

# Unofficial MusicXML test suite

# 1 Introduction

## Why a MusicXML test suite?

This test suite of sample **MusicXML** 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.

## Downloading the test suite

The complete set of MusicXML test files contained in this suite can be downloaded [here](#) as a ZIP archive.

## Connection with **LilyPond**

At the same time as providing a generic test suite for MusicXML document, this test suite also serves as proofs for the `musicxml2ly` script provided with LilyPond 2.12.3. The images shown in the [Chapter 2 \[Test cases\], page 4](#) chapter 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 or figure for each example to 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 element 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
- 11-13 ... Staff attributes: Time signatures, Clefs, Key signatures
- 21-24 ... Note settings: Chorded notes, note heads, tuplets, grace notes
- 31-33 ... Notations and articulations: Dynamics (staff-attached), Notations (note-attached), Spanners
- 41-44 ... Parts: Multiple parts, multi-voice parts, multi-staff parts
- 45-46 ... Measure issues and repeats
- 51-52 ... Page issues: Header fields, page layout
- 55-59 ... Exact positioning of items, offsets, etc.
- 61-69 ... Vocal music
- 71-75 ... Instrument-specific: Guitar (Chord, fretboards), Transposing instruments, Percussion, Figured Bass, Others
- 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.

## 2 Test cases

### 01 ... Pitches

'01a-Pitches-Pitches.ly' All pitches from G to c'' in ascending steps; First without accidentals, then with a sharp and then with a flat accidental. Double alterations and cautionary accidentals are tested at the end.

### Pitches and accidentals

The musical score consists of five staves of music in treble clef, 4/4 time. The first staff (measures 1-6) shows ascending steps from G4 to c''5 without accidentals. The second staff (measures 7-11) shows ascending steps from G4 to c''5 with a sharp accidental. The third staff (measures 12-16) shows ascending steps from G4 to c''5 with a flat accidental. The fourth staff (measures 17-21) shows ascending steps from G4 to c''5 with a double flat accidental. The fifth staff (measures 22-26) shows ascending steps from G4 to c''5 with a double sharp accidental, followed by a double flat accidental, and finally a sharp accidental with a cautionary flat accidental.

'01b-Pitches-Intervals.ly' All pitch intervals in ascending jump size.

### Various pitches and interval sizes

The musical score consists of one staff of music in treble clef, 2/4 time. It shows ascending steps from G4 to c''5 with various accidentals: G4, A4, B4, C5, D5, E5, F5, G5, A5, B5, C6, D6, E6, F6, G6, A6, B6, C7, D7, E7, F7, G7, A7, B7, C8, D8, E8, F8, G8, A8, B8, C9, D9, E9, F9, G9, A9, B9, C10, D10, E10, F10, G10, A10, B10, C11, D11, E11, F11, G11, A11, B11, C12, D12, E12, F12, G12, A12, B12, C13, D13, E13, F13, G13, A13, B13, C14, D14, E14, F14, G14, A14, B14, C15, D15, E15, F15, G15, A15, B15, C16, D16, E16, F16, G16, A16, B16, C17, D17, E17, F17, G17, A17, B17, C18, D18, E18, F18, G18, A18, B18, C19, D19, E19, F19, G19, A19, B19, C20, D20, E20, F20, G20, A20, B20, C21, D21, E21, F21, G21, A21, B21, C22, D22, E22, F22, G22, A22, B22, C23, D23, E23, F23, G23, A23, B23, C24, D24, E24, F24, G24, A24, B24, C25, D25, E25, F25, G25, A25, B25, C26, D26, E26, F26, G26, A26, B26, C27, D27, E27, F27, G27, A27, B27, C28, D28, E28, F28, G28, A28, B28, C29, D29, E29, F29, G29, A29, B29, C30, D30, E30, F30, G30, A30, B30, C31, D31, E31, F31, G31, A31, B31, C32, D32, E32, F32, G32, A32, B32, C33, D33, E33, F33, G33, A33, B33, C34, D34, E34, F34, G34, A34, B34, C35, D35, E35, F35, G35, A35, B35, C36, D36, E36, F36, G36, A36, B36, C37, D37, E37, F37, G37, A37, B37, C38, D38, E38, F38, G38, A38, B38, C39, D39, E39, F39, G39, A39, B39, C40, D40, E40, F40, G40, A40, B40, C41, D41, E41, F41, G41, A41, B41, C42, D42, E42, F42, G42, A42, B42, C43, D43, E43, F43, G43, A43, B43, C44, D44, E44, F44, G44, A44, B44, C45, D45, E45, F45, G45, A45, B45, C46, D46, E46, F46, G46, A46, B46, C47, D47, E47, F47, G47, A47, B47, C48, D48, E48, F48, G48, A48, B48, C49, D49, E49, F49, G49, A49, B49, C50, D50, E50, F50, G50, A50, B50, C51, D51, E51, F51, G51, A51, B51, C52, D52, E52, F52, G52, A52, B52, C53, D53, E53, F53, G53, A53, B53, C54, D54, E54, F54, G54, A54, B54, C55, D55, E55, F55, G55, A55, B55, C56, D56, E56, F56, G56, A56, B56, C57, D57, E57, F57, G57, A57, B57, C58, D58, E58, F58, G58, A58, B58, C59, D59, E59, F59, G59, A59, B59, C60, D60, E60, F60, G60, A60, 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A304, B304, C305, D305, E305, F305, G305, A305, B305, C306, D306, E306, F306, G306, A306, B306, C307, D307, E307, F307, G307, A307, B307, C308, D308, E308, F308, G308, A308, B308, C309, D309, E309, F309, G309, A309, B309, C310, D310, E310, F310, G310, A310, B310, C311, D311, E311, F311, G311, A311, B311, C312, D312, E312, F312, G312, A312, B312, C313, D313, E313, F313, G313, A313, B313, C314, D314, E314, F314, G314, A314, B314, C315, D315, E315, F315, G315, A315, B315, C316, D316, E316, F316, G316, A316, B316, C317, D317, E317, F317, G317, A317, B317, C318, D318, E318, F318, G318, A318, B318, C319, D319, E319, F319, G319, A319, B319, C320, D320, E320, F320, G320, A320, B320, C321, D321, E321, F321, G321, A321, B321, C322, D322, E322, F322, G322, A322, B322, C323, D323, E323, F323, G323, A323, B323, C324, D324, E324, F324, G324, A324, B324, C325, D325, E325, F325, G325, A325, B325, C326, D326, E326, F326, G326, A326, B326, C327, D327, E327, F327, G327, A327, B327, C328, D328, E328, F328, G328, A328, B328, C329, D329, E329, F329, G329, A329, B329, C330, D330, E330, F330, G330, A330, B330, C331, D331, E331, F331, G331, A331, B331, C332, D332, E332, F332, G332, A332, B332, C333, D333, E333, F333, G333, A333, B333, C334, D334, E334, F334, G334, A334, B334, C335, D335, E335, F335, G335, A335, B335, C336, D336, E336, F336, G336, A336, B336, C337, D337, E337, F337, G337, A337, B337, C338, D338, E338, F338, G338, A338, B338, C339, D339, E339, F339, G339, A339, B339, C340, D340, E340, F340, G340, A340, B340, C341, D341, E341, F341, G341, A341, B341, C342, D342, E342, F342, G342, A342, B342, C343, D343, E343, F343, G343, A343, B343, C344, D344, E344, F344, G344, A344, B344, C345, D345, E345, F345, G345, A345, B345, C346, D346, E346, F346, G346, A346, B346, C347, D347, E347, F347, G347, A347, B347, C348, D348, E348, F348, G348, A348, B348, C349, D349, E349, F349, G349, A349, B349, C350, D350, E350, F350, G350, A350, B350, C351, D351, E351, F351, G351, A351, B351, C352, D352, E352, F352, G352, A352, B352, C353, D353, E353, F353, G353, A353, B353, C354, D354, E354, F354, G354, A354, B354, C355, D355, E355, F355, G355, A355, B355, C356, D356, E356, F356, G356, A356, B356, C357, D357, E357, F357, G357, A357, B357, C358, D358, E358, F358, G358, A358, B358, C359, D359, E359, F359, G359, A359, B359, C360, D360, E360, F360, G

