

Using textmidiformedit

The textmidicgm form editor

Thomas E. Janzen

Copyright © 2024 Thomas E. Janzen.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled “GNU Free Documentation License.”

Table of Contents

1	Overview	2
1.1	What is textmidiformedit?	2
2	Downloading textmidiformedit	3
3	Invoking textmidiformedit	4
4	Musical Form Window	5
4.1	Name	5
4.2	Copyright	5
4.3	Len	6
4.4	Min/Max Note Len	6
4.5	Pulse/Sec	6
4.6	Melodic Probabilities	6
4.7	Arrangements	6
4.8	Scale Transpose and From Keyboard	7
4.9	Pitch Form	7
4.10	Rhythm Form	8
4.11	Dynamic Form	8
4.12	Texture Form	8
5	Instrumental Voices Window	9
5.1	Number of Voices	9
5.2	Voice	9
5.3	Low Pitch	9
5.4	High Pitch	12
5.5	Channel	13
5.6	Program	13
5.7	Walking	13
5.8	Pan	13
5.9	Follow/Leader	13
5.10	Interval Type/Interval	13
5.11	Follower Delay	13
5.12	Follower Inversion	14
5.13	Follower Retrograde	14
6	Form Plot Window	15
6.1	Open	15
6.2	Save	15
6.3	Redraw	15
6.4	Save Postscript	15

6.5	About	16
6.6	Quit	16
7	Keyboard Window	17
7.1	Clear	17
7.2	All	17
7.3	Complement	17
7.4	Octave Repeat	17
8	GNU Free Documentation License	18
8.1	PREAMBLE	18
8.2	APPLICABILITY AND DEFINITIONS	18
8.3	VERBATIM COPYING	20
8.4	COPYING IN QUANTITY	20
8.5	MODIFICATIONS	21
8.6	COMBINING DOCUMENTS	22
8.7	COLLECTIONS OF DOCUMENTS	23
8.8	AGGREGATION WITH INDEPENDENT WORKS	23
8.9	TRANSLATION	23
8.10	TERMINATION	24
8.11	FUTURE REVISIONS OF THIS LICENSE	24
8.12	RELICENSING	25
8.13	How to use this License for your documents	25
9	Bibliography	26
10	Concept Index	27

1 Overview

The `textmidiformedit` program can be used interactively to edit new or pre-existing musical form files used by `textmidicgm`, which generates works of music in `textmidi` language, which can then be converted by `textmidi` into standard MIDI 1.1 file formats. Using `textmidiformedit`, it is possible to edit musical forms as defined by `textmidicgm` rather than hand-edit the XML form file.

The model of musical form defined by `textmidicgm` is described in the `info` file for `textmidicgm`. This manual only describes the user interface for `textmidiformedit.py`.

1.1 What is `textmidiformedit`?

The program `textmidiformedit` can be used interactively to create new musical form files, or edit previously-existing musical form files, as used by `textmidicgm`.

2 Downloading textmidiformedit

If you have downloaded textmidiformedit.py and its support *.py files, then you can run it as described below. You can also download textmidiformedit from pypi.org.

```
python3 -m pip install --no-deps textmidiformedit
```

3 Invoking textmidiformedit

`textmidiformedit.py` has no options. To run it, go to the directory where it is found (after unpacking the archive for TextMIDITools) and invoke it:

```
./textmidiformedit.py
```

If you downloaded `textmidiformedit` from pypi.org, or installed it in an equivalent way, you can use it as a python package:

```
python3
>>> from textmidiformedit import *
>>> textmidiformedit()
```

When you quit the application, just exit from python with control-D or

```
>>> exit()
```

4 Musical Form Window

The screenshot shows the 'Musical Form' window with the following settings:

- Name:** Symphony in d minor
- Copyright:** © 1824 Ludwig van Beethov
- Len:** 600.0
- Min Note Len:** 0.0
- Max Note Len:** 2.0
- Pulse/Sec:** 8.0
- MELODY PROBABILITIES:**
 - Down: 0.25
 - Same: 0.5
 - Up: 0.75
- ARRANGEMENTS:**
 - Algorithm: Identity
 - Period: 100000.0
 - Scale: Chromatic
 - Transpose: 0
- PITCH:**
 - Mean Period: 180.0, Phase: [slider], Offset: [slider]
 - Gain: 0.5
 - Range Period: 180.0, Phase: [slider], Offset: [slider]
 - Gain: 0.5
- RHYTHM:**
 - Mean Period: 180.0, Phase: [slider], Offset: [slider]
 - Gain: 0.5
 - Range Period: 180.0, Phase: [slider], Offset: [slider]
 - Gain: 0.5
- DYNAMIC:**
 - Mean Period: 180.0, Phase: [slider], Offset: [slider]
 - Gain: 0.5
 - Range Period: 180.0, Phase: [slider], Offset: [slider]
 - Gain: 0.5
- Texture:**
 - Mean Period: 180.0, Phase: [slider], Offset: [slider]
 - Gain: 0.5

The Musical Form window allows the setting of global form qualities except for the instrumental attributes of individual voices, which is done on the Voices window. The Musical Form Window has several items.

