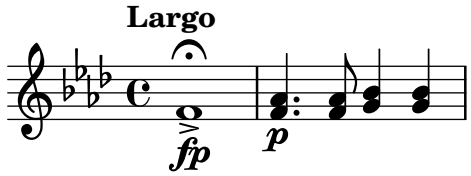
21c-Chords-ThreeNotesDuration.xml

Some three-note chords, with various durations.



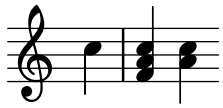
21d-Chords-SchubertStabatMater.xml

There are chords in the second measure, after several ornaments in the first measure and a ‘p’ at the beginning of the second measure.



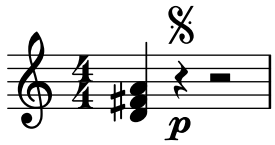
21e-Chords-PickupMeasures.xml

A test for proper chord detection after a pickup measure (i.e., the first beat of measure 1 is not aligned with a multiple of the time signature).



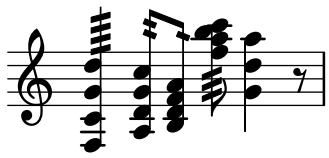
21f-Chord-ElementInBetween.xml

Between the individual notes of a chord there can be <direction> elements, which already belong to the next <note> element after the current one. The segno and the piano sign should be attached to the rest after the chord.



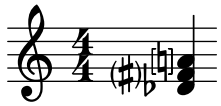
21g-Chords-Tremolos.xml

Different tremolos on different chord notes. The tremolo on the last chord is of type ‘unmeasured’.



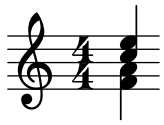
21h-Chord-Accidentals.xml

A chord with normal, cautionary, and editorial accidentals (from bottom to top).



21i-Chord-DifferentVoices.xml

A chord consisting of four quarter notes, with the upper two notes in voice “X” and the lower two notes in voice “Y”. It is up to the application to handle this non-sensical situation gracefully.



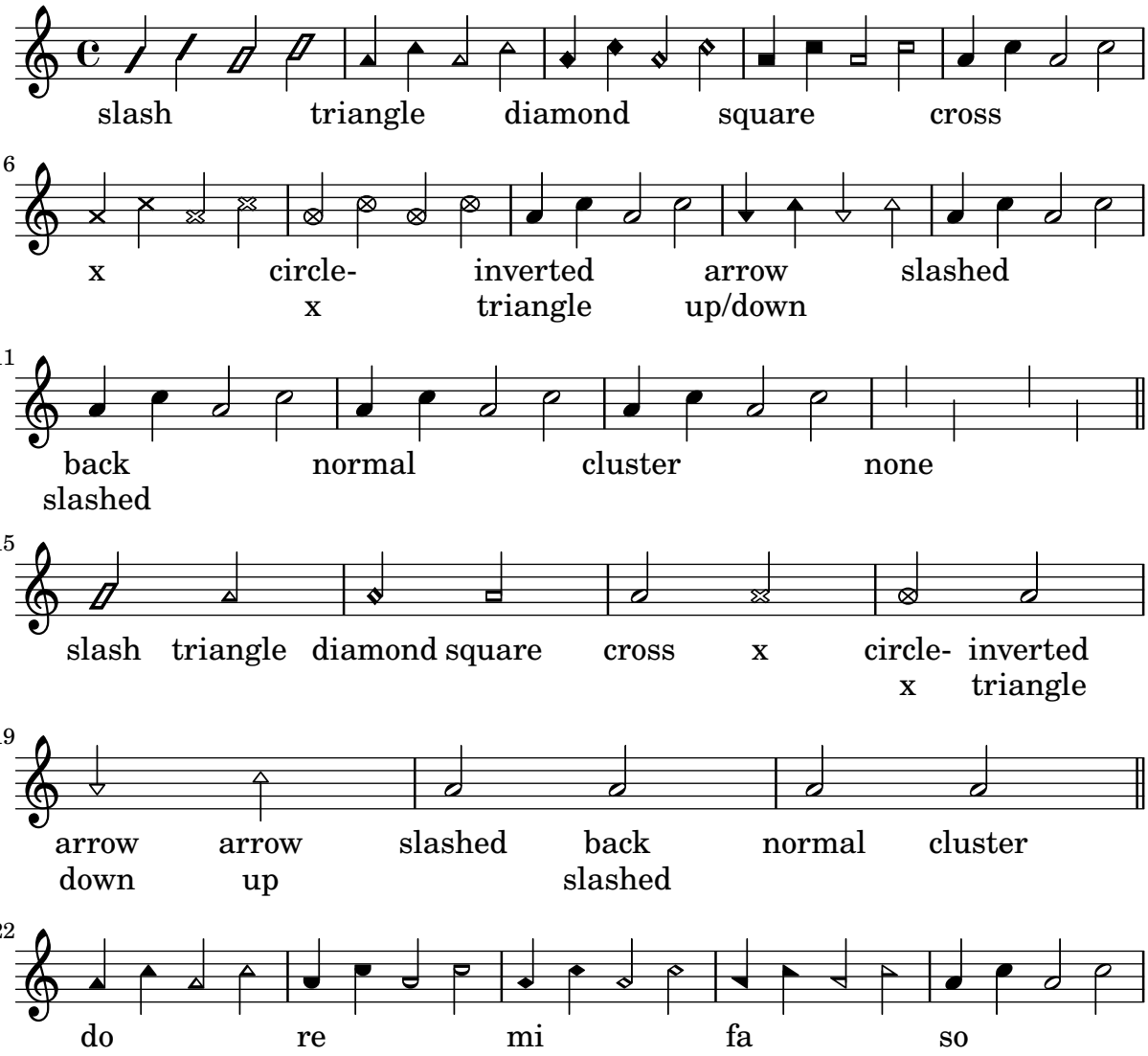
22 ... Note settings, heads, etc.

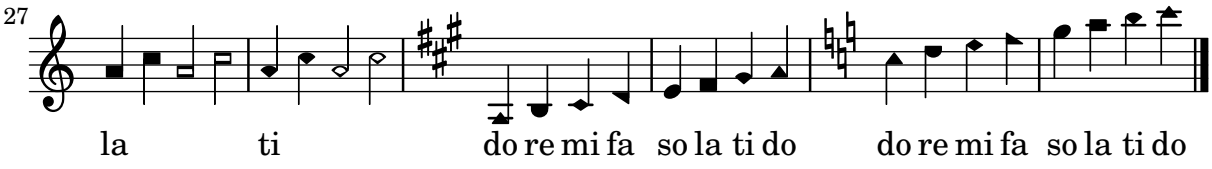
22a-Noteheads.xml

Different note styles, using the <notehead> element. First, each note head style is printed with four quarter notes, two with filled heads, two with unfilled heads, where first the stem is up and then the stem is down.

After that, starting with measure 16, each note head style is printed with a half note (should have an unfilled head by default).

Finally, starting with measure 23, Aiken note head styles are tested, once with stem up and once with stem down.

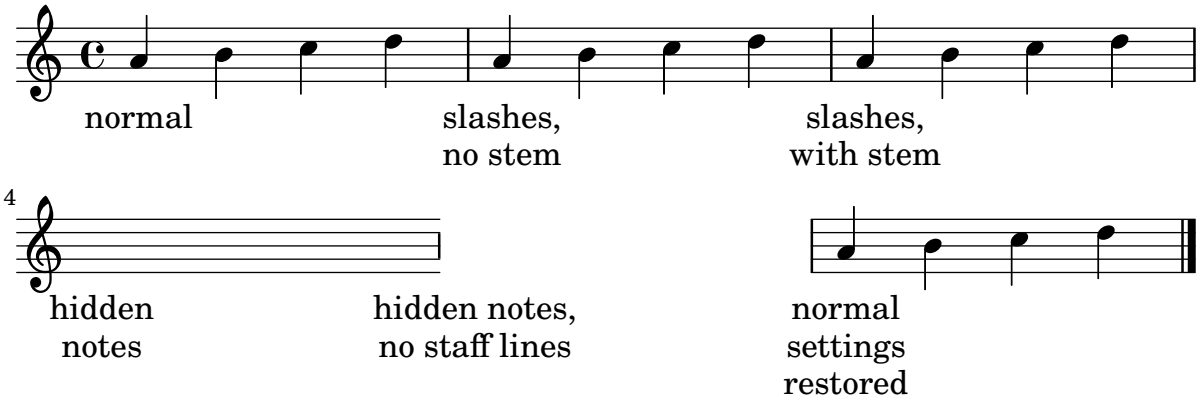




22b-Staff-Notestyles.xml

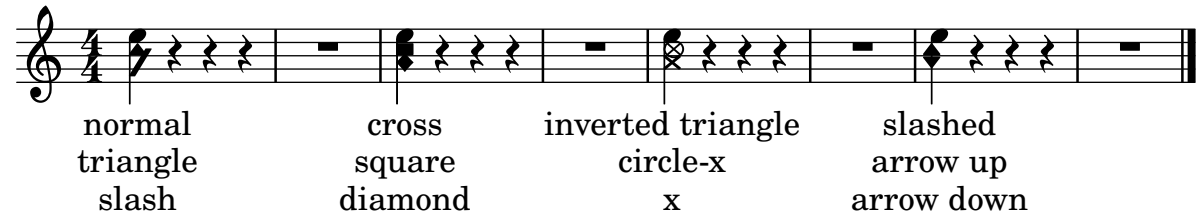
Staff-connected note styles: slash notation, hidden notes (with and without hidden staff lines).

The lyrics (used as descriptive text) in bars 4 and 5 are visible due to the 'print-lyric="yes"' attribute of <note>.



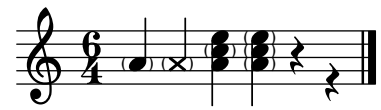
22c-Noteheads-Chords.xml

Different note styles for individual notes inside a chord, using the <notehead> element.



22d-Parenthesized-Noteheads.xml

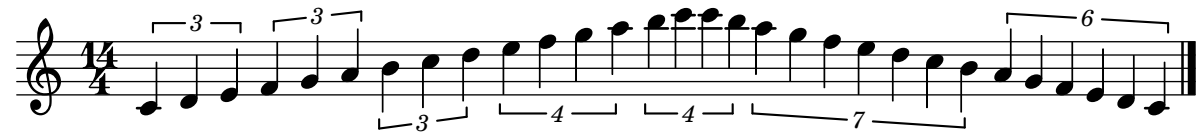
Parenthesized note heads. A normal parenthesized note, a parenthesized note with an 'x' note head, a three-note chord with the middle note parenthesized, a three-note chord with all notes parenthesized, a normal quarter rest in parentheses, and a pitched quarter rest in parentheses.



23 ... Triplets, Tuplets

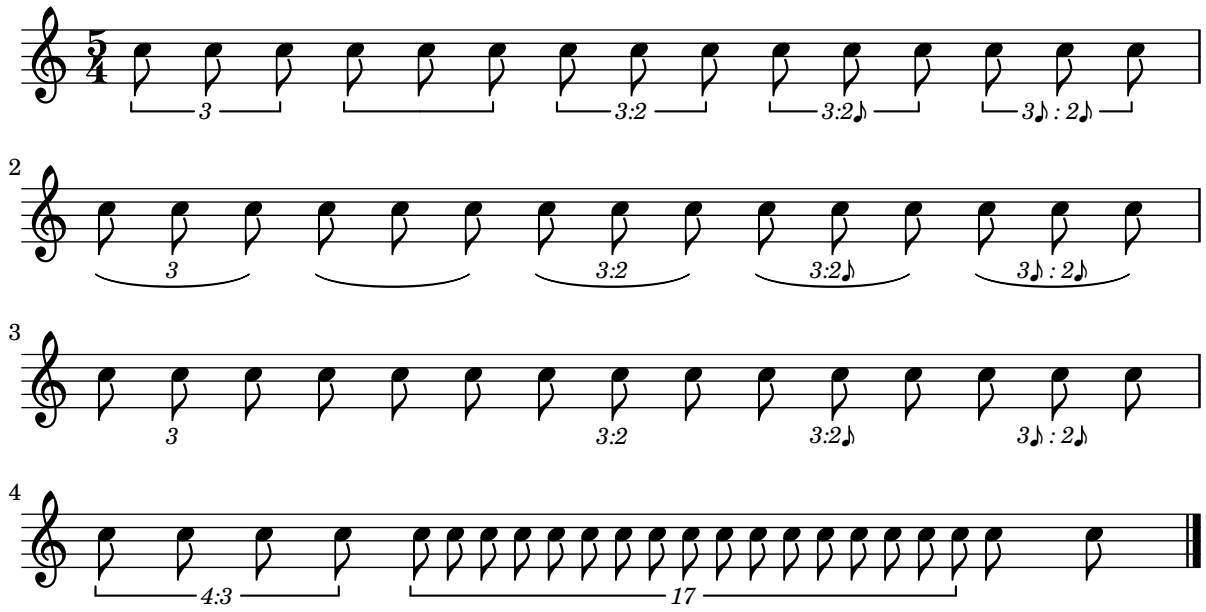
23a-Tuplets.xml

Some tuplets (3:2, 3:2, 3:2, 4:2, 4:1, 7:3, 6:2) with the default tuplet bracket displaying the number of actual notes played. The second tuplet does not have the 'number' attribute set.



23b-Tuplets-Styles.xml

Different tuplet styles: default, none, x:y, x:y-note, and x-note:y-note; each with bracket, slur, and without bracket. Finally, non-standard 4:3 and 17:2 tuplets are given in the last measure.



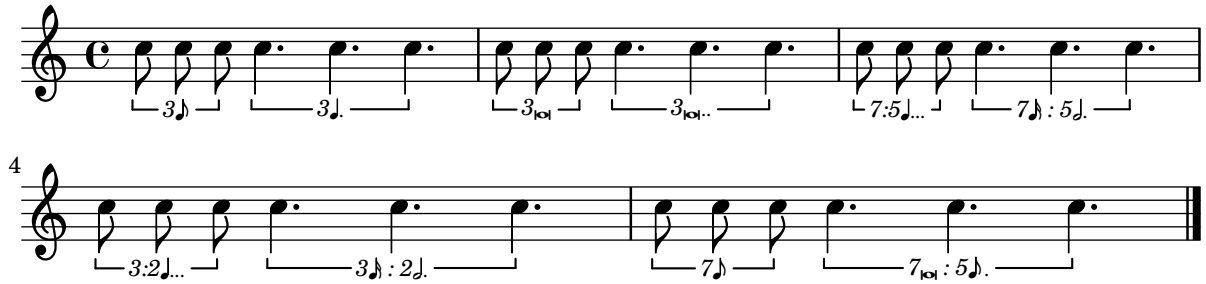
23c-Tuplet-Display-NonStandard.xml

Displaying tuplet note types that might not coincide with the displayed note. The tuplets in measure 1 derive the type from the note, the tuplets in measure 2 use the <normal-type> and <normal-dot> children of the <time-modification> element, and the remaining tuplets use the <tuplet-type> and <tuplet-dot> children of the <tuplet> element.

The tuplets in measure 3 specify both a number of notes and a type inside the <tuplet-actual> and <tuplet-normal> elements, the ones in measure 4 specify only a note type (but no number), and the ones in measure 5 specify only a number of tuplet notes (but no type, which is deduced from the note's type).

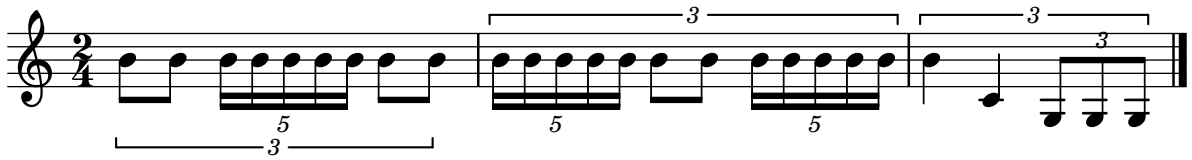
The first tuplets of measures 3 to 5 use the attribute 'display-type="actual"', the second ones 'display-type="both"'.

FIXME: The tuplet-normal should coincide with the real notes!



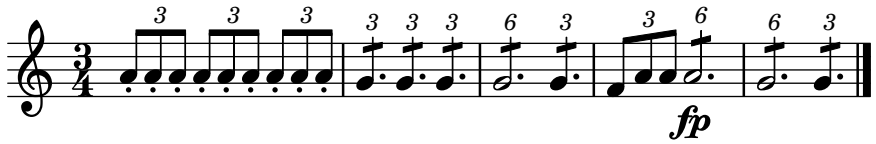
23d-Tuplets-Nested.xml

Tuplets can be nested. The first bar contains a 5:2 tuplet (with 16th notes) in the middle of a 3:2 tuple (with eighth notes). The second bar has a 5:2 tuplet at the beginning and at the end (with the tuplet number forced below) of a 3:2 tuple (with the bracket forced above). The third bar changes the <divisions> value and contains a triplet with eighths on the last beat of another triplet with quarter notes.



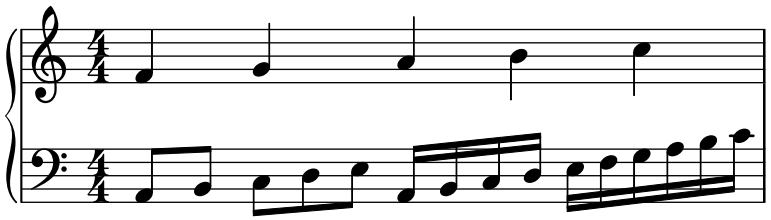
23e-Tuplets-Tremolo.xml

Tremolo tuplets. The first bar contains normal eighth triplets with staccato points, the second bar holds three tremolo tuplets, the third bar holds a sextuple followed by a triplet, the fourth bar contains a sextuple (starting on the second beat) with a 'fp' sign, and the fifth bar is identical to the third bar.



23f-Tuplets-DurationButNoBracket.xml

Tuplets without brackets, using only <time-modification>. The upper staff contains two quarters followed by a quarter triplet. The lower staff holds two eighths, an eighths triplet, four 16th notes, and a 16th sextuplet.



24 ... Grace notes

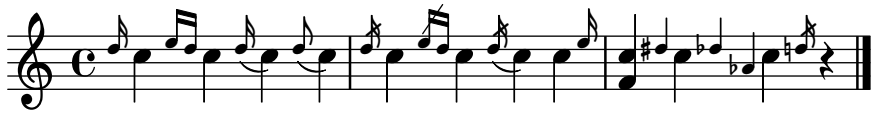
24a-GraceNotes.xml

Different kinds of grace notes.