'01c-Pitches-NoVoiceElement.ly' The <voice> element of notes is optional in MusicXML (although Dolet always writes it out). Here, there is one note with lyrics, but without a voice assigned. It should still be correctly converted.

A

'01d-Pitches-Microtones.ly' 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.

## 02 ... Rests

'02a-Rests-Durations.ly' All different rest lengths: A two-bar multi-measure rest, a whole rest, a half, etc. until a 128th-rest; Then the same with dotted durations.

### Rest unit test

'02b-Rests-PitchedRests.ly' Rests can have explicit pitches, where they are displayed. The first rest uses no explicit position and should use the default position, all others are explicitly positioned somewhere else.



'02c-Rests-MultiMeasureRests.ly' Four multi-measure rests: 3 measures, 15 measures, 1 measure, and 12 measures.



'02d-Rests-Multimeasure-TimeSignatures.ly' Multi-Measure rests should always be converted into durations that are a multiple of the time signature.



'02e-Rests-NoType.ly' In some cases, a rest might not have its type attribute set (this happens, for example, with voices in Finale, where you don't manually insert a rest).

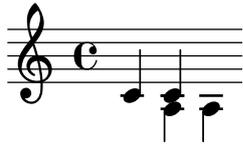


### 03 ... Rhythm

'03a-Rhythm-Durations.ly' All note durations, from long, brevis, whole until 128th; First with their plain values, then dotted and finally doubly-dotted.



'03b-Rhythm-Backup.ly' Two voices with a backup, that does not jump to the beginning for the measure for voice 2, but somewhere in the middle. Voice 2 thus won't have any notes or rests for the first beat of the measures.

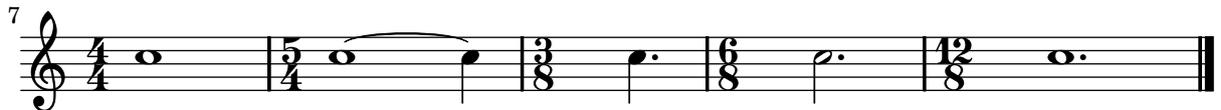


'03c-Rhythm-DivisionChange.ly' Although uncommon, the divisions of a quarter note can change somewhere in the middle of a MusicXML file. Here, the first half measure uses a division of 1, which then changes to 8 in the middle of the first measure and to 38 in the middle of the second measure.



## 11 ... Time signatures

'11a-TimeSignatures.ly' 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.ly' A score without a time signature (but with a key and clefs)



'11c-TimeSignatures-CompoundSimple.ly' Compound time signatures with same denominator: (3+2)/8 and (5+3+1)/4.



'11d-TimeSignatures-CompoundMultiple.ly' Compound time signatures with separate fractions displayed: 3/8+2/8+3/4 and 5/2+1/8.



'11e-TimeSignatures-CompoundMixed.ly' Compound time signatures of mixed type: (3+2)/8+3/4.



'11f-TimeSignatures-SymbolMeaning.ly' A time signature of 3/8 with the symbol="cut" attribute and two symbol="single-number" attributes with compound time signatures. Shall the symbol be ignored in this case?



'11g-TimeSignatures-SingleNumber.ly' Time signature displayed as a single number.

