

Lilypond for pyScore

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Term Project

Formats have different goals

- MIDI: Playback
 - Lacks notation markup
- MusicXML: Interchange
 - XML, verbose, flexible
- Lilypond: Typesetting
 - Easy to edit, strong visual control, many features
- Guido: A little of all of the above
 - Easier to read than MusicXML.
 - Easy to edit like Lilypond, with notation descriptors
 - Compact

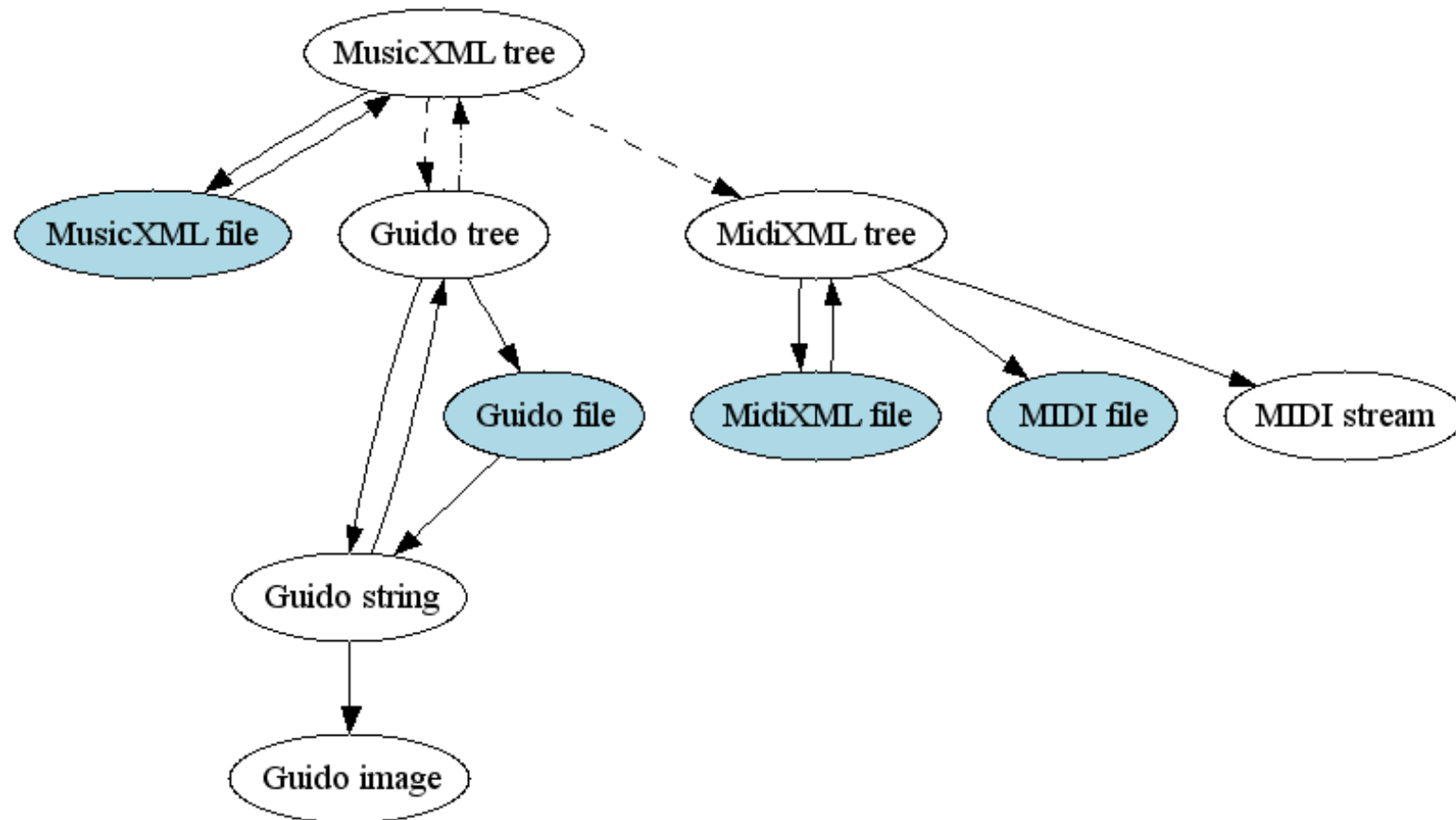
Format conversion

- Despite differences, it would be nice to convert between them.
- Much music is available as MIDI.
- Notation is often only available as PDF. Fear of:
 - Being locked into a dead format?
 - Using a format that cannot fully represent the score.
 - Using a format that is useless to notation software.
- Mutopia has its data in Lilypond format.
 - <http://www.mutopiaproject.org/>
 - Guido and MusicXML tend to have better software support.
- Guido must be rendered with NoteServer or NoteViewer.
 - It would be nice to have the option of rendering via Lilypond.