First measure: single 1/16 grace note, two beamed 1/16 grace notes, 1/16 appoggiatura, 1/8 appoggiatura.

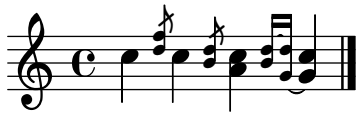
Second measure: slashed single 1/16 grace note, two beamed 1/16 grace notes (with both notes marked as slashed), 1/16 acciaccatura, 1/16 grace note (without slash) right before the bar line.

Third measure: no grace note before chord, 1/4 grace note with sharp, two 1/4 grace notes with flats, 1/16 slashed grace note with natural before a quarter rest.



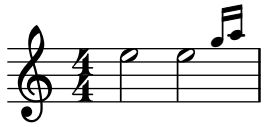
24b-ChordAsGraceNote.xml

Chords as grace notes. The last (unslashed and beamed) grace group consists of two chords with one tie between the two grace chords and another tie between the last grace chord and the main chord.



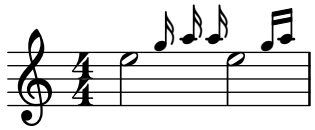
24c-GraceNote-MeasureEnd.xml

A grace note that appears at the measure end (without any 'steal-from-*' attribute set). Some applications need to convert this into an after-grace.



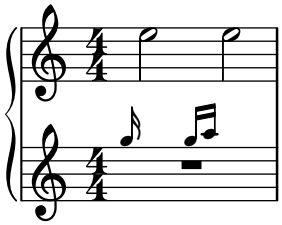
24d-AfterGrace.xml

Some grace notes and after-graces indicated by 'steal-time-previous' (for the first grace note) and 'steal-time-following' (for the second one). The remaining grace notes have no such attribute.



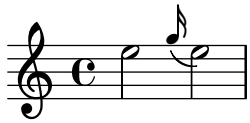
24e-GraceNote-StaffChange.xml

Grace notes on a different staff than the actual notes.



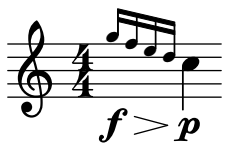
24f-GraceNote-Slur.xml

A grace note with a slur to the actual note. The <grace> element has no 'slash' attribute; since MusicXML does not provide a default value it is up to the application to interpret the grace note as an acciaccatura (with slash) or an appoggiatura (without slash).



24g-GraceNote-Dynamics.xml

Grace notes in combination with dynamics. The 'f' sign is located on the first grace note (using a <direction> element), followed by a diminuendo wedge, and the 'p' sign is on the main beat (again using <direction>).

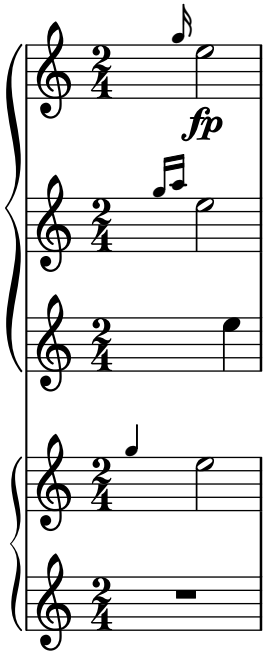


24h-GraceNote-Simultaneous.xml

Simultaneous grace notes and grace note groups of different length starting a part or a voice.

The topmost three staves are voices 1 to 3 of part ‘P1’, with no grace notes in the third staff and music starting on the second beat. There is also an ‘fp’ on the main note of the first staff.

The bottommost two staves are voices 1 and 2 of part ‘P2’, with no grace notes in the lowest staff.

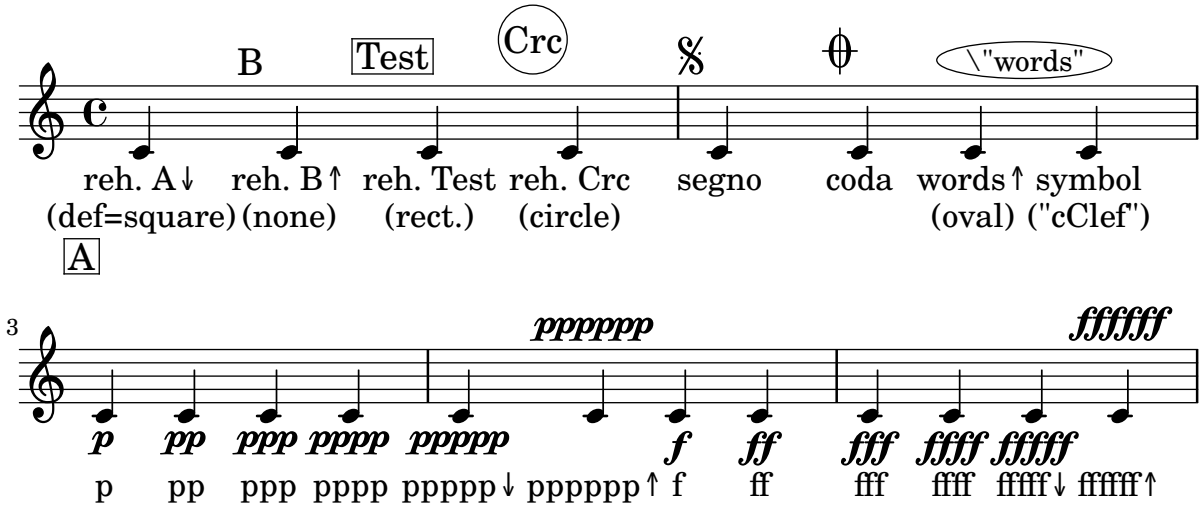


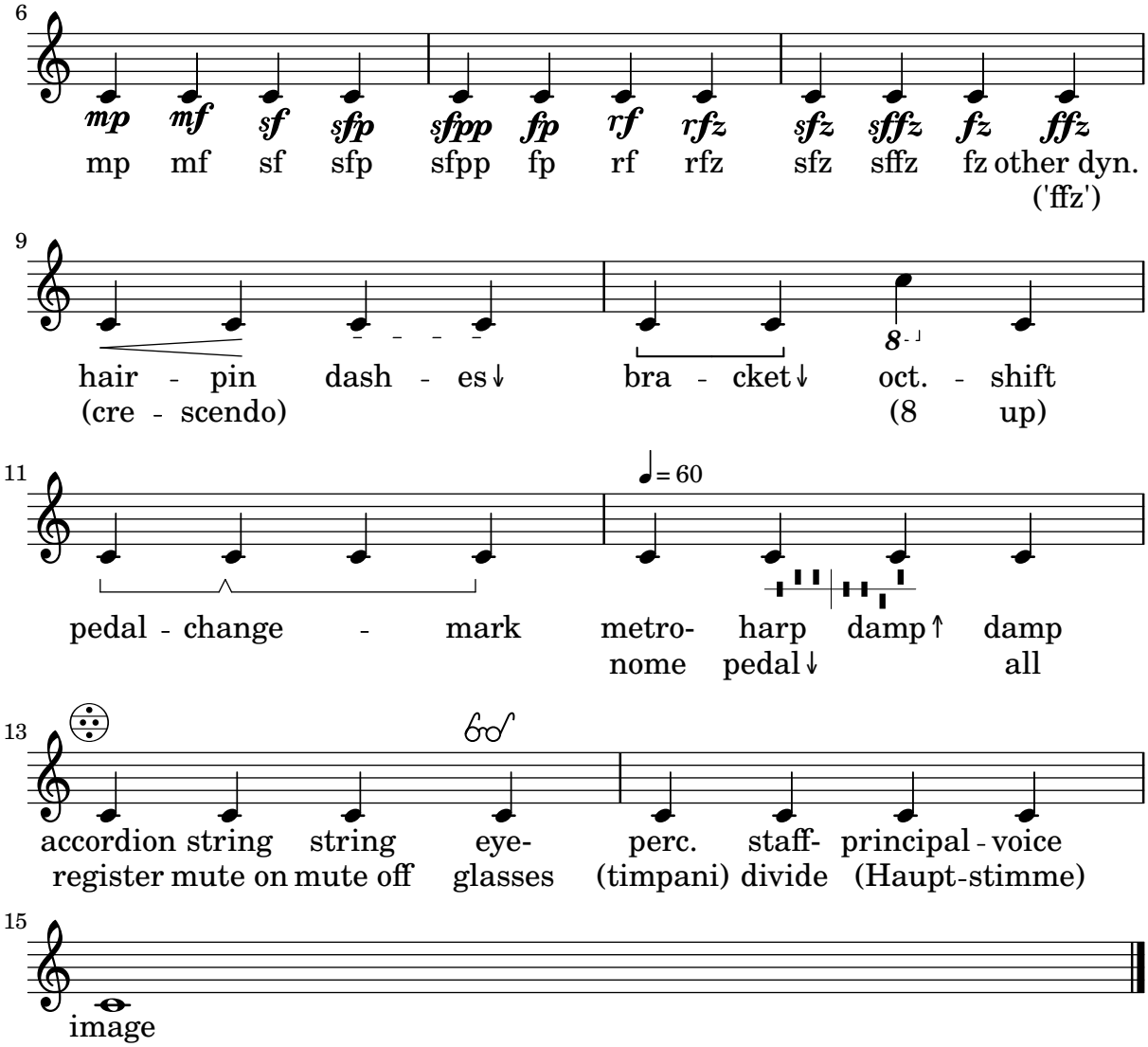
31 ... Dynamics and other single symbols

31a-Directions.xml

All <direction> elements defined in MusicXML. The lyrics for each note describes the direction element assigned to that note. Not marked with lyrics is a <scordatura> element at the very beginning.

A trailing up-arrow indicates a ‘placement="above"’ attribute, a down-arrow means ‘placement="below"’.





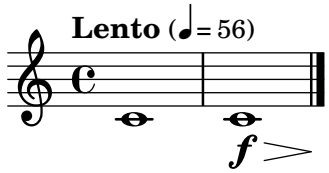
31b-Directions-Order.xml

Using <offset> it is possible to make successive <direction> elements look like being concatenated. However, it is a bad idea in general to do that because it makes the rendering dependent on a program's score formatting.

In the first bar, the first <direction> element contains a tempo mark and is directly followed by another <direction> element containing a metronome mark that is moved to the right by a positive <offset> element.

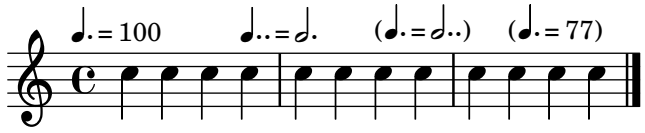
In the second bar, the first <direction> element holds the start of a diminuendo wedge; it is directly followed by another <direction> element containing a dynamics mark. Since the wedge has an <offset> element with a positive value while the dynamics has no such element at all, the dynamics precedes the wedge.

The wedge ends at or right before the final bar line (i.e., the <direction> element ending the wedge comes after the last <note> element).



31c-MetronomeMarks.xml

Tempo markings (every third quarter): ‘quarter.=100’, ‘quarter..=half.’, ‘(quarter.=half..)’, ‘(quarter.=77)’.



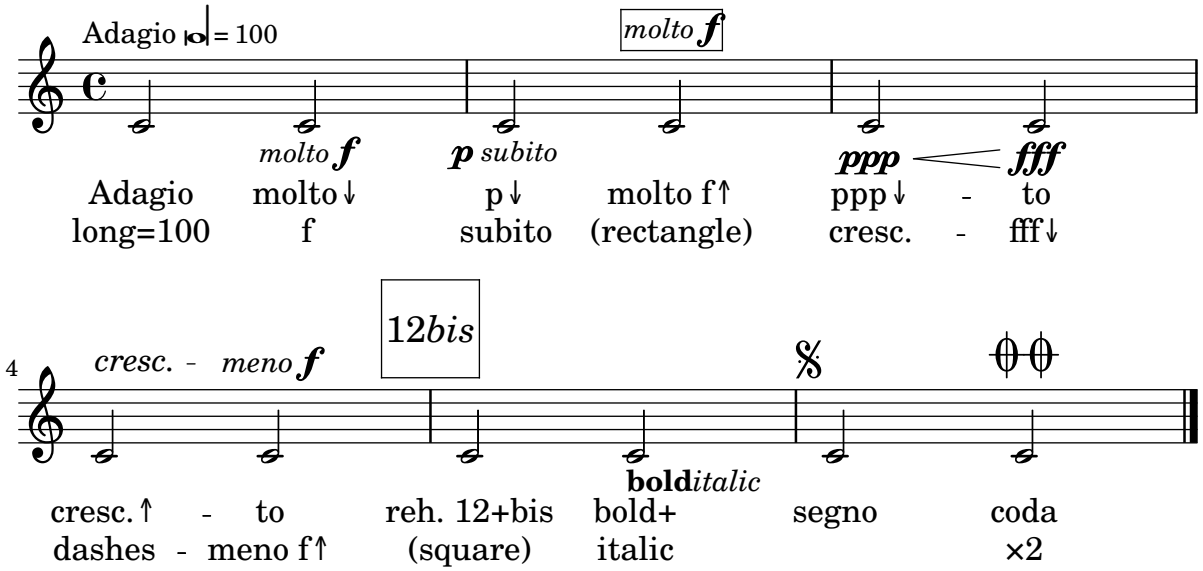
31d-Directions-Compounds.xml

This tests various combinations of <direction> children. The lyrics for each note describe the compound elements assigned to that note.

The first ‘molto f’ uses <words>molto <words>, i.e., it omits the ‘xml:space’ attribute. This makes the rendering of the space between ‘molto’ and ‘f’ implementation-dependent (and might be thus not rendered). The second ‘molto f’, together with ‘meno f’, uses ‘xml:space="preserve"’.

For demonstration purposes, there is no space between the words ‘bold’ and ‘italic’.

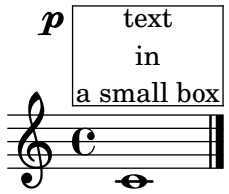
A trailing up-arrow indicates a ‘placement="above"’ attribute, a down-arrow means ‘placement="below"’.



31f-Direction-Multiline-Compounds.xml

A test that checks how newlines in <words> elements are supported.

Within a single <direction> element to be placed above the staff, the ‘p’ dynamic symbol gets followed by a single space, which in turn is followed by some boxed text that spreads over three lines and has the attribute ‘valign="center"’. The latter two also set the attribute ‘xml:space="preserve"’.