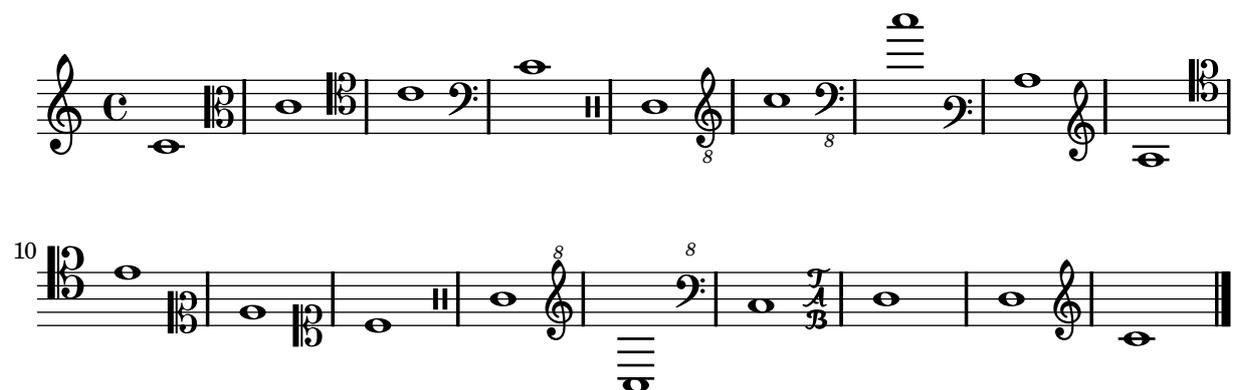


'11h-TimeSignatures-SenzaMisura.ly' Senza-misura time signature



## 12 ... Clefs

'12a-Clefs.ly' Various clefs: G, C, F, percussion, TAB and none; some are also possible with octavation and on other staff lines than their default (e.g. soprano/alto/tenor/bariton C clefs); Each measure shows a different clef (measure 17 has the "none" clef), only measure 18 has the same treble clef as measure 1.



'12b-Clefs-NoKeyOrClef.ly' A score without any key or clef defined. The default (4/4 in treble clef) should be used.



### 13 ... Key signatures

'13a-KeySignatures.ly' Various key signature: from 11 flats to 11 sharps (each one first one measure in major, then one measure in minor)

### Different Key signatures

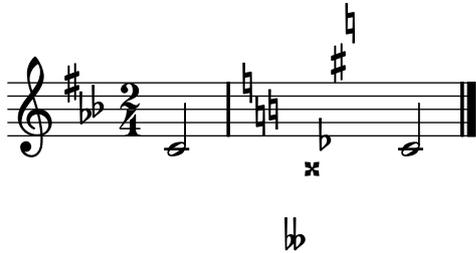
The musical score consists of 13 staves, each representing a different key signature. The first seven staves (measures 1-31) show key signatures with 11 flats, 10 flats, 9 flats, 8 flats, 7 flats, 6 flats, and 5 flats. The last six staves (measures 32-42) show key signatures with 4 sharps, 5 sharps, 6 sharps, 7 sharps, 8 sharps, and 9 sharps. Each staff begins with a treble clef and a 2/4 time signature. The notes are quarter notes, and the key signature is indicated by a key signature symbol at the beginning of each staff.

'13b-KeySignatures-ChurchModes.ly' All different modes: major, minor, ionian, dorian, phrygian, lydian, mixolydian, aeolian, and locrian; All modes are given with 2 sharps.

The musical score consists of a single staff with a treble clef and a common time signature (C). It contains 9 measures, each representing a different church mode. The key signature is 2 sharps (F# and C#). The notes are quarter notes, and the mode is indicated by the key signature and the specific notes in each measure.

major minor ionian dorian phrygian lydian mixolydian aeolian locrian

'13c-KeySignatures-NonTraditional.ly' Non-traditional key signatures, where each alteration is separately given. Here we have (f sharp, a flat, b flat) and (c flatflat, g sharp sharp, d flat, b sharp, f natural), where in the second case an explicit octave is given for each alteration.



'13d-KeySignatures-Microtones.ly' 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).



## 21 ... Chorded notes

'21a-Chord-Basic.ly' One simple chord consisting of two notes.



'21b-Chords-TwoNotes.ly' Some subsequent (identical) two-note chords.



'21c-Chords-ThreeNotesDuration.ly' Some three-note chords, with various durations.



'21d-Chords-SchubertStabatMater.ly' 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.ly' Check for proper chord detection after a pickup measure (i.e. the first beat of the measure is not aligned with multiples of the time signature)!

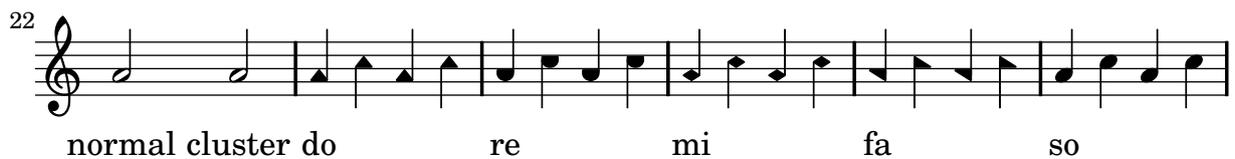
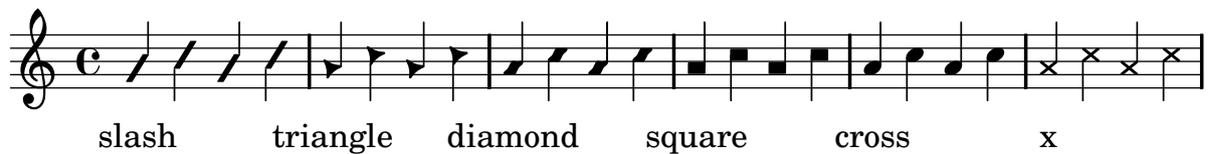


'21f-Chord-ElementInBetween.ly' Between the individual notes of a chord there can be direction or harmony elements, which should be properly assigned to the chord (or the position of the chord).



## 22 ... Note settings, heads, etc.

'22a-Noteheads.ly' 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, each note head style is printed with a half note (should have an unfilled head by default). Finally, the Aiken note head styles are tested, once with stem up and once with stem down.





element. The triplets 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 tuplet of measures 3-5 uses 'display-type="actual"', the second one 'display-type="both"'. FIXME: The tuplet-normal should coincide with the real notes!

The image shows three measures of music on a single staff. Measure 1 contains two groups of three eighth notes, each with a '3' below it. Measure 2 contains two groups of three eighth notes, each with a '3' below it. Measure 3 contains two groups of three eighth notes, each with a '3' below it. Measure 4 contains two groups of three eighth notes, each with a '3' below it. Measure 5 contains two groups of three eighth notes, each with a '7:5' below it.