pyScore

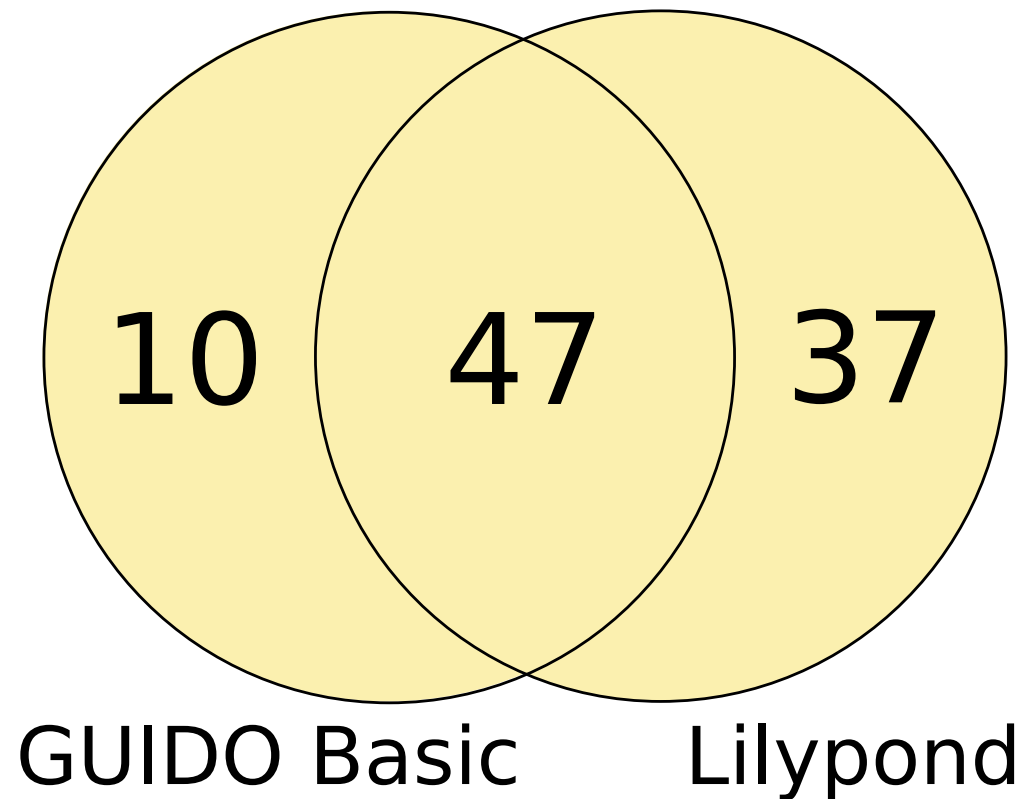
- pyScore was developed by Michael Droettboom, started in 2004.
- Python-based conversion between Guido, MusicXML, and MIDI.
- Open-source using GNU Public Licence.
- CVS hosted publically on SourceForge.
- <http://dkc.jhu.edu/~mdboom/pyScore>
- Also provides command-line interface to NoteServer.
- Nice framework for adding new converters.
 - Potential to become a “universal converter”.

pyScore



Feature differences

- Lilypond and Guido have similar capabilities, but feature sets do not coincide exactly.



- Guido Advanced specification “coming soon” – circa 2004.

So far

- **Converted:**

```
[ \title<``Tuplets''>
a/4 c/4 d/4 a# c/1 f*1/3 e*1/3 b0*1/6 a0*1/6 d1*1/3 d*1/3
d*1/3 |
a/4 c/4 d/4 a# c/1 f*1/5 e*1/5 b0*1/5 a0*1/5 d0*1/5 d1/2 d |
a/4 c/4 d/4 a# c/1 f*1/7 e*1/7 b0*1/7 a0*1/7 d0*1/14 d0*1/14
d1*2/7 ]
```

- **To:**

```
\header {
title = ``Tuplets''
}
\score { { { a'4 c'4 d'4 ais'4 c'1
\times 2/3 { f'2 e'2 b4 a4 }
\times 2/3 { d'2 d'2 d'2 }
a'4 c'4 d'4 ais'4 c'1
\times 4/5 { f'4 e'4 b4 a4 d4 }
d'2 d'2 a'4 c'4 d'4 ais'4 c'1
\times 8/7 { f'8 e'8 b8 a8 d16 d16 d'4 }
} } }
```

Tuplets

Tuplets

The image displays three staves of musical notation in treble clef with a common time signature (C). The first staff shows a triplet of eighth notes. The second staff shows a quintuplet of eighth notes. The third staff shows a septuplet of eighth notes. Each tuplet is indicated by a bracket with the number of notes above it.

- Guido: [c1*1/3 c*1/3 c*1/3]
- Lilypond: \times 2/3 { c' c' c' }

Notes

- How to handle relative notes?
- How to handle durations, relative durations?
- Grouping notes
- Barlines. Automatic or manual?
- Is motivation strictly for automatic conversion for typesetting, or should conversion "play nice" for manual editing?
 - i.e., if the latter, relative durations are easier to manage

Resources

- Lilypond: <http://lilypond.org/>
- pyScore: <http://pyscore.sf.net>
- Guido and NoteServer: <http://noteserver.org/>
- MusicXML: <http://www.recordare.com/xml.html>