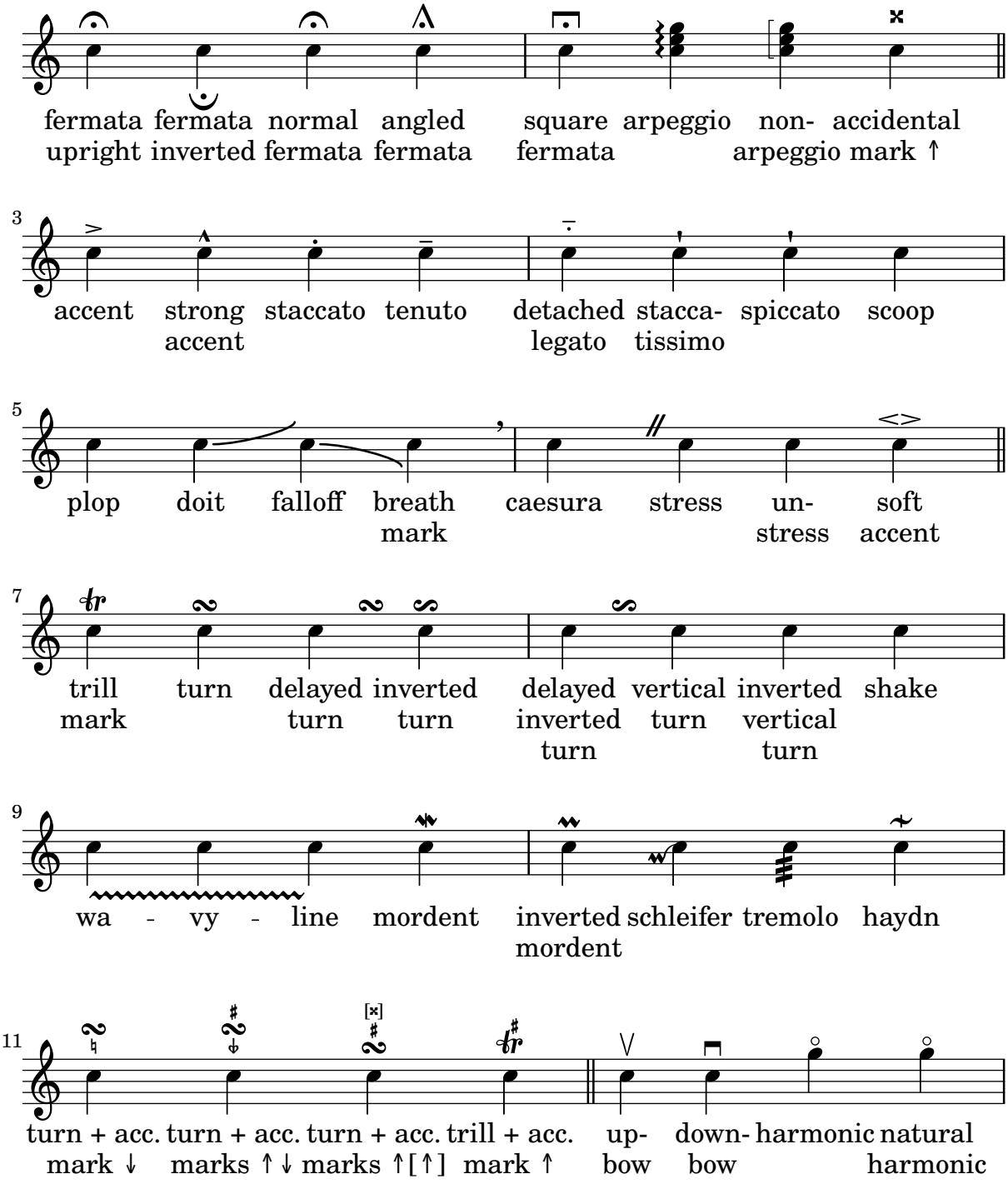
32 ... Notations and Articulations

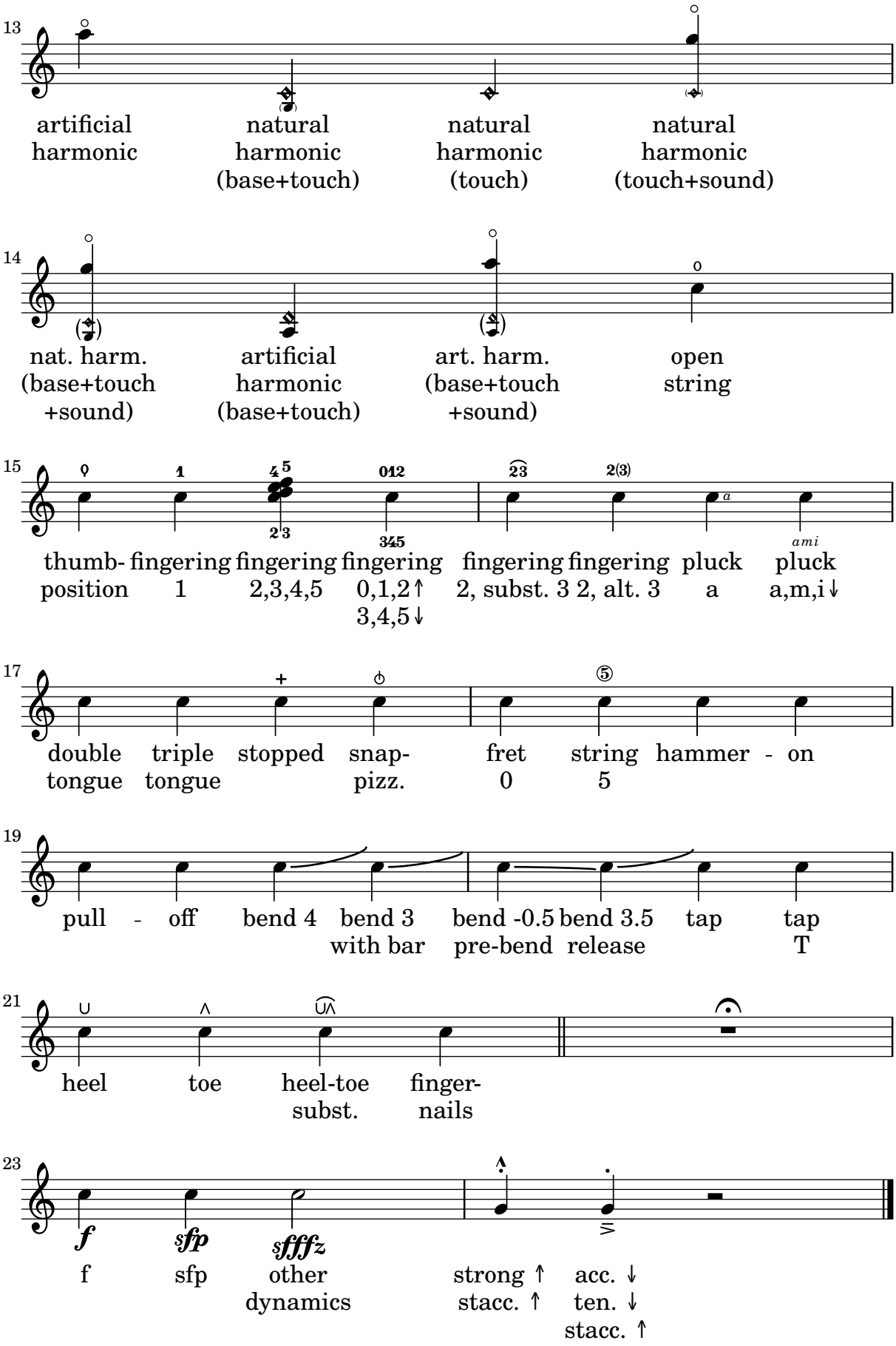
32a-Notations.xml

Most <notation> elements defined in MusicXML. The lyrics show the notation assigned to each note.

The third-last bar is a full-measure rest with a fermata.

A trailing up-arrow indicates a 'placement="above"' attribute, and a down-arrow means 'placement="below"'. An exception to that is the positioning of the natural below the turn in the first beat of measure 11: here, the position is determined by 'default-y' attributes.

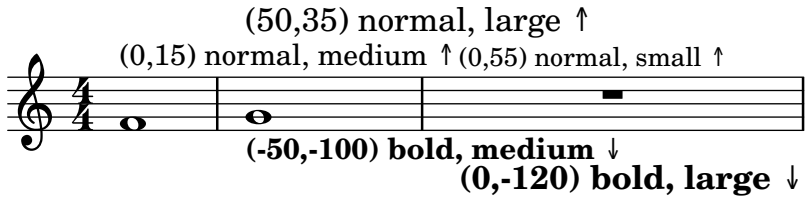



13
artificial harmonic
natural harmonic (base+touch)
natural harmonic (touch)
natural harmonic (touch+sound)
14
nat. harm. (base+touch +sound)
artificial harmonic (base+touch)
art. harm. (base+touch +sound)
open string
15
thumb-position
fingering 1
fingering 2,3,4,5
fingering 0,1,2↑ 3,4,5↓
fingering 2, subst. 3
fingering 2, alt. 3
pluck a
pluck a,m,i↓
17
double tongue
triple tongue
stopped
snap-pizz.
fret 0
string 5
hammer - on
19
pull - off
bend 4
bend 3 with bar
bend -0.5 pre-bend
bend 3.5 release
tap
tap T
21
heel
toe
heel-toe subst.
finger-nails
23
f
sfp
sffffz
f
sfp
other dynamics
strong ↑ stacc. ↑
acc. ↓ ten. ↓ stacc. ↑

32b-Articulations-Texts.xml

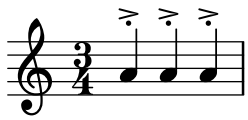
Text markup with different CSS font sizes, weights, horizontal positions (using 'default-x'), and vertical positions (using 'default-y'), seven in total. The four markups below the staff are positioned immediately before <measure> elements; they should be thus associated with the following bar line. One markup is also drawn in red.

A trailing up-arrow indicates a 'placement="above"' attribute, a down-arrow means 'placement="below"'.



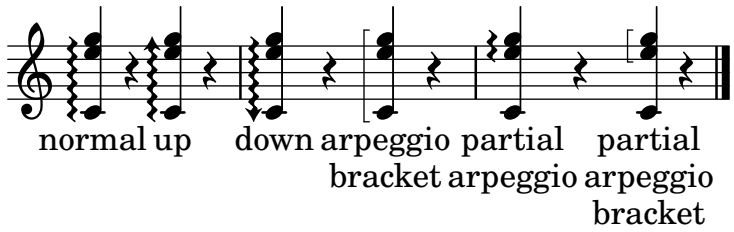
32c-MultipleNotationChildren.xml

It should not make any difference whether two articulations are given inside two different <notations> elements, inside two different <articulations> children of the same <notations> element, or inside the same <articulations> element. Thus, all three notes should have a staccato and an accent.



32d-Arpeggio.xml

Different arpeggio kinds and directions.



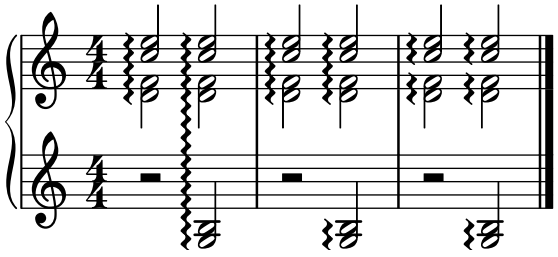
32e-Arpeggios-Cross.xml

Cross-voice and cross-staff arpeggios.

In the first bar, the <arpeggiate> elements all have the same 'number' attribute value, causing cross-staff arpeggios.

In the second bar, the elements in the two staves have different 'number' attribute values, causing the arpeggios to be connected staff-wise.

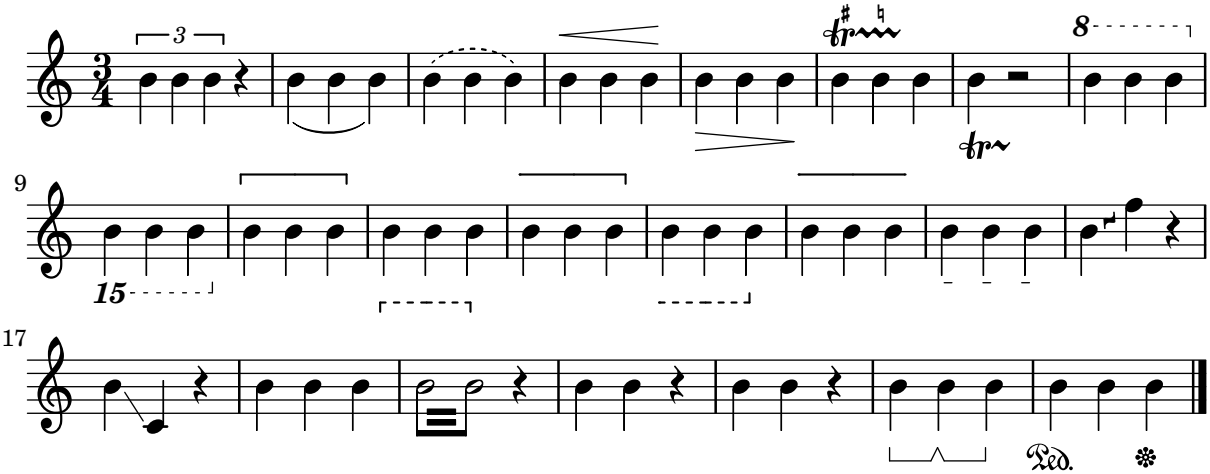
In the third bar there are different 'number' attribute values for each voice, causing arpeggios to be connected voice-wise.



33 ... Spanners

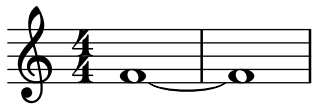
33a-Spanners.xml

Several spanners as defined in MusicXML: tuplet, slur (solid, dashed), wedge (cresc, dim), trill with accidental mark and wavy-line (with another accidental mark on the second beat), single-note trill spanner, octave-shift (8va,15mb), bracket (solid down/down, dashed down/down, solid none/down, dashed none/up, solid none/none), dashes, glissando (wavy), slide (solid), grouping, two-note tremolo, hammer-on, pull-off, pedal line (down, change, up), pedal text (down, up).



33b-Spanners-Tie.xml

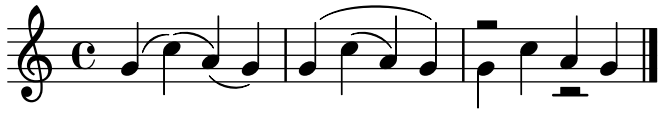
Two whole notes with a tie inbetween.



33c-Spanners-Slurs.xml

A note can be the end of one slur and the start of a new slur. Also, in MusicXML, nested slurs are possible like in the second measure where one slur goes over all four notes, and another slur goes from the second to the third note.

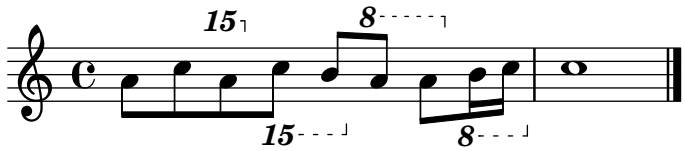
The third bar demonstrates a cross-voice slur starting at the first beat in the lower voice and ending on the third beat in the upper voice.



33da-Spanners-OctaveShifts-before.xml

All types of octave shifts (15ma on the third eighth note, 15mb on the fourth and fifth, 8va on the sixth and seventh, and 8vb on the last two 16th notes). This test file positions <octave-shift type="stop"> before the associated note, as expected in MusicXML import of Finale, for example. Consequently, it contains 'Finale' as the <software> tag.

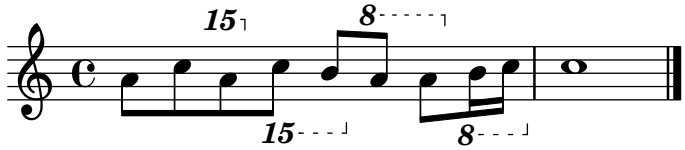
Note that the end of the last octave shift is anchored at the following bar line.



33db-Spanners-OctaveShifts-after.xml

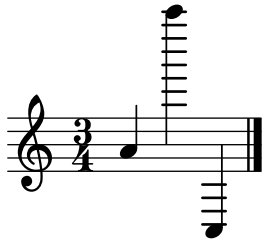
All types of octave shifts (15ma on the third eighth note, 15mb on the fourth and fifth, 8va on the sixth and seventh, and 8vb on the last two 16th notes). This test file positions <octave-shift type="stop"> after the associated note, as expected in MusicXML import of MuseScore, for example. Consequently, it contains 'MuseScore' as the <software> tag.

Note that the end of the last octave shift is anchored at the following bar line.



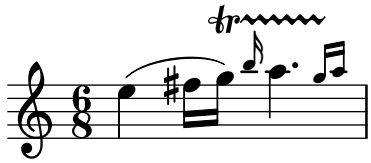
33e-Spanners-OctaveShifts-InvalidSize.xml

Invalid <octave-shifts> values: 27 down for the second note, and 11 up for the third note.



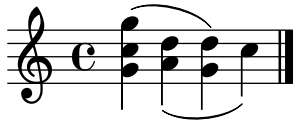
33f-Trill-EndingOnGraceNote.xml

A trill spanner that spans a grace note and ends on an after-grace note at the end of the measure.



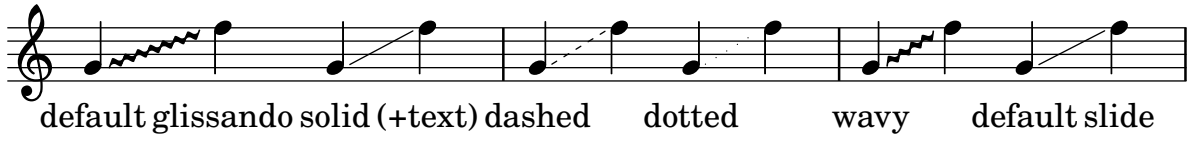
33g-Slur-ChordedNotes.xml

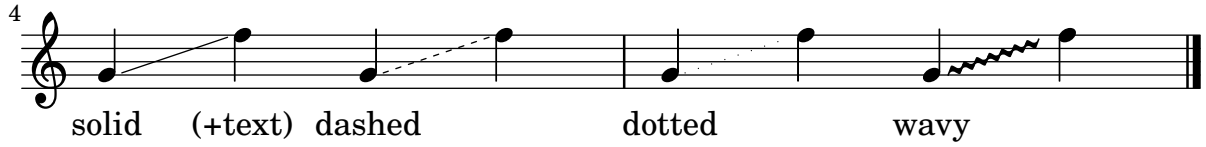
Slurs on chorded notes. The upper slur connects the first and third chord; for both the start and end, the <slur> element is attached not to the first note of the chord but to the second one (tagged with <chord>). The lower slur connects the chord on the second beat and the note on fourth beat and is attached in the normal way.



33h-Spanners-Glissando.xml

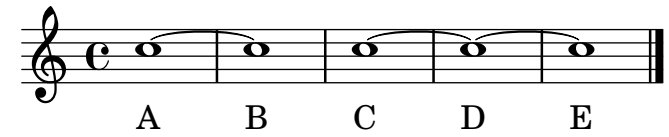
All different types of glissando defined in MusicXML. The first two and a half measures contain <glissando> elements with various 'line-type' attributes, the rest contains <slide> elements (also with various 'line-type' attributes).





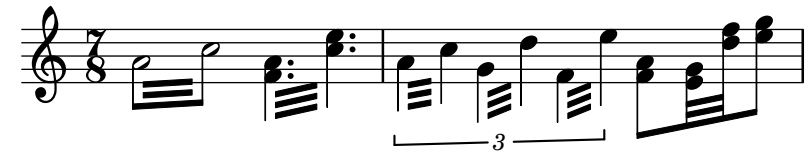
33i-Ties-NotEnded.xml

Several ties that have their end tag missing. The end position of the tie starting at position A is at position C. The tie starting at position C has no end tag at all. The tie starting at position D is ended at position E.



33j-Beams-Tremolos.xml

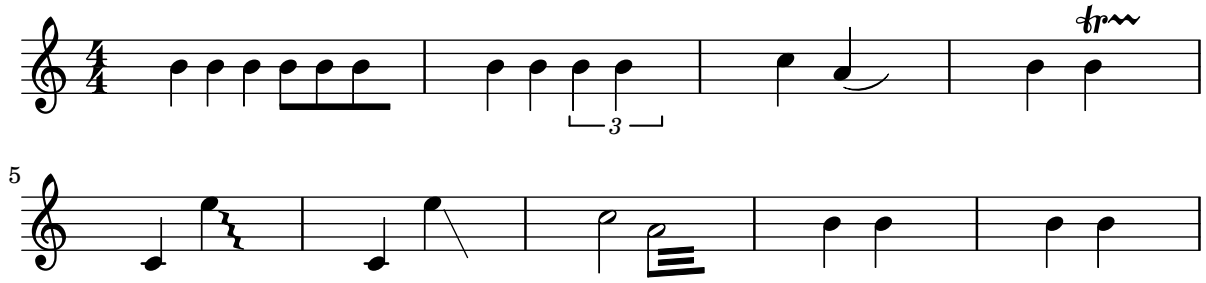
Tests for double-note tremolo beams. The first bar shows a half-note tremolo (one beam, two strokes) followed by a dotted quarter-note tremolo with chords (three strokes). The second bar shows a half-note triplet with three tremolos (no beams, three strokes) followed by three beamed eighths-note chords with a tremolo (two strokes) between the second and third chord.



34 ... Attribute issues

34a-Print-Object-Spanners.xml

Test various spanner elements (mostly from <notations>) starting from a <note> object with 'print-object' set to 'no', then test spanners ending with such a note object: beam, tuplet, slur, trill + wavy-line, glissando (wavy), slide (solid), two-note tremolo, hammer-on, pull-off. Spanners starting from an invisible object should be suppressed.



34b-Colors.xml

Colors. The elements in the first bar have the 'color' attribute set to red for <note>, <notehead>, <stem>, <dot>, and <accidental>, respectively.

The elements in the second bar have the 'color' attribute set to red for <down-bow>, <tremolo>, <accent>, and <note> again (for the rest), respectively, followed by a red unpitched note.

The third and fourth bar consists of a red two-bar rest.