'23d-Tuplets-Nested.ly' Triplets can be nested. Here there is a 5:2 tuplet inside a 3:2 tuple (all consisting of written eighth notes).

The image shows two measures of music on a single staff. The first measure contains a 3:2 tuplet of six eighth notes. The second measure contains a 5:2 tuplet of ten eighth notes.

'23e-Tuplets-Tremolo.ly' Tremolo triplets are triplets on single notes with a tremolo ornament. The application shall correctly import these notes with 2/3 or their time...

The image shows two measures of music on a single staff. The first measure contains three groups of three eighth notes, each with a '3' above it. The second measure contains three groups of three eighth notes, each with a '3' above it. The third measure contains a group of six eighth notes with a '6' above it, followed by a group of three eighth notes with a '3' above it. The fourth measure contains a group of three eighth notes with a '3' above it, followed by a group of six eighth notes with a '6' above it. The fifth measure contains a group of six eighth notes with a '6' above it, followed by a group of three eighth notes with a '3' above it. The piece ends with a double bar line. The dynamic marking *fp* is placed below the staff.

'23f-Tuplets-DurationButNoBracket.ly' Some "triplets" on the end of the first and in the second staff, using only <time-modification>, but not explicit tuplet bracket. Thus, the duration of the notes in the second staff should be scaled properly in comparison to staff 1, but no visual indication about the triplets is given.

The image shows two staves of music in 4/4 time. The first staff contains four quarter notes. The second staff contains four quarter notes, with the last two notes being triplets of eighth notes.

## 24 ... Grace notes

'24a-GraceNotes.ly' Different kinds of grace notes: acciaccatura, appoggiatura; beamed grace notes; grace notes with accidentals; different durations of the grace notes.



'24b-ChordAsGraceNote.ly' Chords as grace notes.



'24c-GraceNote-MeasureEnd.ly' 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.ly' Some grace notes and after-graces (indicated by steal-time-previous and steal-time-next).



'24e-GraceNote-StaffChange.ly' A grace note on a different staff than the actual note.



'24f-GraceNote-Slur.ly' A grace note with a slur to the actual note. This can be interpreted as acciaccatura or appoggiatura, depending on the existence of a slash.



### 31 ... Dynamics and other single symbols

'31a-Directions.ly' All <direction> elements defined in MusicXML. The lyrics for each note describes the direction element assigned to that note.

#### MusicXML directions (attached to staff)

The image displays five staves of musical notation, each illustrating different MusicXML direction elements. The notes are labeled with their corresponding direction elements and their default values.

- Staff 1:** Shows four notes with direction elements: **A** (reh.A (def=sq.)), **B** (reh.B), **Test** (reh.Test (sq.)), and **Crc** (reh.Crc (crc.)).
- Staff 2:** Shows notes with dynamic markings: *words*, *p*, *pp*, *ppp*, *pppp*, *ppppp*, *pppppp*, *f*, and *ff*. Symbols for Segno, Coda, and Eyegl. are also present.
- Staff 3:** Shows notes with dynamic markings: *fff*, *ffff*, *fffff*, *mp*, *mf*, *sf*, *sfp*, *sfpp*, *fp*, *rf*, *rfz*, *sfz*, *sfz*, *fz*, and *abc-ffz*.
- Staff 4:** Shows notes with performance instructions: hairpin - cresc, dash - es, bra - cket, oct. - shift, pedal - change, and mark.
- Staff 5:** Shows notes with performance instructions: Metr. Harp, ped. Damp, Damp all, Scord., Accordion reg., subito, ppp, and crescto fff.

'31c-MetronomeMarks.ly' Tempo Markings: note=bpm, text (note=bpm), note=note, (note=note), (note=bpm)

$\text{♩} = 100$      $\text{♩} = 100$      $(\text{♩} = 77)$   
 Adagio

### 32 ... Notations and Articulations

'32a-Notations.ly' All <notation> elements defined in MusicXML. The lyrics show the notation assigned to each note.

#### MusicXML notations (attached to note)

ferm.    normal ferm.    angled ferm.    square ferm.

2  
 inv.ferm.    arp.    non-arp.    acc.mark    acc.    str.-acc.    stacc.    ten.

4  
 det.-leg.    stacc.ss    spicc.    scoop    plop    doit    falloff    breath

6  
 caes.    stress unstr.    tr.    turn    del.turn    inv.turn    shake    wavy-wavy line

9  
 mord.    inv.mord.    schl.    trem.    turn+acc.    turn+acc.(ab.+bel./rel to turn)

11  
 up-b.    down-b.    harm.    nat.harm.    art.harm.    nat.h./base    nat.h./touching    nat.h./sounding

13

open-str. thumb-pos. empty fing. fing.1 fing.2 fing.3 fing.4 fing.5

15

something  
fing.sth. mult.fing. empty pluck pluck a dbl.tng. trpl.tng. stopped snp.pizz.

17

empty fret fret0 empty str. str. 5 hammer - on pull - off

19

bend b.3 with-bar pre-b. -0.5 b. release 3.5 tap tap T heel toe

21

fingern. *f ppp sfp sffz*  
f ppp sfp Oth.dyn. both above ab./bel./bel.

'32b-Articulations-Texts.ly' Text markup: different font sizes, weights and colors.

**Bold, Large**

Normal, Small

**Bold, Small**

**Bold, Medium**

Normal, Large

Normal, Medium

Normal, Small, Colored, Below

'32c-MultipleNotationChildren.ly'

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

'32d-Arpeggio.ly' Different Arpeggio directions (normal, up, down, non-arpeggiate)

normal up normal down normal non-arp. normal

### 33 ... Spanners

'33a-Spanners.ly' Several spanners defined in MusicXML: tuplet, slur (solid, dashed), tie, wedge (cresc, dim), tr + wavy-line, 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), bend-alter, slide (solid), grouping, two-note tremolo, hammer-on, pull-off, pedal (down, change, up).

9

15mb---

17

Red\*Red.\*

'33b-Spanners-Tie.ly' Two simple tied whole notes

'33c-Spanners-Slurs.ly' 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.

'33d-Spanners-OctaveShifts.ly' All types of octave shifts (15ma, 15mb, 8va, 8vb)

15ma- ;

8va- ;

15mb- ;

8vb- ;

'33e-Spanners-OctaveShifts-InvalidSize.ly' Invalid octave-shifts: 27 down, 11 up.



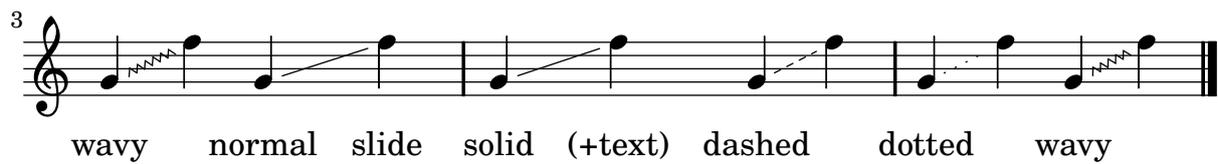
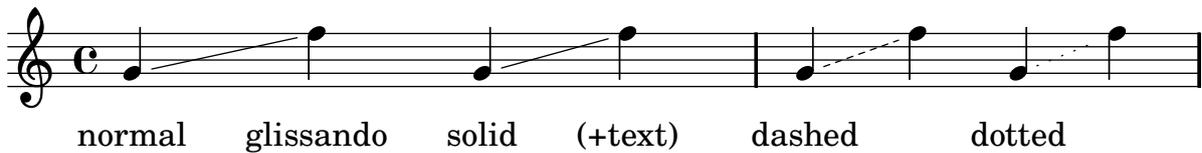
‘33f-Trill-EndingOnGraceNote.ly’ A trill spanner that spans a grace note and ends on an after-grace note at the end of the measure.



‘33g-Slur-ChordedNotes.ly’ Slurs on chorded notes: Only the first note of the chord should get the slur notation. Some applications print out the slur for all notes – these should be ignored.

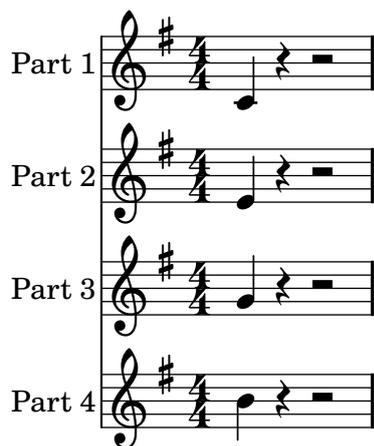


‘33h-Spanners-Glissando.ly’ All different types of glissando defined in MusicXML



## 41 ... Multiple parts (staves)

‘41a-MultiParts-Partorder.ly’ A piece with four parts (P0, P1, P2, P3; different from what Finale creates!). Are they converted in the correct order?



'41b-MultiParts-MoreThan10.ly' A piece with 20 parts to check whether an application supports that many parts and whether they are correctly sorted.

P0



P1



P2



P3



P4



P5



P6



P7



P8



P9



P10



P11



P12



P13



P14



P15



P16



P17



P18



'41c-StaffGroups.ly' A huge orchestra score with 28 parts and different kinds of nested bracketed groups. Each part/group is assigned a name and an abbreviation to be shown before the staff. Also, most of the groups show unbroken barlines, while the barlines are broken between the groups.