The fifth bar has a red rehearsal mark on its starting bar line. The first note has three fingerings, with the middle one in red; also attached is a red ‘ff’ sign. The second note has three plucks, with the first one in red. A red ‘Adagio’ tempo indication is on top of the third beat, which consists of a quadruplet with a red number. The fourth beat holds a red arpeggio, and the fifth beat demonstrates lyrics in red.

The sixth bar holds a red beamlet, a red beam, a red slur, a red pedal marker that gets continued with a blue one, and a red octave shift.

Measure 7 contains a red trill with a black wavy line, a black trill with a red wavy line, a red bracket, a red glissando, and a red wedge.

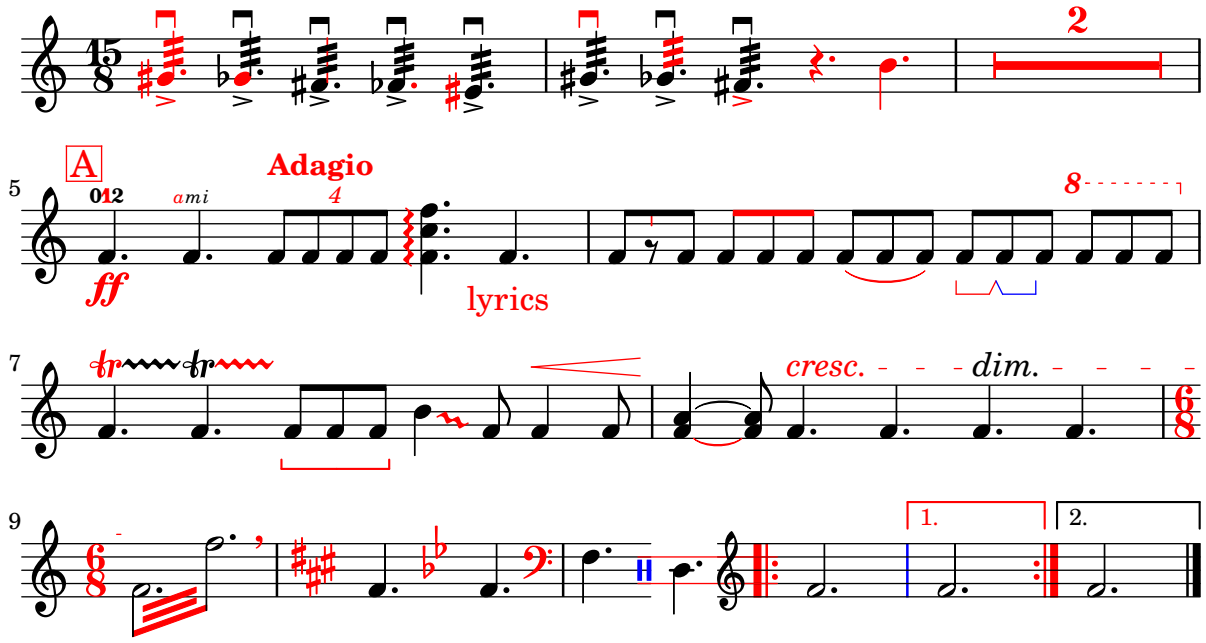
Bar 8 starts with a red and black tie connecting two chords, followed by ‘cresc.’ and dashes in red, followed by ‘dim.’ in black with red dashes.

The ninth measure demonstrates a red 6/8 time signature, followed by a red two-stem tremolo, a red breath mark.

Bar 10 begins with a red, non-traditional key change, followed by a red, traditional one.

The eleventh bar starts with a red bass clef (actually, still in bar ten), followed by a blue percussion clef on a red two-line staff (where the middle line is omitted).

Measures 12 to 14 hold a repeat structure with two endings, with red bar lines at the beginning of measures 12 and 14, a blue bar line at the beginning of measure 13, and a red prima-volta bracket and number.



34c-Font-Size.xml

Font sizes. The elements in the first bar have the ‘font-size’ attribute set to a larger value for <note>, <notehead>, <trill-mark>, <dot>, and <accidental>, respectively.

The elements in the second bar have the ‘font-size’ attribute set to a larger value for <down-bow>, <accidental-mark>, <accent>, and <note> again (for the rest), respectively, followed by a larger percussion clef and a larger unpitched note.

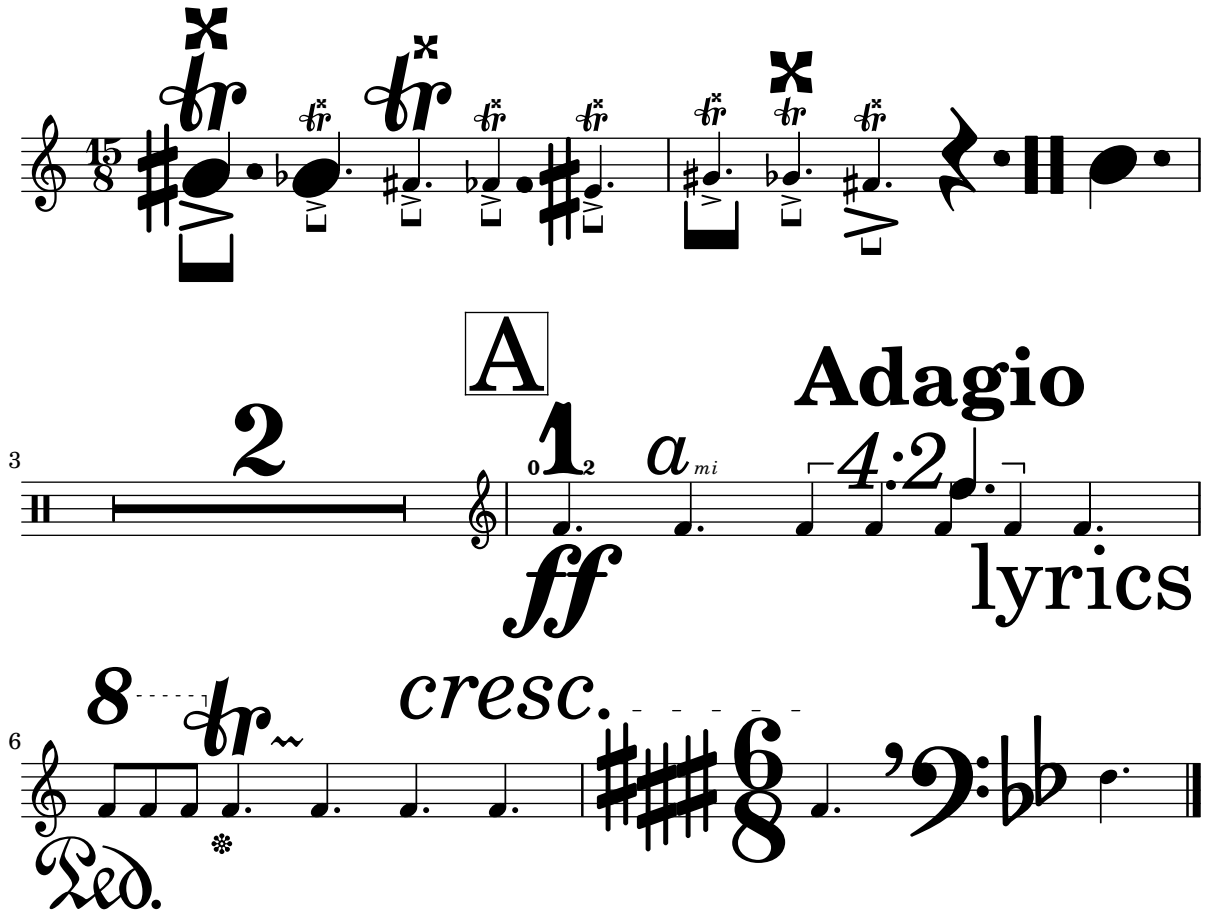
The third and fourth bar consists of an oversized two-bar rest.

The fifth bar has an oversized rehearsal mark on its starting bar line. The first note has three fingerings, with the middle one oversized; also attached is an oversized ‘ff’ sign. The second note has three plucks, with the first one oversized. An oversized ‘Adagio’ tempo indication is on top

of the third and fourth beats, which consist of a quadruplet with an oversized number. The fifth beat demonstrates oversized lyrics.

The sixth bar holds an oversized pedal marker with an oversized octave shift, an oversized trill with a wavy line, and an oversized 'cresc.' with dashes.

The seventh measure demonstrates an oversized, non-traditional key change, followed by an oversized 6/8 time signature, an oversized breath mark, an oversized bass clef, and an oversized, traditional key change.



34d-Note-Attributes.xml

Testing print attribute combinations of <note>. The third beat is a chord with the pitches D-F-A, all other notes have the same pitch A.

It is expected that only a subset of the possible combinations are supported by applications.

Measure 1:

A: No attributes.

B: print-leger="no" – the ledger line should be omitted.

C: print-dot="no" (middle note of chord) – the middle dot of the chord should be omitted.

D: print-lyric="no" – the lyric 'D' should be omitted.

E: print-object="no" – everything should be omitted.

Measure 2:

F: print-object="no", print-leger="yes" – only the ledger line should be visible.

G: print-object="no", print-dot="yes" – only the dot should be visible.

H: print-object="no", print-lyric="yes" – only the lyric 'H' should be visible.

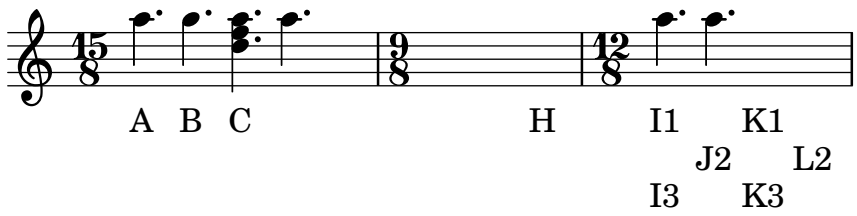
Measure 3:

I: print-object="no" for <lyric> (middle lyric line ‘I2’) – the lyrics ‘I2’ should be omitted.

J: print-lyric="no", print-object="yes" for <lyric> (middle lyric line ‘J2’) – the lyrics ‘J1’ and ‘J3’ should be omitted.

K: print-object="no" print-lyric="yes", print-object="no" for <lyric> (middle lyric line ‘K2’) – only the lyrics ‘K1’ and ‘K3’ should be visible.

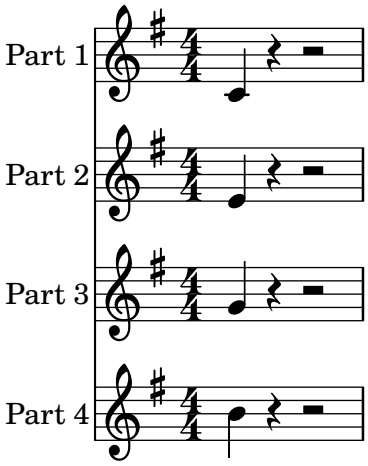
L: print-object="no" print-lyric="no", print-object="yes" for <lyric> (middle lyric line ‘L2’) – only the lyrics ‘L2’ should be visible.



41 ... Multiple parts (staves)

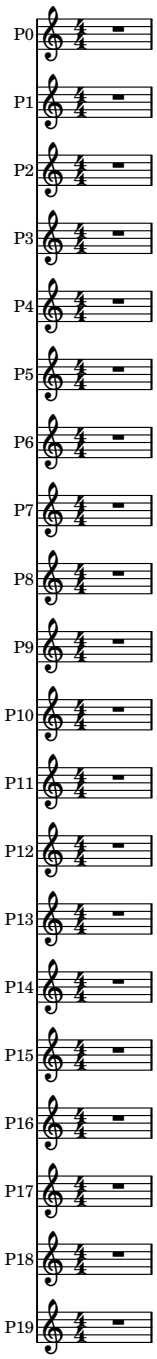
41a-MultiParts-Partorder.xml

A piece with four parts named ‘P0’, ‘P1’, ‘P2’, and ‘P3’ (in that order).



41b-MultiParts-MoreThan10.xml

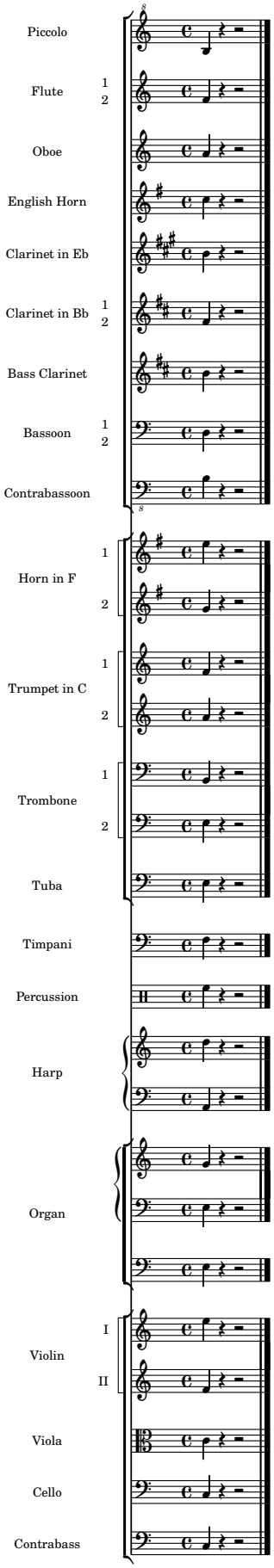
A piece with 20 parts (called ‘P0’ to ‘P19’) using a small global font size to check whether an application supports that many parts and whether they are correctly sorted.



41c-StaffGroups.xml

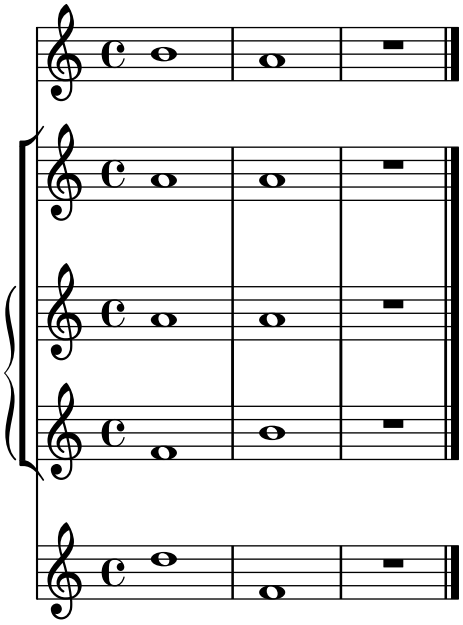
A huge orchestra score with 25 parts and different kinds of nested, bracketed groups, using quite a small staff size. Each part/group is assigned a name and an abbreviation (if necessary) to be shown before the staff. Also, most groups show unbroken bar lines, while the bar lines are broken between the groups.

Both the harp and the organ are multi-staff parts; the latter also uses a <part-symbol> element to set up the brace delimiter (and the non-contiguous bar line of the three staves).


Piccolo
Flute
1
2
Oboe
English Horn
Clarinet in Eb
Clarinet in Bb
1
2
Bass Clarinet
Bassoon
1
2
Contrabassoon
Horn in F
1
2
Trumpet in C
1
2
Trombone
1
2
Tuba
Timpani
Percussion
Harp
Organ
Violin
I
II
Viola
Cello
Contrabass

41d-StaffGroups-Nested.xml

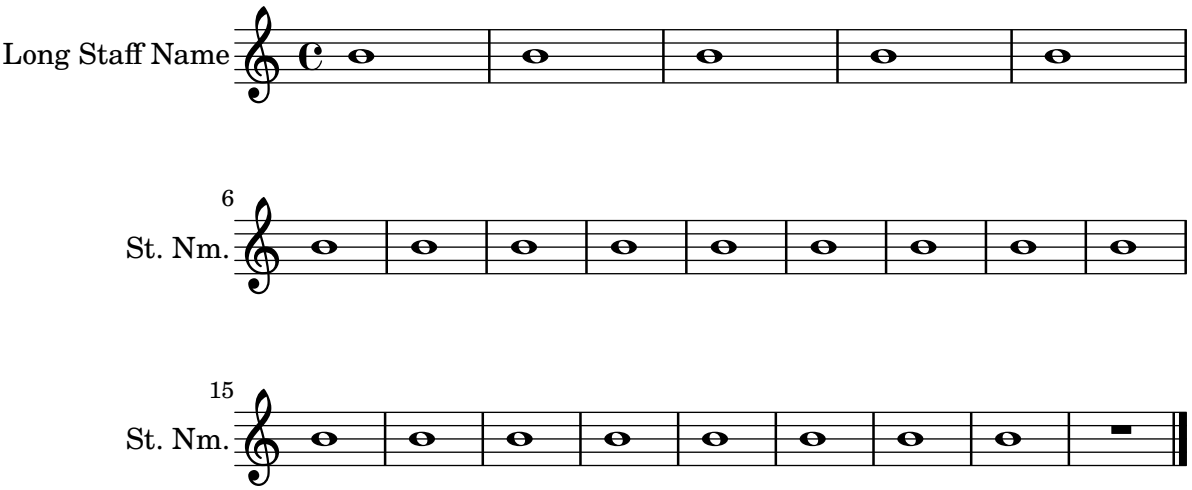
Two properly nested part groups: One group (with a bracket) goes from staff 2 to 4, and another group (with a brace) goes from staff 3 to 4.



41e-StaffGroups-InstrumentNames-Linebroken.xml

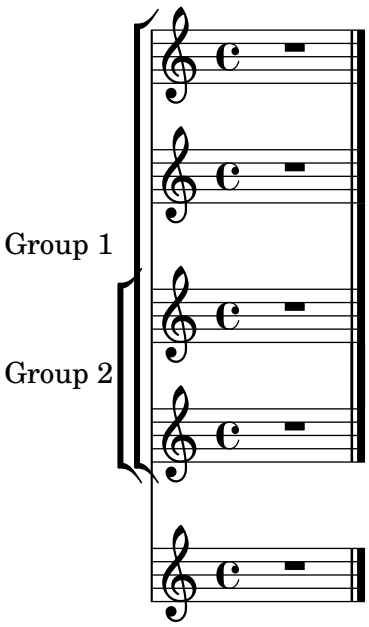
The <part-name> and <part-abbreviation> fields don't have an 'xml:space' attribute, making the interpretation of whitespace in the element content implementation-dependent.

In this test, there is a line break after each word. It is expected that some implementations show actual line breaks in the output, while others do not, replacing the line breaks with spaces.



41f-StaffGroups-Overlapping.xml

MusicXML allows for overlapping part groups, but many applications do not support that, requiring that they are properly nested instead. In this test, 'Group 1' (with a bracket) goes from staff 1 to 4, and 'Group 2' (also with a bracket) goes from staff 3 to 5.