Piccolo

Flute 1

Flute 2

Oboe

Oboe English

English Horn

Clarinet in Eb

Clarinet in Bb 1

Clarinet in Bb 2

Bass Clarinet

Bassoon 1

Bassoon 2

Contrabassoon

Horn in F 1

Horn in F 2

Trumpet in C 1

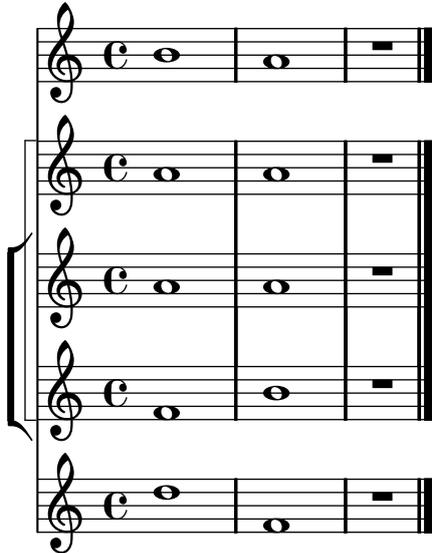
Trumpet in C 2

Trombone 1

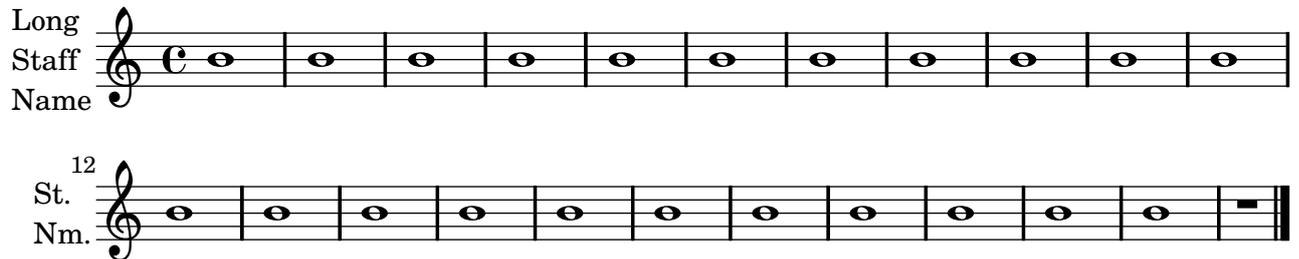
Trombone 2

This image shows a page of a musical score for a woodwind and brass ensemble. The score is organized into two systems. The first system contains 12 staves, and the second system contains 6 staves. Each staff is labeled with an instrument name on the left. The instruments are: Piccolo, Flute 1, Flute 2, Oboe, Oboe English, English Horn, Clarinet in Eb, Clarinet in Bb 1, Clarinet in Bb 2, Bass Clarinet, Bassoon 1, Bassoon 2, Contrabassoon, Horn in F 1, Horn in F 2, Trumpet in C 1, Trumpet in C 2, Trombone 1, and Trombone 2. The music is written in common time (C) and features a simple melodic line for each instrument, consisting of a quarter note followed by a quarter rest. The key signature varies by instrument: Piccolo, Flute 1, Flute 2, Oboe, and Contrabassoon are in C major; Oboe English and English Horn are in D major (one sharp); Clarinet in Eb is in E major (three sharps); Clarinet in Bb 1 and Clarinet in Bb 2 are in Bb major (two flats); Bass Clarinet is in Bb major (two flats); Bassoon 1 and Bassoon 2 are in Bb major (two flats); Horn in F 1 and Horn in F 2 are in F major (one sharp); Trumpet in C 1 and Trumpet in C 2 are in C major; Trombone 1 and Trombone 2 are in Bb major (two flats). The staves are grouped by instrument type with brackets on the left side.

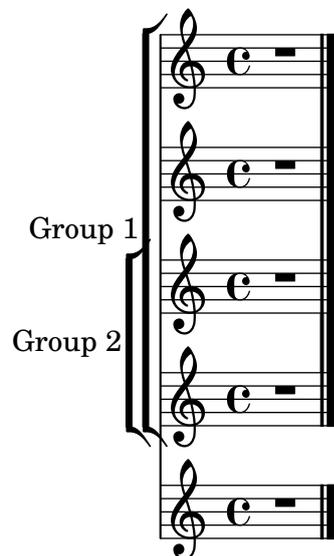
'41d-StaffGroups-Nested.ly' Two properly nested part groups: One group (with a square bracket) goes from staff 2 to 4) and another group (with a curly bracket) goes from staff 3 to 4.



'41e-StaffGroups-InstrumentNames-Linebroken.ly' Part names and abbreviations can contain line breaks.



'41f-StaffGroups-Overlapping.ly' MusicXML allows for overlapping part-groups, while many applications do not allow overlapping groups, but require them to be properly nested. In this case, one group (with a square bracket) goes from staff 2 to 4) and another group (with a curly bracket) goes from staff 3 to 5.



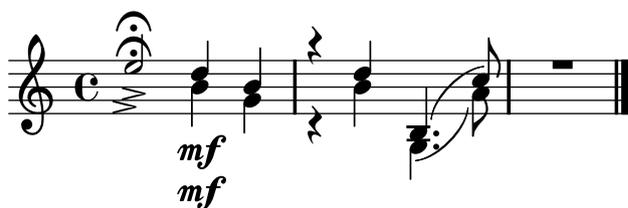
'41g-PartNoId.ly' A part with no id attribute. Since this piece has only one part, it is clear which part is described by the one part element.

'41h-TooManyParts.ly' This piece has more part elements than the part-list section gives. One can either convert all the parts present, but not listed in the part-list, or simply not import / ignore them.



## 42 ... Multiple voices per staff

'42a-MultiVoice-TwoVoicesOnStaff-Lyrics.ly' Two voices share one staff. Each voice is assigned some lyrics.



This is the lyrics of  
This is the lyrics

'42b-MultiVoice-MidMeasureClefChange.ly' A multi-voice / multi-staff part with a clef change in the middle of a measure and a <backward> for voice 2 jumping back beyond that clef change.



## 43 ... One part on multiple staves

'43a-PianoStaff.ly' A simple piano staff



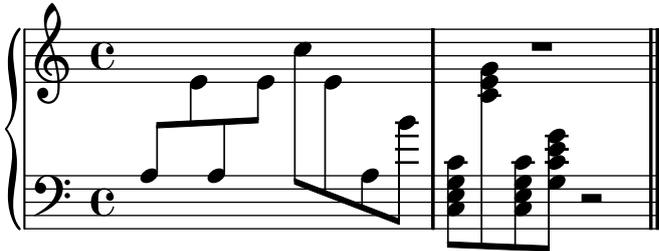
'43b-MultiStaff-DifferentKeys.ly' A piano staff with different keys and clefs for each of its staves. The keys and clefs for both staves are given at the very beginning of the measure.



'43c-MultiStaff-DifferentKeysAfterBackup.ly' 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 backward, just before the first note of the second staff is given, but after the whole measure for staff 1 has been given.



'43d-MultiStaff-StaffChange.ly' Staff changes in a piano staff. The voice from the second staff has some notes/chords on the first staff. The final two chords have some notes on the first, some on the second staff.

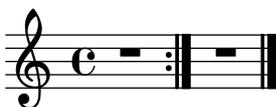


'43e-Multistaff-ClefDynamics.ly' A piano staff with dynamics and clef changes, where each element (fff, wedge and clef changes) applies only to one voice or one staff, respectively.

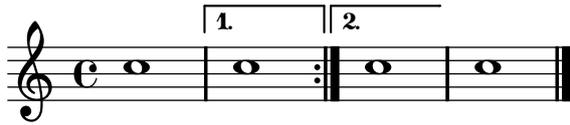


## 45 ... Repeats

'45a-SimpleRepeat.ly' A simple, repeated measure (repeated 5 times)



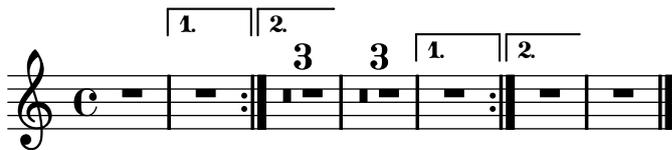
'45b-RepeatWithAlternatives.ly' A simple repeat with two alternative endings (volta brackets).