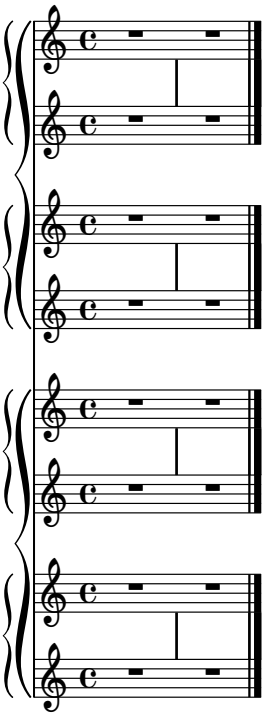


41g-StaffGroups-NestingOrder.xml

The horizontal order of nested group delimiters (brackets, braces, etc.) is unspecified in MusicXML; however, it can be controlled by the 'default-x' attribute of <group-symbol> in case the application's default positioning produces unwanted results (and the application actually supports this attribute).

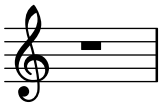
In the following (using a smaller staff size), staves 1 to 4 have a four-staves brace on the left and two two-staves braces to the right. On staves 4 to 8 it's exactly the opposite (i.e., the four-staves brace is to the right), using the same 'number' attribute values as before but different 'default-x' values.

Note also that the four-staves brace has the element <group-barline> set to value 'no' while the two-staves braces use value 'Mensurstrich'. This means that the Mensurstrich bar lines should be grouped into two staves each.



41h-TooManyParts.xml

This piece has two more <part> elements than the <part-list> section contains. One can either convert all the parts present but not listed in the part list, or simply not import or ignore them.



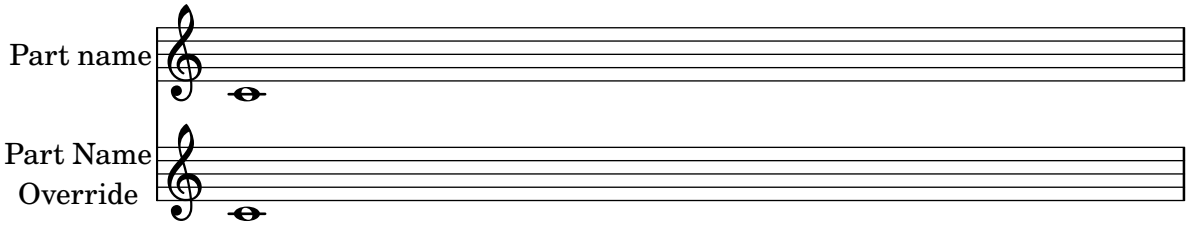
41i-PartNameDisplay-Override.xml

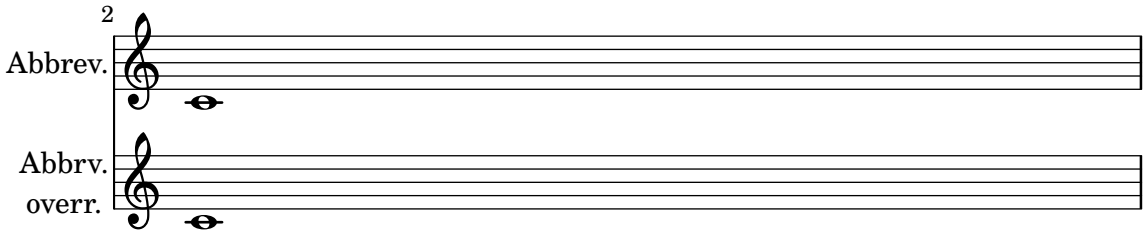
MusicXML allows <part-name> and <part-name-display> in the <score-part> element. If <part-name-display> is given, it overrides <part-name> for display.

The first staff uses only <part-name>, while the second one (with the same <part-name> value) overrides it with a custom text.

In a similar vein, <part-abbreviation> can be overridden with <part-abbreviation-display>, shown in the second system.

The multi-line entries are generated by using ‘xml:space="preserve"’ as an attribute within a <display-text> child of the <xxx-display> element.





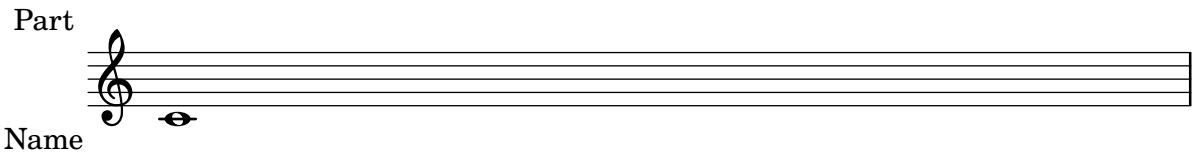
41j-PartNameDisplay-Multiple-DisplayText-Children.xml

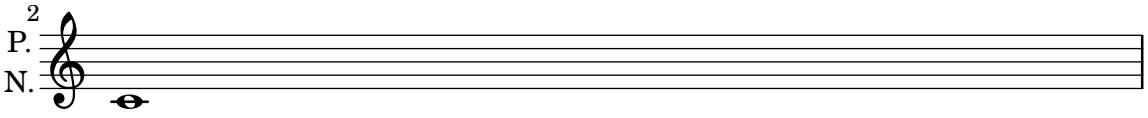
This score has multiple <display-text> elements in its <part-name-display> block: the word 'Player' printed in red with a large font size, the word 'One' printed in blue with a small, italic font size.

41k-PartName-Print.xml

The <part-name-display> and <part-abbreviation-display> elements can also be children of the <print> element; the former is used at the beginning of the first bar, and the latter at the beginning of the second bar.

The multi-line entries are generated by using 'xml:space="preserve"' as an attribute within a <display-text> child of the <xxx-display> element. There are two empty lines between 'Part' and 'Name'.





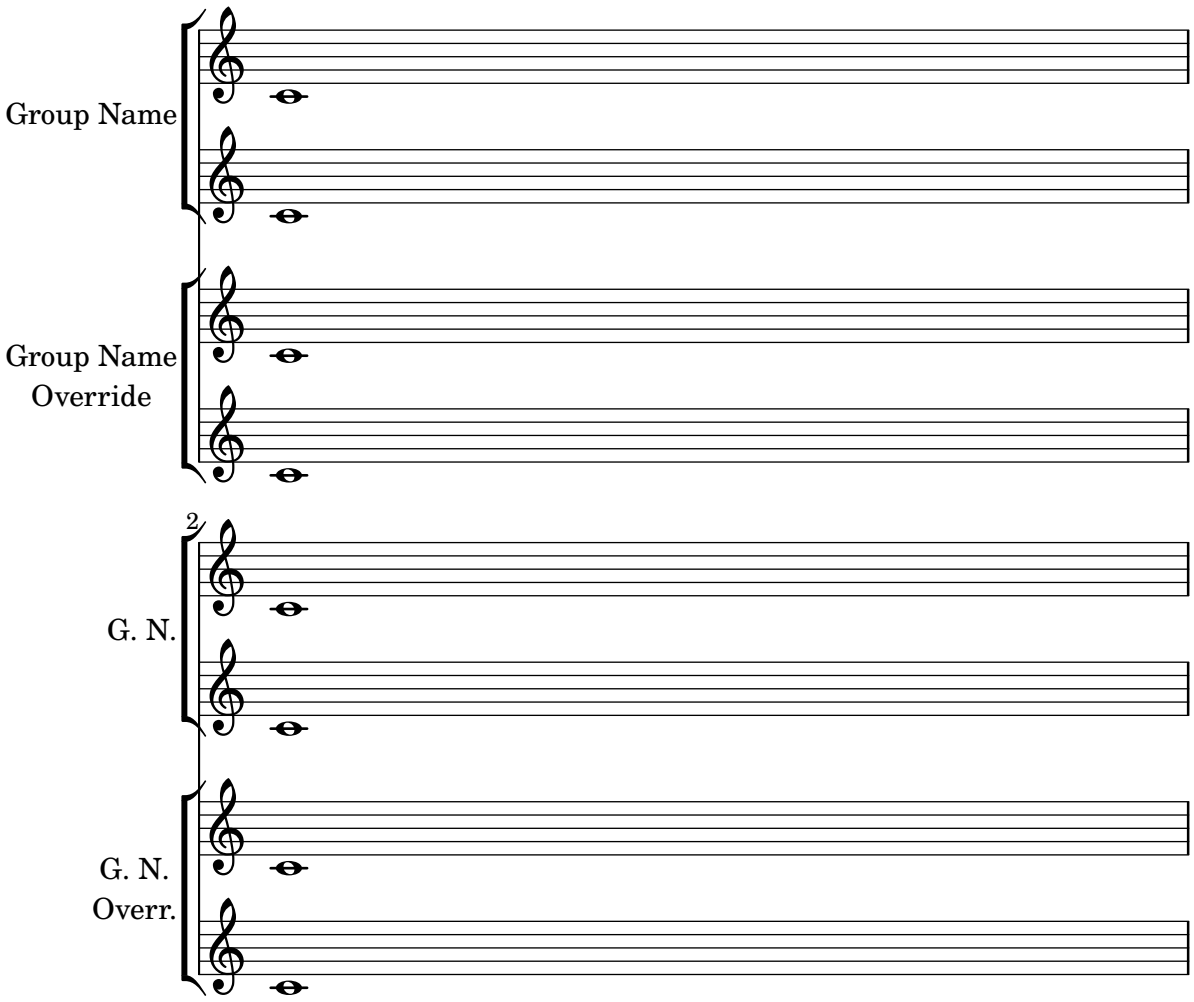
41l-GroupNameDisplay-Override.xml

If <group-name-display> is given, it overrides <group-name> for display.

The first two staves use only <group-name>, while the third and fourth one (with the same <group-name> value) override it with a custom text.

In a similar vein, <group-abbreviation> can be overridden with <group-abbreviation-display>, shown in the second system.

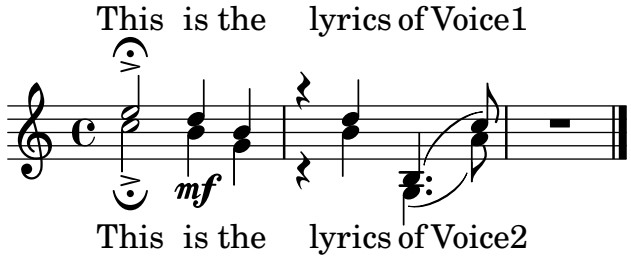
The multi-line entries are generated by using 'xml:space="preserve"' as an attribute within a <display-text> child of the <xxx-display> element.



42 ... Multiple voices per staff

42a-MultiVoice-TwoVoicesOnStaff-Lyrics.xml

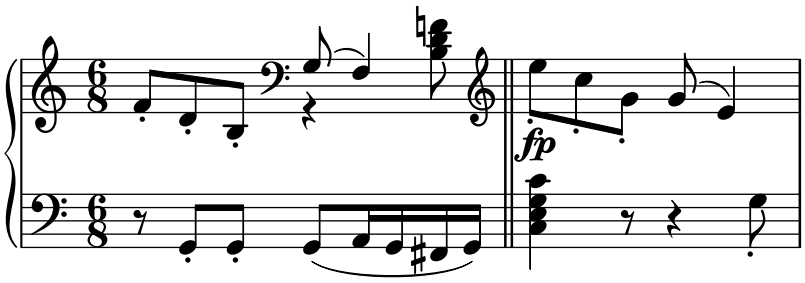
Two voices share one staff. To each voice some lyrics is assigned (with the lyrics of voice one positioned above the staff). In the last bar, the second voice is empty, thus the full rest should be placed on the staff's default position.



42b-MultiVoice-MidMeasureClefChange.xml

A part with three voices; two on the upper staff and one on the lower staff. There are two clef changes in the upper staff, one in the middle of measure 1 and one at the end. The third voice (i.e., the second voice in the upper staff) has a length of only three eights, starting at the fourth eighth of the first measure.

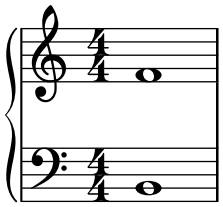
No voice contains <stem> elements.



43 ... One part on multiple staves

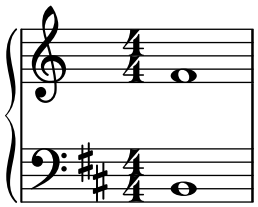
43a-PianoStaff.xml

A simple piano staff, i.e., two voices, each on a separate staff.



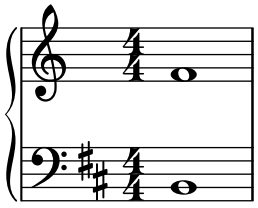
43b-MultiStaff-DifferentKeys.xml

A piano staff with different keys and clefs for each of its staves. The keys and clefs for both staves are given at the very beginning of the measure.



43c-MultiStaff-DifferentKeysAfterBackup.xml

A piano staff with different keys and clefs for each of its staves. The key and clef for the second staff is given only after a <backup> element, just before the first note of the second staff, but after the whole measure for staff one has been output.

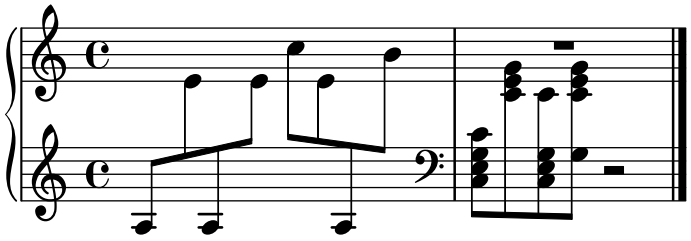


43d-MultiStaff-StaffChange.xml

Staff changes in a piano staff. In the first measure, the voice from the second staff has some notes on the first staff.

In the second measure, the voice from the second staff holds four chords. All notes of the first one are in the second staff, and all notes of the second one are in the first staff. The remaining two demonstrate cross-staff chords: The top note of the third chord is in the first staff (with the other notes in the second staff), and the bottom note of the fourth chord is in the second staff (with the other notes in the first staff).

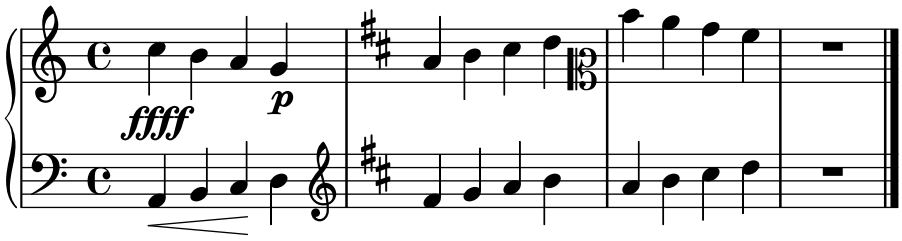
In both bars, no explicit stem directions are set; it is thus up to the application to decide whether the beams appear below the second staff or between the two staves.



43e-Multistaff-ClefDynamics.xml

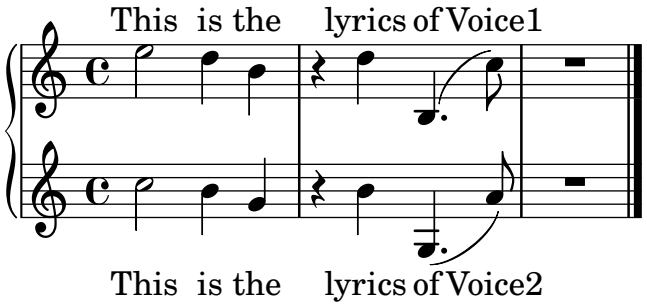
A piano staff with dynamics and clef changes, where each element ('ffff', a wedge, and clef changes) applies only to one voice or one staff, respectively.

The key change is given only once, not specifying a particular staff; it should thus appear on both staves.



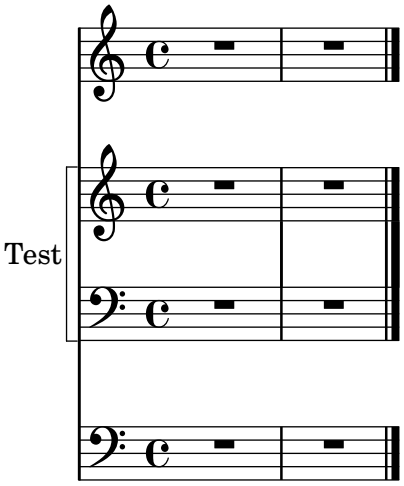
43f-MultiStaff-Lyrics.xml

Two voices of a single part on two staves, with lyrics. The lyrics of voice one is positioned above the staff.



43g-MultiStaff-PartSymbol.xml

In this four-staves part, the <part-symbol> element spans up a 'square' staff group delimiter between staves 2 and 3.



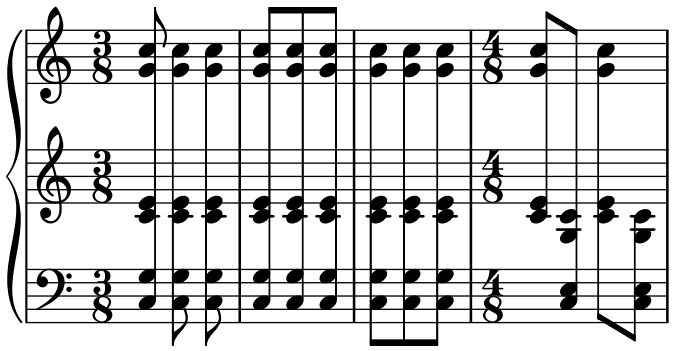
43h-MultiStaff-Chords.xml

Various tests for cross-staff chords.

Bars 1 to 3 hold cross-staff chords in voice 1 (with voice 2 being empty) with two notes per staff. If you count the notes from top to bottom, the MusicXML order of notes in the chords are [1 2 3 4 5 6], [3 4 1 2 5 6], and [5 6 3 4 1 2], respectively.

Bar 1 has no <stem> and <beam> elements. Bar 2 uses a <beam> with up-stems, and bar 3 uses a <beam> with down-stems.

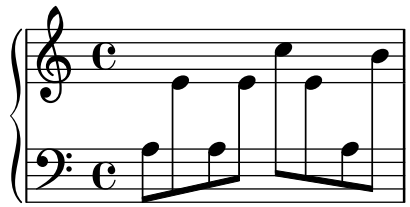
Bar 4 tests cross-staff elements in voice 2 (with voice 1 being empty) in combination with cross-staff chords. The first and third chord are in staves 1 and 2, while the second and fourth chord are in staves 2 and 3. The first two chords have a beam with up-stems, the last two chords have a beam with down-stems.