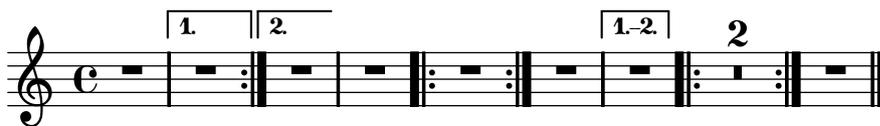
'45c-RepeatMultipleTimes.ly' Repeats can also be nested.



'45d-Repeats-Nested-Alternatives.ly' Nested repeats, each with alternative endings.



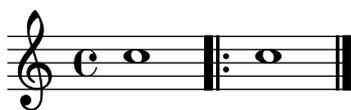
'45e-Repeats-Nested-Alternatives.ly' Some more nested repeats with alternatives. The barline between measure 7 and 8 will probably be messed up! (Should be a repeat on both sides!)



'45f-Repeats-InvalidEndings.ly' Some more nested repeats with alternatives, where the MusicXML file does not make sense in the first place. How well are applications able to cope with improper repeats and alternatives?

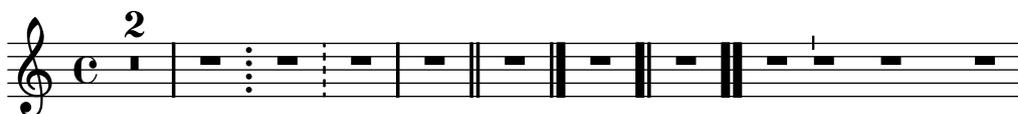


'45g-Repeats-NotEnded.ly' A forward-repeating bar line without an ending repeat bar.



## 46 ... Barlines, Measures

'46a-Barlines.ly' Different types of (non-repeat) barlines: default (no setting), regular, dotted, dashed, heavy, light-light, light-heavy, heavy-light, heavy-heavy, tick, short, none.



'46b-MidmeasureBarline.ly' Barlines can appear at mid-measure positions, without using an implicit measure!



'46c-Midmeasure-Clef.ly' A clef change in the middle of a measure, using either an implicit measure or simply placing the attributes in the middle of the measure.



'46d-PickupMeasure-ImplicitMeasures.ly' A 3/8 pickup measure, a measure that is split into one (incomplete, only 2/4) measure and an implicit measure, and an incomplete measure (containing 3/4).



'46e-PickupMeasure-SecondVoiceStartsLater.ly' Voice 2 should start at 2nd beat of first full measure.



## 51 ... Header information

'51b-Header-Quotes.ly' Several header fields and part names can contain quotes ("). This test checks whether they are converted/imported without problems (i.e. whether they are correctly escaped when converting).

### "Quotes" in header fields

Some "Tester" Name



'51c-MultipleRights.ly' There can be multiple <rights> tags in the identification element of the score. The conversion shall still work, ideally using both of them.



## 52 ... Page layout

'52a-PageLayout.ly' Several page layout settings: paper size, margins, system margins and distances, different fonts, etc.

### Layout options



## 61 ... Lyrics

'61a-Lyrics.ly' Some notes with simple lyrics: Syllables, notes without a syllable, syllable spanners.



Trala-li Ja! Tra - ra! Bah!

'61b-MultipleLyrics.ly' Multiple (simple) lyrics. The order of the exported stanzas is relevant (identified by the number attribute in this test case)



1.Tra-la-la, ja! \_ Tra - ra...

2.tra - la-la, ja! \_ Tra - ra.

3.TRALALA, JA! \_ TRA-RA...

'61c-Lyrics-Pianostaff.ly' Lyrics assigned to the voices of a piano staff containing two simple staves. Each staff is assigned exactly one lyrics line.



tra - la-li ja! \_

TRALALI JA! \_

'61d-Lyrics-Melisma.ly' How to treat lyrics and slurred notes. Normally, a slurred group of notes is assigned only one lyrics syllable.



Me - lis - ma. \_

'61e-Lyrics-Chords.ly' Assigning lyrics to chorded notes.



Lyrics on chords

'61f-Lyrics-GracedNotes.ly' Grace notes shall not mess up the lyrics, and they shall not be assigned a syllable.



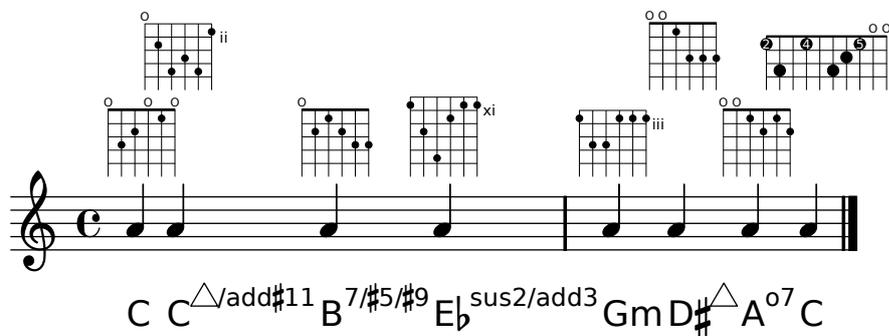
## 71 ... Guitar notation

'71a-Chordnames.ly' A normal staff with several (complex) chord names displayed.



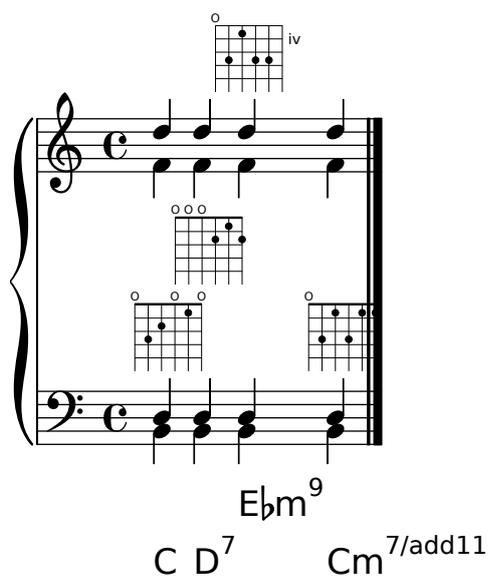
A single musical staff in treble clef with a common time signature (C). The staff contains a sequence of notes: C4, E4, G4, B4, C5, G4, E4, C4. Below the staff, the following chord names are written: C, C<sup>△</sup>add#11, B<sup>7/#5/#9</sup>, E<sup>b</sup>sus2/add3, Gm, D<sup>#</sup>△, A<sup>o7</sup>, A<sup>+</sup>.