43i-MultiStaff-StaffChange-SingleVoice.xml

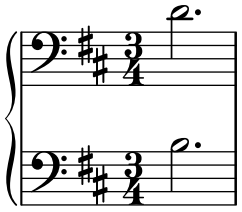
Staff changes in a piano staff.

There is a single voice starting in staff 2 that spreads its notes over the two staves; there is no separate voice in staff 1.



43j-MultiStaff-TimeSignatureAfterBackup.xml

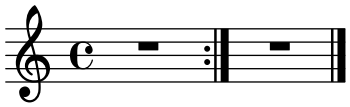
A piano staff where the bass clef, the 3/4 time signature, and the d-major key at the very beginning is given for both staves after a <backup> element.



45 ... Repeats

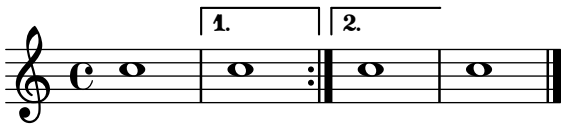
45a-SimpleRepeat.xml

A simple, repeated measure (to be played five times), with an implicit start at the beginning.



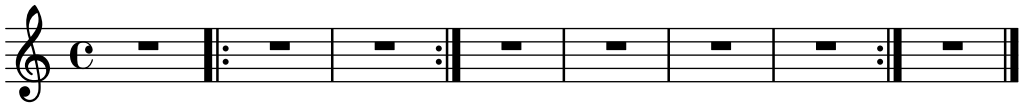
45b-RepeatWithAlternatives.xml

A simple repeat with two alternative endings (volta brackets).



45c-SimpleRepeat-Nested.xml

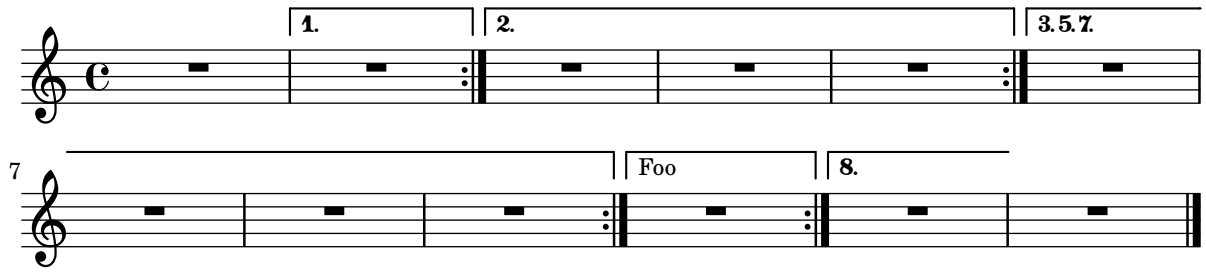
Repeats can also be nested. The inner repeat spans from bar 2 to bar bar 3 (to be played five times). The outer repeat spans implicitly from the beginning to bar 7 (to be played one time, i.e., it doesn't get repeated).



45d-Repeats-MultipleEndings.xml

Multiple alternative endings. The first alternative starts and ends at bar 2; the second continues until bar 5, the third, fifth, and seventh until bar 9, the fourth and sixth until bar 10, and the eighth is discontinued after one bar.

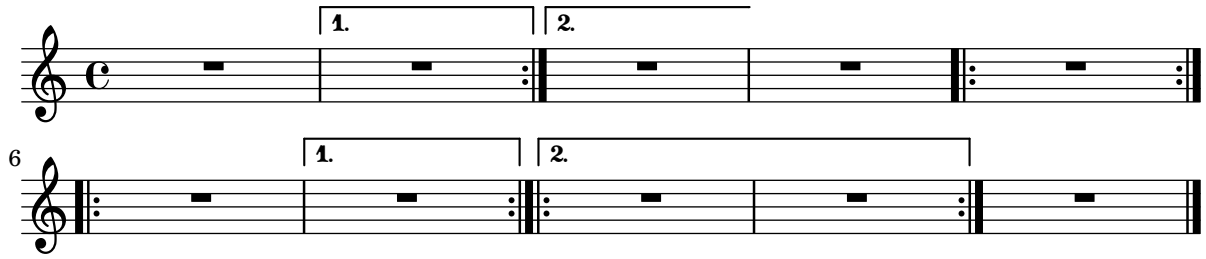
In this test, the <ending> elements don't contain text except the one in bar 10, which holds 'Foo'.



45e-Repeats-Combination.xml

A series of repeat elements.

The first repeat starts implicitly at the beginning, with the first alternative starting and ending at bar 2, and the second ending at bar 3. All four <ending> elements have 'number=""' as an attribute. The next repeat starts and ends at bar 5. Another repeat starts at bar 6 (causing a back-to-back bar line between bars 5 and 6), with the first alternative starting and ending at bar 7. Its second alternative (starting and ending at bar 8) is the start of a repeat at the same time (causing another back-to-back bar line between bars 7 and 8), ending after bar 9.



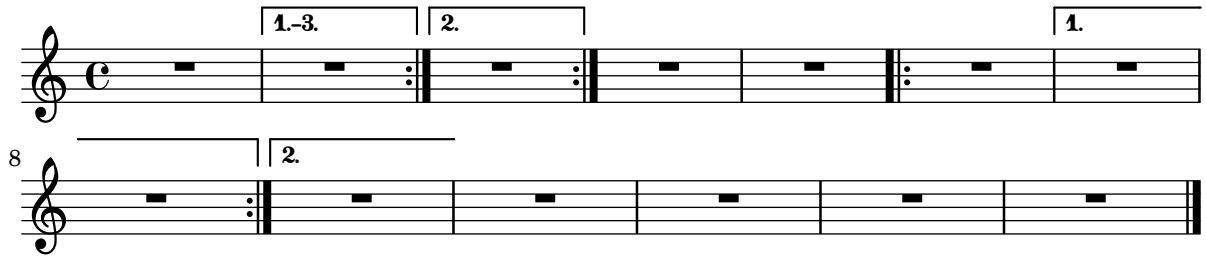
45f-Repeats-InvalidEndings.xml

A stress test with a combination of <repeat> and <ending> elements that don't make sense. The displayed result depends on the sanitizing possibilities of the application that handles the input.

Bar 2 starts and ends with <ending number="1, 2, 3">. Bar 3 starts and ends with <ending number="2"> (where the right element is of type 'discontinue'); there is no <repeat> element between bars 2 and 3. Finally, at the end of bar 4 there is a both a <repeat direction="backward"> and a <ending type="stop"> element.

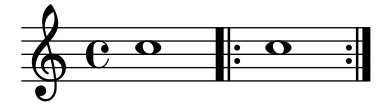
Bar 6 starts a repeat, bar 7 start and ends a prima volta bracket, but the corresponding repeat bar is between bars 8 and 9, followed by a seconda volta bracket starting and ending in bar 9.

Another invalid 'pair' is <ending type="start"> at the beginning of bar 12 and <ending type="discontinue"> at the end of bar 13.



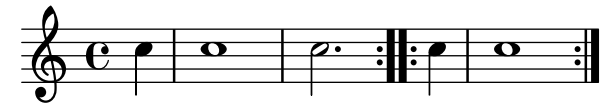
45g-Repeats-NotEnded.xml

A forward-repeating bar line without an ending repeat bar.



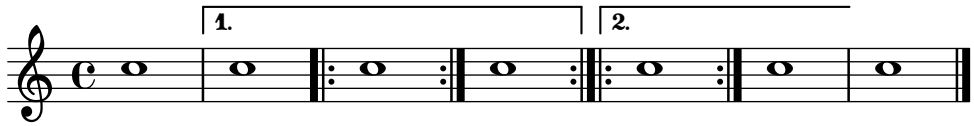
45h-Repeats-Partial.xml

A repeat starting and ending at a partial bar. The style of the back-to-back bar line is 'heavy-heavy' (using the MusicXML encoding as exported by Finale).



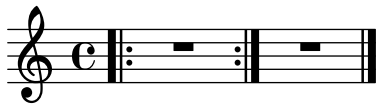
45i-Repeats-Nested.xml

A repeat with two alternative endings. In the first one (enclosing bar 2 to bar 4), there is a nested repeat enclosing bar 3. In the second one (from bar 5 to bar 6), there is another nested repeat starting also at bar 5 but ending already at the same bar.



45j-SimpleRepeat-Start.xml

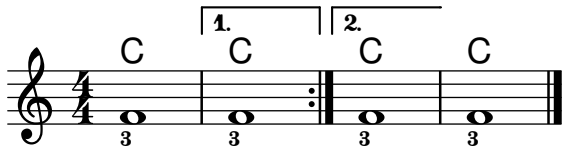
A simple, repeated measure with an explicit start at the beginning.



45k-Repeats-Chords-FiguredBass.xml

A repeat with volta brackets, also showing chord names and figured bass. As a specialty, the repeat at the end of measure 2 is encoded as two successive <barline> elements, holding a <repeat> child in the first and an <ending> child in the second element.

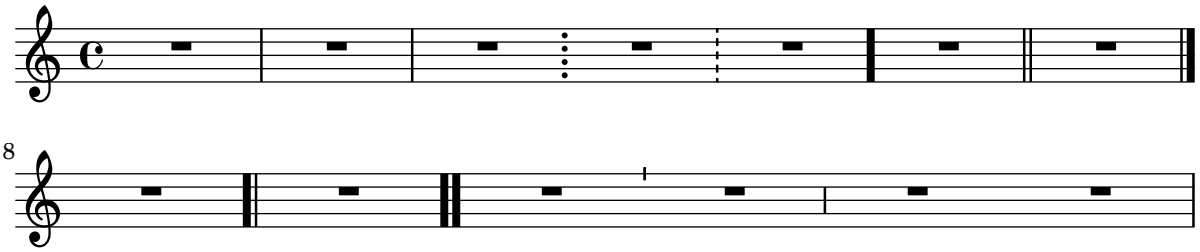
The <figured-bass> elements in this test don't have a <duration> child.



46 ... Bar lines, measures

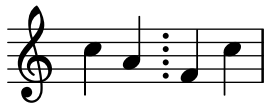
46a-Barlines.xml

Different types of (non-repeat) bar lines: default (no setting), regular, dotted, dashed, heavy, light-light, light-heavy, heavy-light, heavy-heavy, tick, short, none.



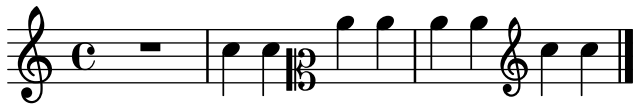
46b-MidmeasureBarline.xml

Bar lines can appear at mid-measure positions (having a 'location="middle"' attribute), without using an implicit measure.



46c-Midmeasure-Clef.xml

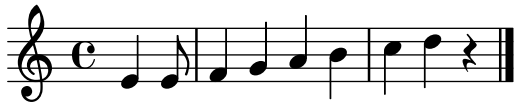
A clef change in the middle of a measure, using either an implicit measure (as done for the second half of measure 2) with an <attributes> element at its beginning, or placing an <attributes> element at the middle of the measure (as done in measure 3).



46d-PickupMeasure-ImplicitMeasures.xml

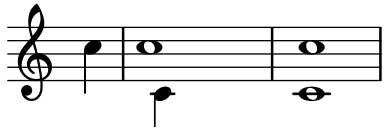
A combination of unusual measures.

At the beginning there is a 3/8 pickup measure (measure 0). Measure 1 consists of an incomplete measure with two quarters, followed by an invisible bar line and another pickup measure with two quarters to complete it. Measure 2 is also incomplete, holding only three quarters.



46e-PickupMeasure-SecondVoiceStartsLater.xml

Using <backup> it is possible to have 'incomplete' measure lengths. This test starts with a quarter note upbeat and a whole note for voice 1 in the first measure, and voice 2 contains only a quarter note starting at the second beat. The second measure contains whole notes for both voices. Note that there is a discontinuity in the MusicXML timing: voice 2 'jumps' from the single quarter note to the whole note in the second measure.



46f-IncompleteMeasures.xml

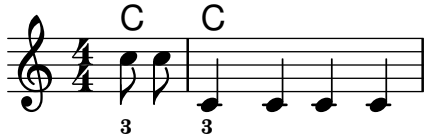
Measures can contain less notes than the time signature says. Some applications use this approach for 'frenched' scores, i.e., for staves that are present but hidden and not printed.

While doing so is valid MusicXML, having measures with lengths that differ from their designated time signatures is semantically invalid. A better approach is to actually use time signatures, setting their 'print-object' property to 'no'.

Here, the first and third measure contain only two quarters instead of four.

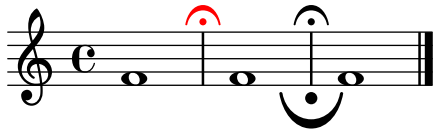
46g-PickupMeasure-Chordnames-FiguredBass.xml

A pickup measure with chord names and figured bass.



46h-Barline-Fermata.xml

Fermatas over bar lines using <fermata> as a child of <barline>. The bar line between measure 1 and 2 has one red-colored fermata on the top, the bar line between measure 2 and 3 has two fermatas, one above and one below (the latter one with a 'type="inverted"' attribute and in larger size).

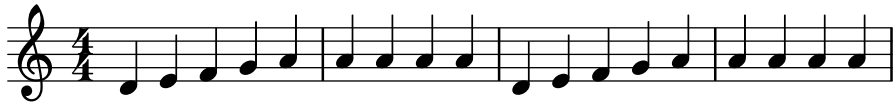


46i-OverfullMeasures.xml

Measures can contain more notes than the time signature says. Some applications use this approach for 'frenched' scores, i.e., for staves that are present but hidden and not printed.

While doing so is valid MusicXML, having measures with lengths that differ from their designated time signatures is semantically invalid. A better approach is to actually use time signatures, setting their 'print-object' property to 'no'.

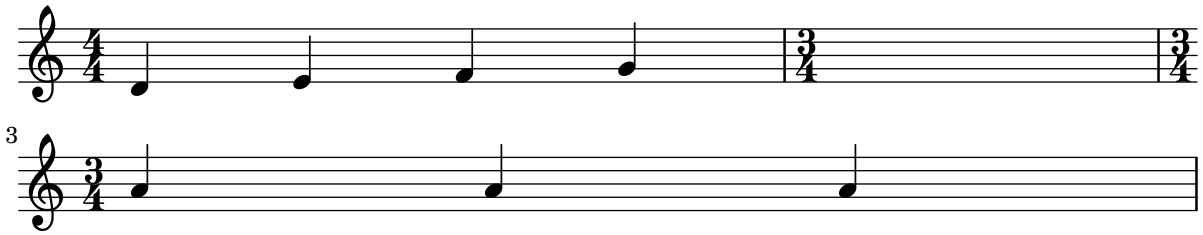
Here, the first and third measure contain five quarters instead of four.



46j-EmptyMeasure.xml

Measure two is empty; it only contains a time signature but not anything else. Some applications use this approach to insert time signatures for purely visual reasons, for example, displaying a final time signature at the end of a line, followed by a forced line break.

While doing so is valid MusicXML, having measures with a zero length is semantically questionable. In particular, if the displayed bar number is derived from '<measure number="...">' (as it usually is), such empty measures make the bar numbers being off. Additionally, it is not portable, since other applications 'rectify' it by displaying this empty measure, giving it a default length.



51 ... Header information

51a-Header-Credits.xml

Check multiple <credit> elements with various <credit-type> children (also testing the case without such a child and having two). There is also a <defaults> block to properly set up (quite small) page dimensions and a 'tenth' value, making the 'default-x' and 'default-y' attributes of <credit-words> children meaningful.

The following <credit> elements are present, with the given <credit-type> type.

– 'page number' (two <credit> elements, one at the top left for page '2' and another one at the top right for page '2a' using attribute 'page="2"'; valign: top).

– ‘rights’ (at the bottom; halign: center, justify: right, valign: bottom).

– ‘title’ (two <credit-words> elements, attributes only set for the first one, almost at the top; justify: center, valign: middle, enclosure: rectangle).

– No <credit-type> element (below the title; halign: center, valign: middle).

– Two <credit-type> elements (types ‘foo’ and ‘bar’, at the top; justify: center, valign: top, font-stype: italic).

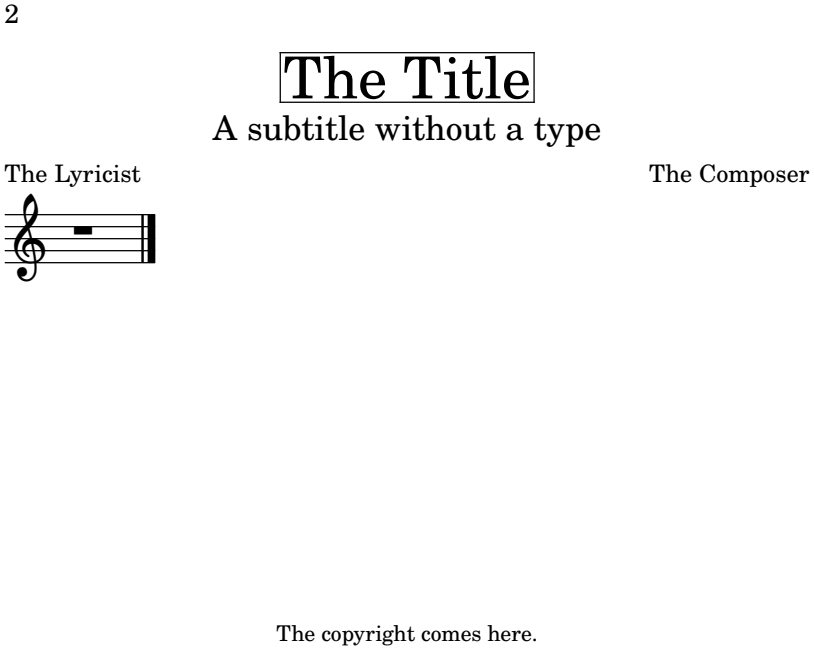
– ‘composer’ (below the type-less element; justify: right, valign: middle).

– ‘lyricist’ (below the type-less element; valign: middle).

There are no metadata elements.

Measure 1 contains <print blank-page="1"/> to make the music start on page 2 (i.e., all <credit> elements in this test go to page 1).

Chances are high that an application ignores all <credit> elements, using only metadata to derive titles, subtitles, and more.



51b-Header-Quotes.xml

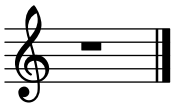
Header fields and part names can contain double quotes ("). This test checks some fields (<movement-title>, <creator type="composer">, <rights>, <software>, <part-name>) whether they are converted or imported without problems (i.e., whether they are correctly escaped when converting).

51c-MultipleMetadata.xml

Some metadata elements can occur multiple times. This test file contains the elements <creator> (type 'composer'), <rights>, <software>, and <encoding-date> twice.

Joe User

A. U. Thor



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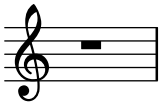
51d-EmptyTitle.xml

A piece with empty (but existing) <work-title> and <work-number> elements. <movement-title> is non-empty but <movement-number> is empty, too. It makes sense to use <movement-title> as the title in this situation.

Empty work-title, non-empty movement-title



52 ... Page layout

52a-PageLayout.xml

Several page layout settings: paper size (16cm×9cm), page margins (left / right = 3cm / 2cm, top / bottom = 0.5cm / 0.7cm), system margins (left / right = 1.5cm / 2cm), distances (top-system / system-system = 4cm / 3cm), and different fonts.

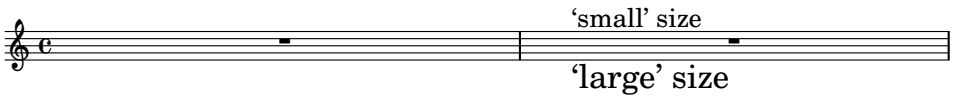
There is a line break before bar 3 and a page break before bar 5.

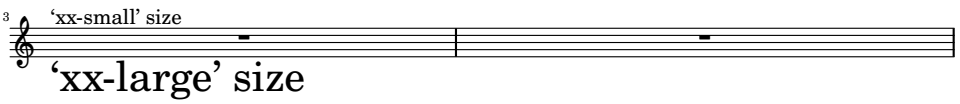
Finally, we also test four CSS font sizes for <words> elements in bars 2 and 3.

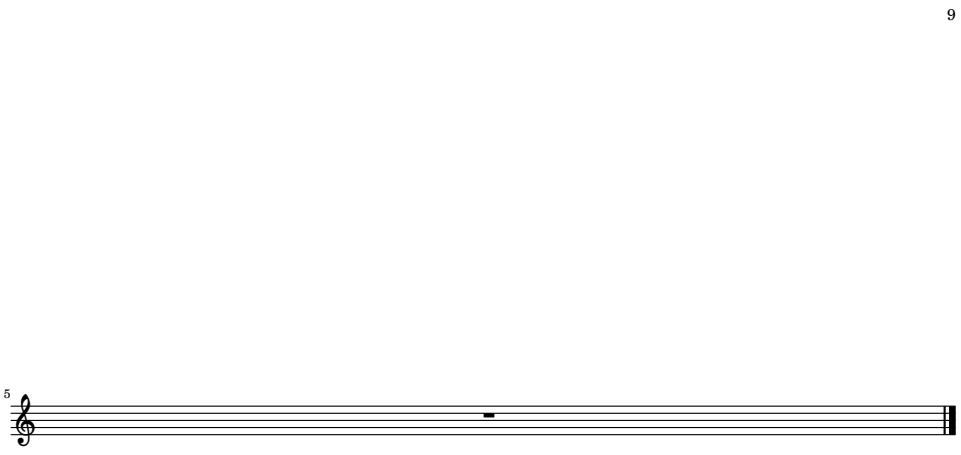
The page number on the first page is set to 8 (and to 12 on the second page).

8

Layout options



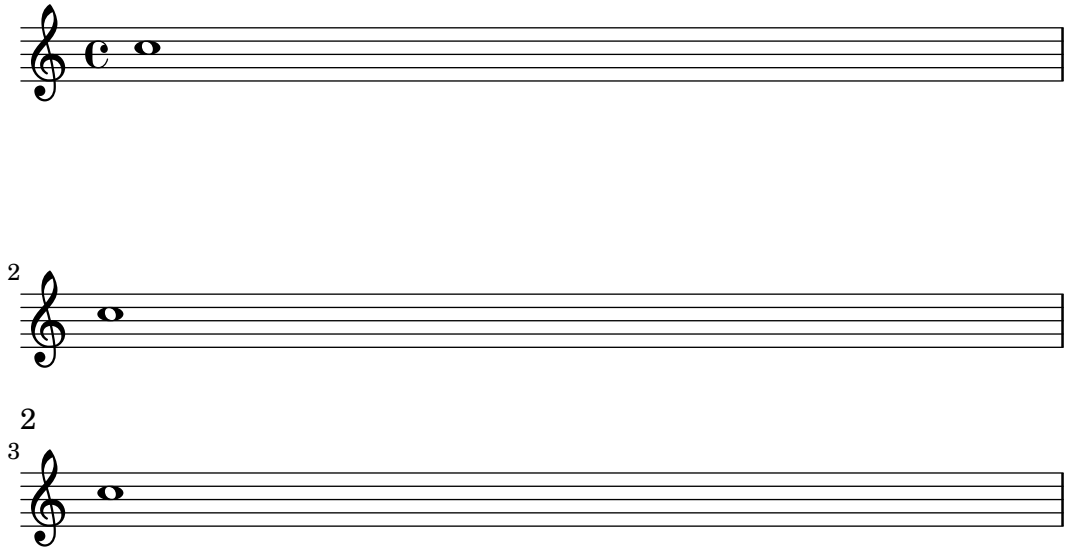




LilyPond v2.27.0

52b-Breaks.xml

A system break (after measure 1) and a page break (after measure 2) using <print> elements.



LilyPond v2.27.0

61 ... Lyrics

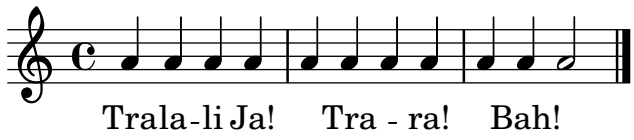
61a-Lyrics.xml

Some notes with simple lyrics.

The values of the <syllabic> elements of the four notes in measure 1 are ‘begin’, ‘middle’, ‘end’, and ‘single’, respectively.

Measure 2’s first note has no lyrics; the lyrics starts on the second note, skips the third note, and ends at the fourth one.

A similar situation is present for measure 3: no lyrics at the first note, a single syllable on the second note, and the third note has again no lyrics.

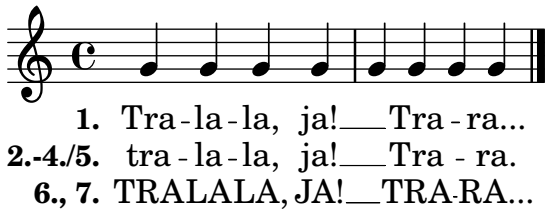


61b-MultipleLyrics.xml

Multiple, simple lyrics. The order of the exported stanzas is relevant; in this example, the three lines have the ‘number’ attribute set to ‘1’, ‘2’, and ‘iij’, respectively.

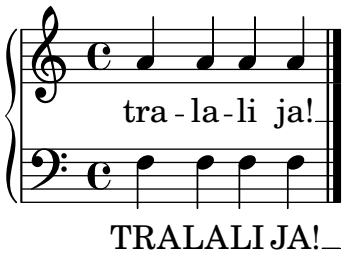
MusicXML doesn’t provide any means to semantically separate stanza numbers from actual lyrics; it is thus the job of the application to do something sensible. Here, the first <text> elements in each line also hold the stanza number: for lines 1 to 3, the values are ‘1.Tra’, ‘2.-4./5. tra’, and ‘6., 7.TRA’.

The lyrics on the last note in measure 1 start extender lines. In the top two lyric lines, there is an <extend> element without an attribute (compliant to MusicXML versions before 3.0). In the third lyric line, the fourth note has attribute ‘start’, and the first note of measure 2 has attribute ‘stop’, using the extended syntax introduced in MusicXML 3.0.



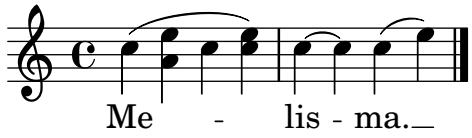
61c-Lyrics-Pianostaff.xml

Lyrics assigned to the voices of a piano staff containing two simple staves. Each staff is assigned exactly one lyrics line.



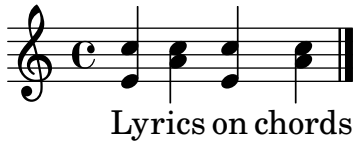
61d-Lyrics-Melisma.xml

How to treat lyrics in combination with slurred or tied notes. Normally, a slurred or tied group of notes is assigned only one lyrics syllable.



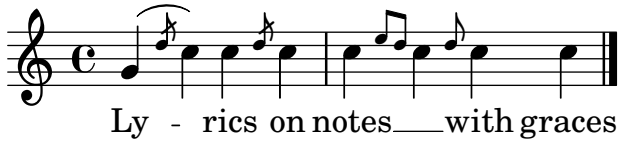
61e-Lyrics-Chords.xml

Assigning lyrics to chorded notes.



61f-Lyrics-GracedNotes.xml

Grace notes shall not mess up the lyrics, and they shall not be assigned to a syllable.



61g-Lyrics-NameNumber.xml

A lyrics syllable can have both a 'number' and a 'name' attribute. The question is: What should be used to put syllables of the same voice together? This example uses different combinations of 'number' and 'name' attributes to check how different applications handle this unspecified case. (The advice on the MusicXML mailing list was "there is no correct way, each application can do what it thinks is best.")

The following combinations are tested, shown as ('number', 'name', <text>) tuplets in the order given in the MusicXML file; missing entries are indicated with '—'.

Note 1: (1, Verse, Verse1A), (1, Chorus, Chorus1A), (1, Chorus, AnotherChorus1A), (2, Chorus, Chorus2A).

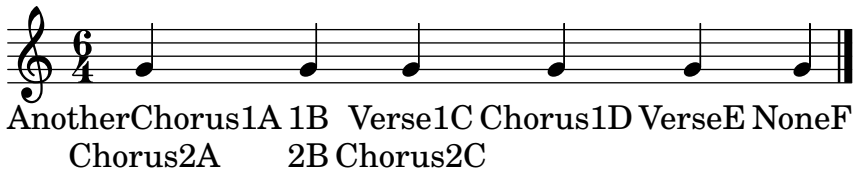
Note 2: (1, —, 1B), (2, —, 2B).

Note 3: (1, Verse, Verse1C), (2, Chorus, Chorus2C).

Note 4: (1, Chorus, Chorus1D).

Note 5: (—, Verse, VerseE).

Note 6: (—, —, NoneF).



61h-Lyrics-BeamsMelismata.xml

In standard music notation, beaming or slurs normally indicate melismata for lyrics (in MusicXML there is no such interdependency). Also make sure that notes without an explicit syllable are treated as if they were part of a melisma.

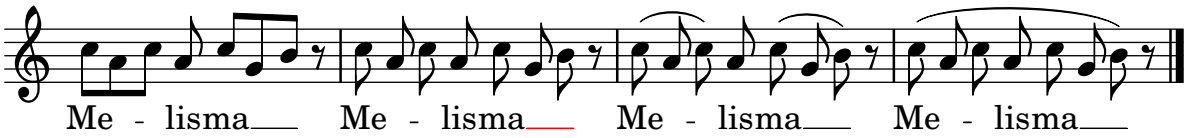
In all measures, the melisma starts on note 1 and ends on note 7; there are lyrics on notes 1, 4, and 5, followed by an extender line from note 5 to 7.

Measure 1 has beams from notes 1 to 3 and 5 to 7.

In measure 2, there are neither beams nor slurs. ‘start’, ‘continue’, and ‘stop’ types are used for <extend>, together with a red color for the extender line.

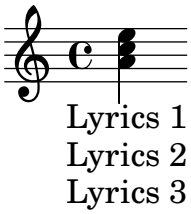
Measure 3 uses slurs (and no beams) for notes 1 to 3 and 5 to 7.

Measure 4 uses a single slur (and no beams) from note 1 to 7.



61i-Lyrics-Chords.xml

Each note of a chord can have some lyrics attached. In this test, each note of the chord has lyrics of the form “Lyrics n” attached (with ‘n’ being 1, 2, or 3); each lyrics has a different ‘number’ attribute to distinguish them. These syllables should be imported into three different stanzas, and the timing should be correct.

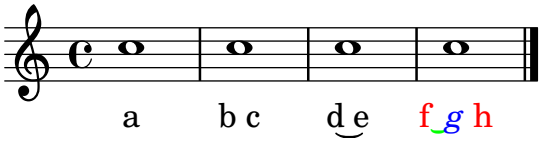


61j-Lyrics-Elisions.xml

Multiple lyrics syllables assigned to a single note are implemented either using a space in the <text> child of <lyric>, or by using <elision>.

The first note has a single syllable, the second note has two syllables separated by a space, the third has two syllables with <elision> set to an undertie, and the fourth has three syllables (the first and third one in red, and the second one being in italic and overriding the color with blue), with a green undertie between the first and second syllable and an empty <elision> element between the second and third syllable, causing an application-specific elision glyph.

None of the <lyric> elements has the ‘number’ attribute set.



61k-Lyrics-SpannersExtenders.xml

Lyrics spanners: continued syllables and extenders, possibly spanning multiple notes.

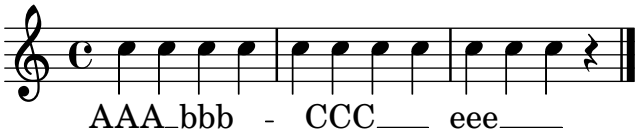
In the following, measure-beat values are shown with the assigned MusicXML elements. Beat 4 in measure 3 is a rest.

1/1: Single syllable ‘AAA’ (left-justified), extend.

1/3: Start syllable ‘bbb’.

2/2: End syllable ‘CCC’ (right-justified), extend.

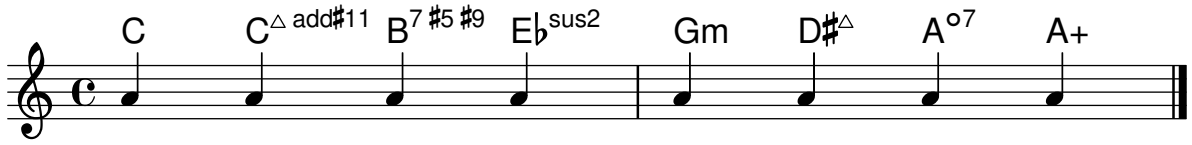
3/1: Single syllable ‘eee’ (left-justified), extend.



71 ... Guitar notation

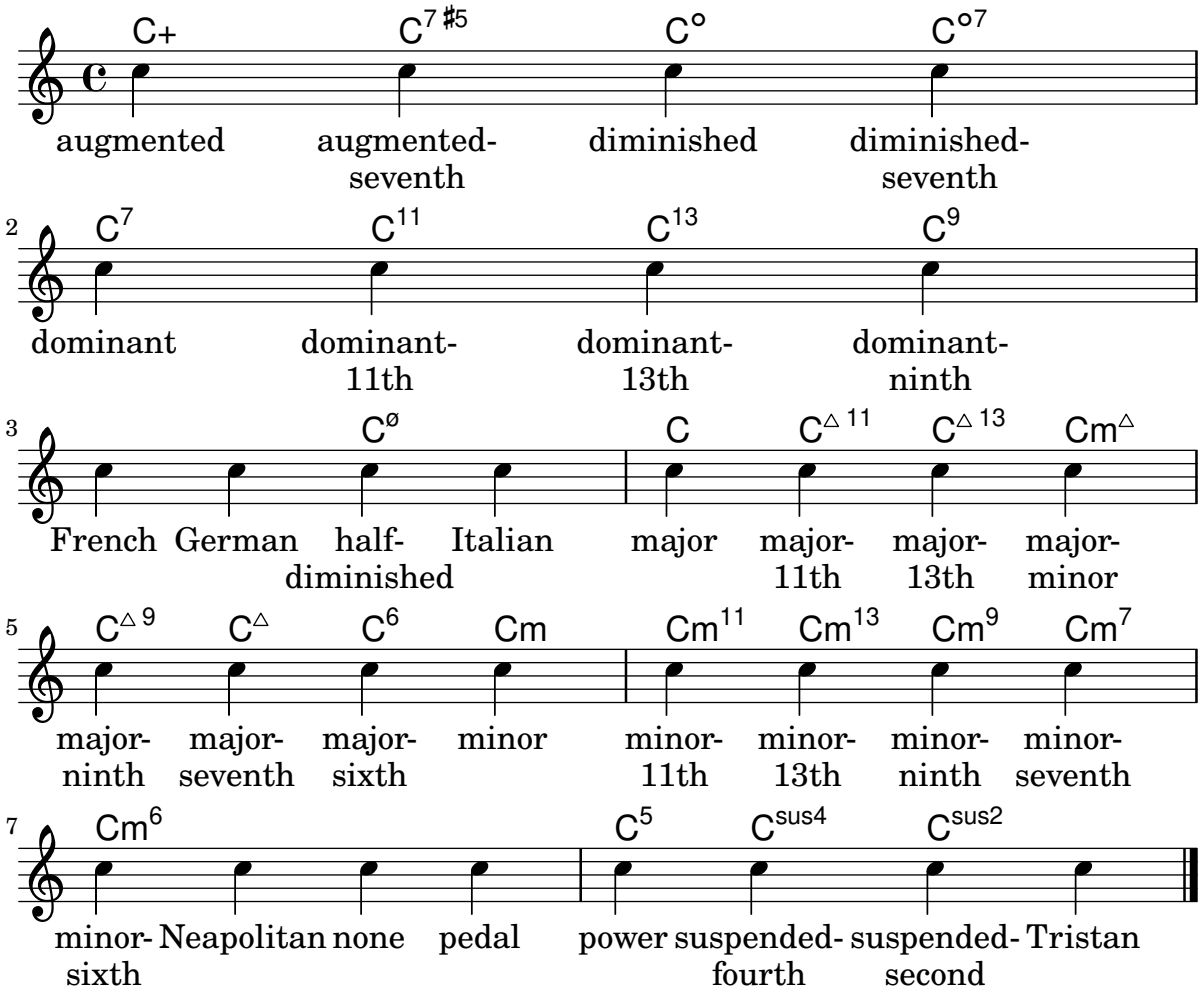
71a-Chordnames.xml

A normal staff with several (complex) chord names displayed.