'71c-ChordsFrets.ly' 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.



A single musical staff in treble clef with a common time signature (C). The staff contains a sequence of notes: C4, E4, G4, B4, C5, G4, E4, C4. Above the staff, several fretboard diagrams are shown for various chords, including some with fingering numbers (ii, xi, iii). Below the staff, the following chord names are written: C, C<sup>△</sup>add#11, B<sup>7/#5/#9</sup>, E<sup>b</sup>sus2/add3, Gm, D<sup>#</sup>△, A<sup>o7</sup>, C.

'71d-ChordsFrets-Multistaff.ly' 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.



A multi-staff musical notation consisting of a treble clef staff and a bass clef staff, both in common time (C). The treble staff contains a sequence of notes: C4, E4, G4, B4, C5, G4, E4, C4. The bass staff contains a sequence of notes: C3, E3, G3, B3, C4, G3, E3, C3. Above the treble staff, a fretboard diagram for E<sup>b</sup>m<sup>9</sup> is shown. Above the bass staff, two fretboard diagrams are shown. Below the bass staff, the following chord names are written: C, D<sup>7</sup>, E<sup>b</sup>m<sup>9</sup>, Cm<sup>7/add11</sup>.

'71e-TabStaves.ly' Some tablature staves, with explicit fingering information and different string tunings given in the MusicXML file.

Guitar  
 Guitar  
 Guitar  
 Guitar  
 Bass Guitar  
 Banjo  
 Lute  
 Ukulele

'71f-AllChordTypes.ly' 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.

## All MusicXML chord names/types with <root>

C  
 major  
 Cm  
 minor  
 C+  
 augmented  
 C<sup>o</sup>  
 diminished

C<sup>7</sup>  
 dominant  
 C<sup>Δ</sup>  
 major-seventh  
 Cm<sup>7</sup>  
 minor-seventh  
 C<sup>o7</sup>  
 diminished-seventh

3

$C^{7/\#5}$        $C^{\circ}$        $Cm^{\Delta}$        $C^6$

augmented-seventh      half-diminished      major-minor      major-sixth

4

$Cm^6$        $C^9$        $C^{\Delta/9}$        $Cm^9$

minor-sixth      dominant-ninth      major-ninth      minor-ninth

5

$C^{11}$        $C^{\Delta/11}$        $Cm^{11}$        $C^{13}$

dominant-11th      major-11th      minor-11th      dominant-13th

6

$C^{\Delta/13}$        $Cm^{13}$        $C^{sus2}$        $C^{sus4}$

major-13th      minor-13th      suspended-second      suspended-fourth

7

Neapolitan    Italians    French    German    pedal    power    Tristan    other

9

$F\#$        $F\flat/C$        $G\#/D\#$        $C$        $C^{b5}$        $E\flat^{b4/susb4/addb3}$

Inversion       $F\flat/C$        $G\#/D\#$        $C$        $C-3+5b$        $C-1+6b$

## 72 ... Transposing instruments

'72a-TransposingInstruments.ly' 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).

Trumpet in Bb

Horn in Eb

Piano

‘72b-TransposingInstruments-Full.ly’ 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.

Clarinet in Eb

Clarinet in Bb

Clarinet in A

Horn in F

Horn in Eb

Piccolo Trumpet in A

Trumpet in Bb

Trumpet in C

Trumpet in D

displayed c'=fis'''

## 73 ... Percussion

'73a-Percussion.ly' 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.

The image shows three staves of musical notation for percussion instruments. The top staff is labeled 'Timpani' and uses a five-line staff with a bass clef and a 4/4 time signature. The middle staff is labeled 'Cymbals' and uses a five-line staff with a percussion clef and a 4/4 time signature. The bottom staff is labeled 'Triangle' and uses a one-line staff with a 4/4 time signature. Each staff contains a sequence of notes representing rhythmic patterns.

## 74 ... Figured bass

'74a-FiguredBass.ly' Some figured bass containing altered figures, bracketed figures and slashed figures. The last note contains an empty <figured-bass> element, which is invalid MusicXML, to check how well applications cope with malformed files.

Note that this file does not contain any extenders!

The image shows a single staff of musical notation with a treble clef and a common time signature (C). It contains a sequence of notes representing a melodic line.

3      #1      [6] 5  
          #3      427  
          b3  
          45

## 75 ... Other instrumental notation

'75a-AccordionRegistrations.ly' All possible accordion registrations.

The image shows a single staff of musical notation with a treble clef and a common time signature (C). It contains a sequence of notes, each with a registration symbol above it. The registration symbols are circles containing dots in various patterns. Below the staff, the registration codes are listed: 0/0/1, 0/1/0, 0/1/1, 0/2/0, 0/2/1, 0/3/0, 0/3/1, 1/0/1, 1/0/0, 1/1/0, 1/1/1, 1/2/0.

The image shows a single staff of musical notation with a treble clef and a common time signature (C). It contains a sequence of notes, each with a registration symbol above it. The registration symbols are circles containing dots in various patterns. Below the staff, the registration codes are listed: 1/2/1, 1/3/0, 1/3/1, empty, empty M, inval.M, M=0, M=5.

## 90 ... Compressed MusicXML files

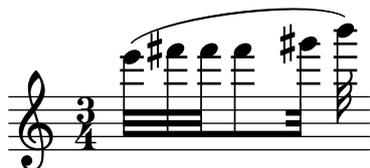
'90a-Compressed-MusicXML.ly' A compressed MusicXML file, containing a simple MusicXML score and the corresponding .pdf output for reference.

### Compressed MusicXML file



## 99 ... Compatibility with broken MusicXML

'99a-Sibelius5-IgnoreBeaming.ly' 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.ly' 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.