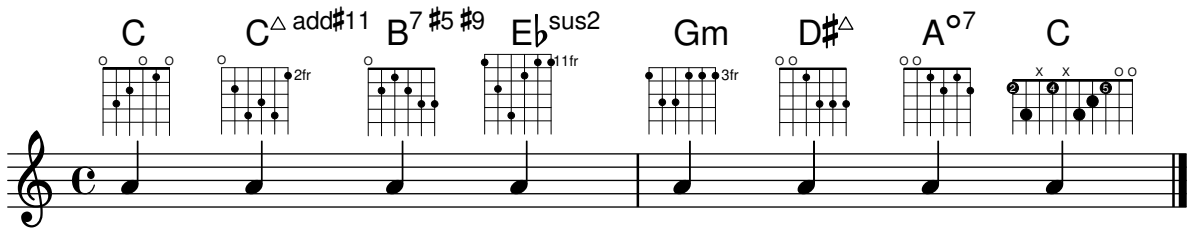
71b-Chordnames-Kinds.xml

All values of the <kind> child element of <harmony> (except 'other').



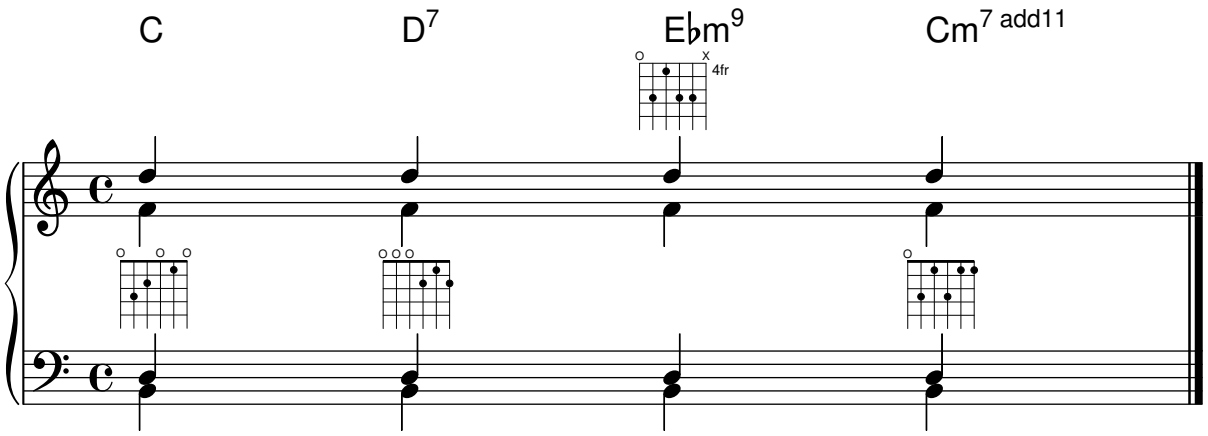
71c-ChordsFrets.xml

A staff with chord names and some fretboards shown. The fretboards can have an arbitrary number of frets/strings, can start at an arbitrary fret and can even contain fingering information.



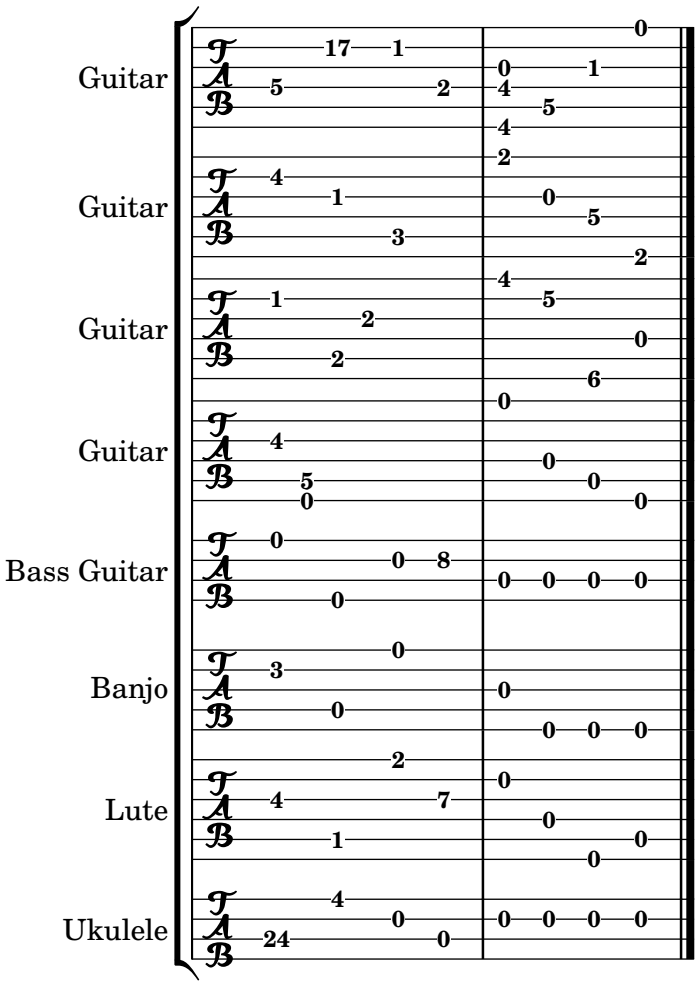
71d-ChordsFrets-Multistaff.xml

Chords and fretboards assigned to the voices in a multi-voice, multi-staff part. There should be fret diagrams above each of the two staves.



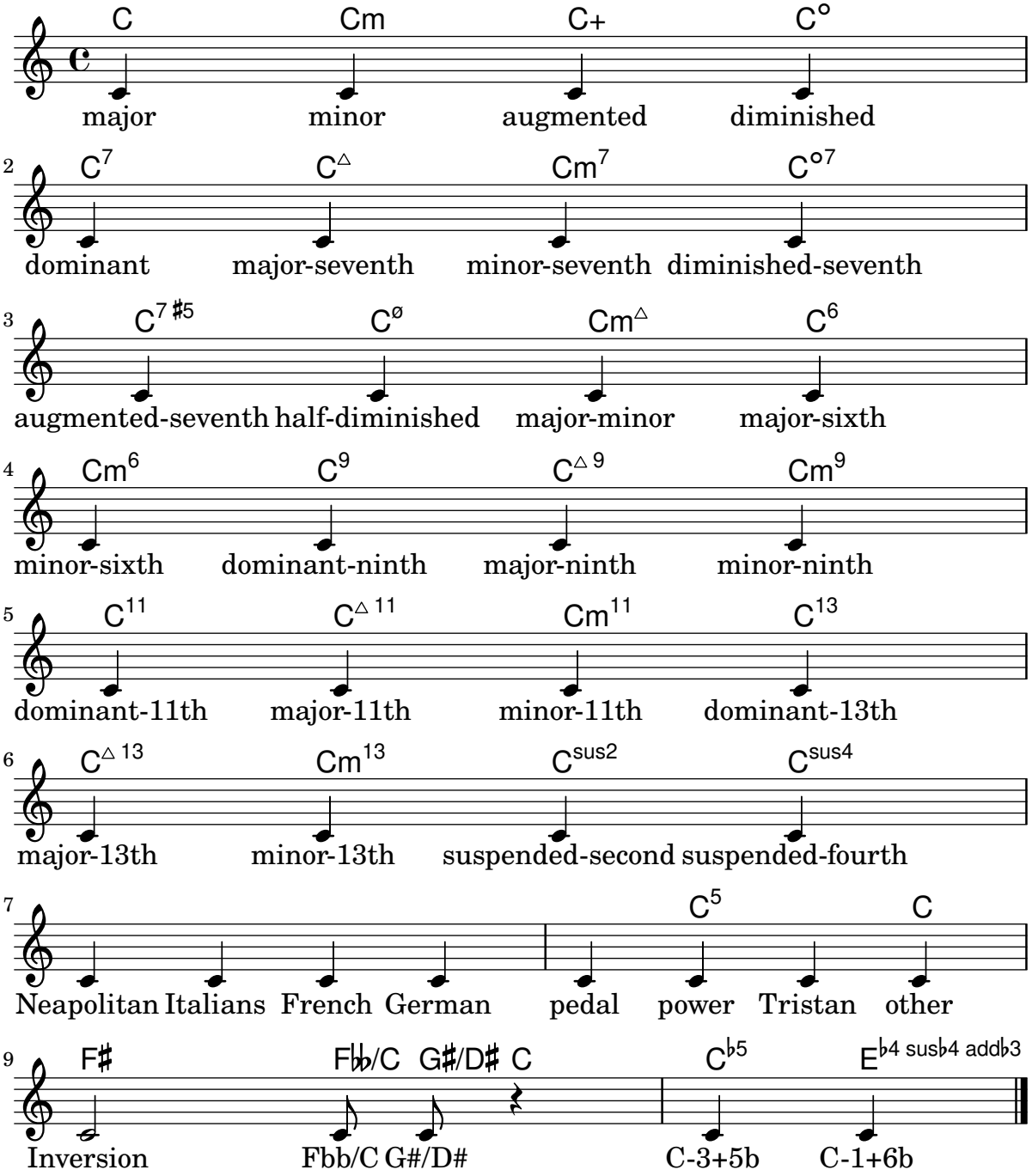
71e-TabStaves.xml

Some tablature staves, with explicit fingering information and different string tunings given in the MusicXML file.



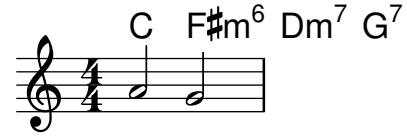
71f-AllChordTypes.xml

All chord types defined in MusicXML. The staff will only contain one c' note (NO chord) for all of them, but the chord names should be properly printed.



71g-MultipleChordnames.xml

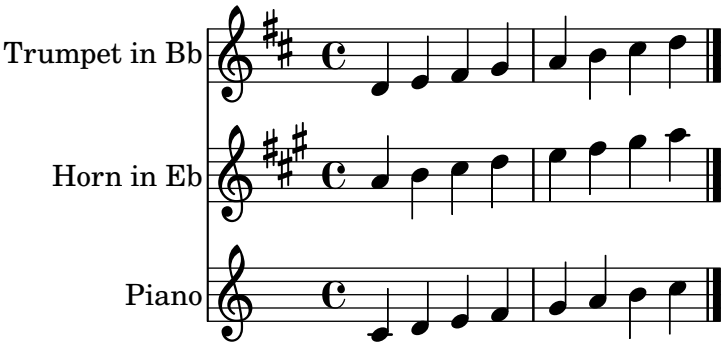
There can be multiple subsequent harmony elements, indicating a harmony change during a note



72 ... Transposing instruments

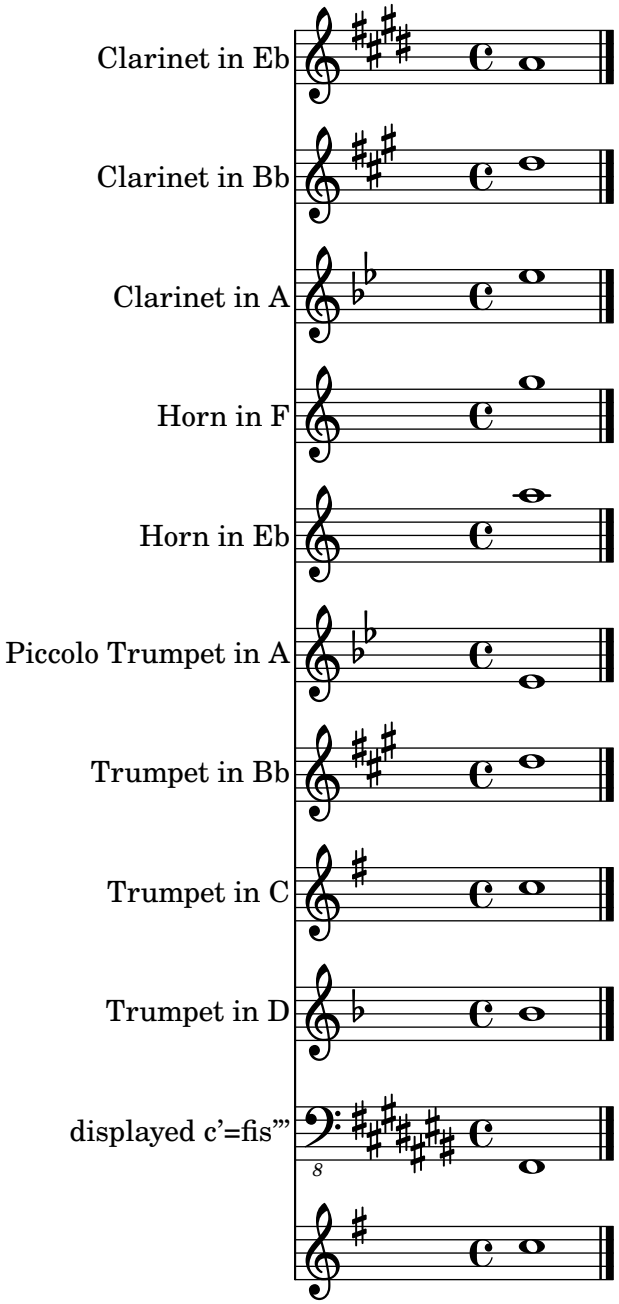
72a-TransposingInstruments.xml

Transposing instruments: Trumpet in Bb, Horn in Eb, Piano; All of them show the C major scale (the trumpet with 2 sharp, the horn with 3 sharp).



72b-TransposingInstruments-Full.xml

Various transposition. Each part plays a c'', just displayed in different display pitches. The second-to-last staff uses a transposition where the displayed c' is an actual f''' concert pitch. The final staff is an untransposed instrument.

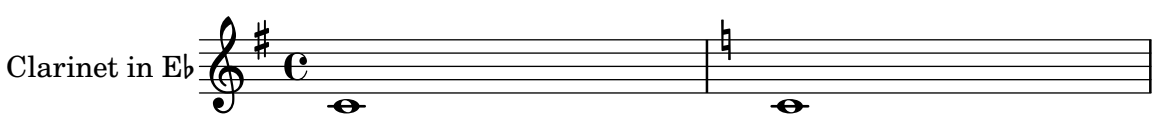


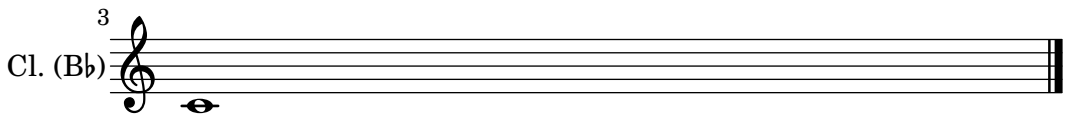
72c-TransposingInstruments-Change.xml

An instrument change from one transposition (Clarinet in Eb) to another transposing instrument (Clarinet in Bb). The displayed instrument name should also be updated.

The whole piece is in Bb major (sounding), so first the key signature should be one flat, after the change it should have no accidentals.

Both the instrument name and instrument name abbreviation use the <accidental-text> element to display a proper 'flat' glyph.

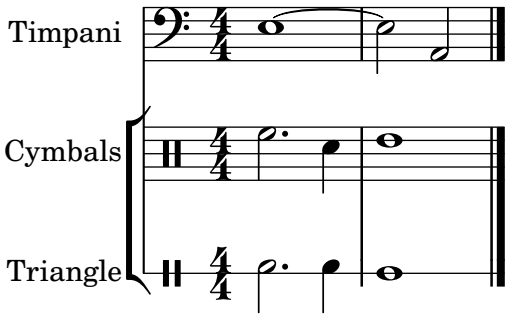




73 ... Percussion

73a-Percussion.xml

Three types of percussion staves: A five-line staff with bass clef for Timpani, a five-line staff with percussion clef, and a one-line percussion staff with only unpitched notes.

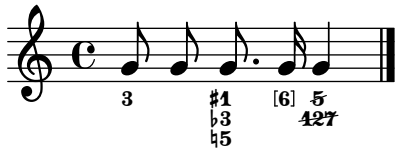


74 ... Figured bass

74a-FiguredBass.xml

Some figured bass containing alterated figures, bracketed figures and slashed figures.

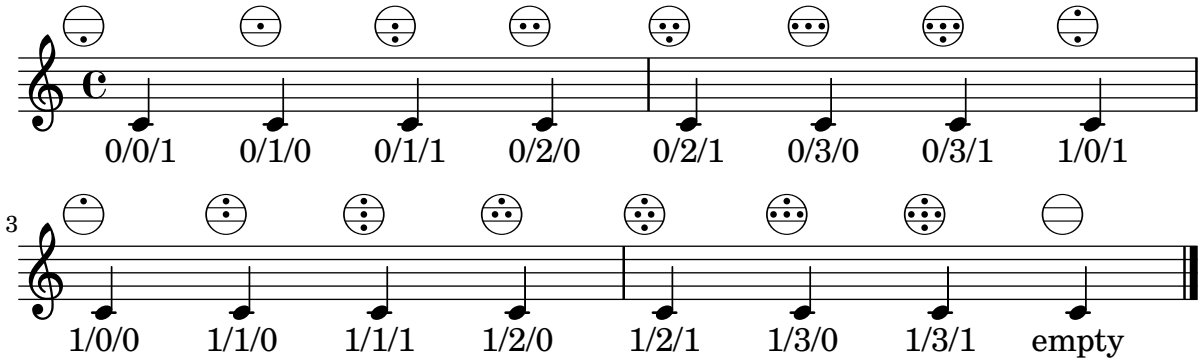
Note that this file does not contain any extenders!



75 ... Other instrumental notation

75a-AccordionRegistrations.xml

All possible accordion registrations.



90 ... Compressed MusicXML files

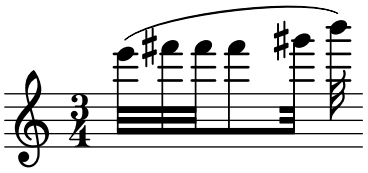
90a-Compressed-MusicXML.mxl

A compressed MusicXML file, containing a simple MusicXML score and the corresponding .pdf output for reference.

99 ... Compatibility with broken MusicXML

99a-Sibelius5-IgnoreBeaming.xml

Dolet 3 for Sibelius (5.1) did not print out any closing beam tags, only starting and continuing beam tags. For such files, one either needs to ignore all beaming information or close all beams



99b-Lyrics-BeamsMelismata-IgnoreBeams.xml

If we properly ignore all beaming information from the Dolet 3 for Sibelius export file, make sure that the lyrics syllables are still assigned to the correct notes.