4.1 Name

The name string can be typed in; it is meant to be the title of the musical work to be created by `textmidicgm`.

4.2 Copyright

The copyright string can be typed in. It is not copied to the MIDI file that is created from the form file by `textmidicgm`.

4.3 Len

The len text field is the duration of the musical work in seconds. Entering 600 will tell textmidicgm to generate 10 minutes of music.

4.4 Min/Max Note Len

The minimum and maximum note lengths specifies the duration range for all note events. When the rhythm curve is very low and the range curve narrow, the min note length is used; when the rhythm curve is high with a narrow range, the maximum note length is used.

4.5 Pulse/Sec

Pulse per second is used optionally to force textmidicgm to generate rhythms that line up on a pulse. Such music is likely to be easier to notate in scoring program such that human players could play it. Note, however, that textmidicgm has no model of meter, that is, the grouping of beats and accents. The original concept for this model of form (developed in 1976 for manual composition) was connected to very fluid, conversational, ametrical rhythms. On the other hand, setting a pulse can make works produced by textmidicgm sound more dance-like, for example, with a pulse of about 5 or so per second.

4.6 Melodic Probabilities

Melodic Probabilities are cumulative probabilities that apply only when a voice is in walking mode: they determine how often a voice moves up, or moves down, repeats a note, or is resting. A random variable used to select melodic movement varies in (0..<1.0). When the random variable is:

- Below the "Down" probability, the voice will move down a step in the scale; when ;
- At or above Down and below the Same probability, it will repeat the previous key;
- At or above the Up probability, it will step up the scale.
- At or above the Up probability, it will be silent.

Because these are cumulative probabilities, the following inequalities must hold: $0.0 \leq \text{Down} \leq \text{Same} \leq \text{Up} \leq 1.0$. If you don't want the voice to drift off down or up, then the probabilities for up and down should be equal, but by differences: $(\text{Up} - \text{Same}) == (\text{Same} - \text{Down})$. These probabilities apply only if a voice is in walking mode.

4.7 Arrangements

Arrangements, if set, can change the priority of voices under the texture curve. Each arrangement algorithm permutes the voice priorities in a different way. Some of the algorithms do not produce all possible permutations, but others do. These algorithms are described in the documentation for textmidicgm. The settable items for Arrangements are:

- Algorithm
 - Undefined
 - Identity
 - LexicographicForward
 - LexicographicBackward
 - RotateRight
 - RotateLeft
 - Reverse
 - SwapPairs
 - Skip
 - Shuffle
 - Heaps
- Period The period of time before going to the next permutation.

4.8 Scale Transpose and From Keyboard

Scales can be entered the following ways:

- Loaded from a form file
- Set from the scale menu selections
- Loaded from the keyboard window, by using the "From Keyboard" push button.

Once a scale has been loaded, it may be transposed by using the transpose spin button. Note that if the scale loaded from a file was already transposed, then that version of the scale will be the transposition of zero (0) in the Musical Form window for that scale.

Pushing the From Keyboard button will copy the scale that is set in the keyboard window to be the scale in the musical form.

4.9 Pitch Form

The Form curves are the core concept of the textmidicgm model for musical form. The curves are always sinusoidal (wave-like), but they are biased to sit above zero and range from 0 to 1. Pitch, Rhythm, and Dynamic curves have two sinusoids: mean and range. The controls for each sinusoid include a period (in seconds) and a phase slider in radians. There are two * pi radians (about 6.28) in a full circle. The slider ranges from -pi to +pi. For example, to get 90 degrees, set the slider about 3/4 of the way across between 0 and +pi. The mean sinusoid is roughly the average or center value of the parameter (in which parameter refers to pitch, rhythm, and dynamic) and the sinusoid for range gives the range from low value to high value. Only a range sinusoid is used for texture. The seven sinusoids are all independent in phase and period. After adjusting form curve values, you should select the Redraw item on the Form Plot window's menu to see how you have changed the form. The result of these curves is to cause the music generated by textmidicgm to change in character over time. Ordinarily the periods used are around 120 to 360 seconds (2 to 6 minutes). However, to make a parameter's mean or range stay static, merely make the period very long, such as 1000000 seconds. Unless a voice is in walking mode, the Pitch mean curve generally causes the pitches played to be higher when the curve is higher and

lower when the curve is low; the Pitch range curve causes a wider range of notes in the scale when the curve is higher and fewer (even just repeating a pitch). In walking mode, a voice ignores the pitch curves and follows the melodic probabilities on how to walk up and down.

4.10 Rhythm Form

A high rhythm mean curve generally tells textmidicgm to make longer duration (slower) note events. When the rhythm mean curve is at a low point in the wave, it tends to make shorter durations (faster notes). A high rhythm range curve tends to make a wider range of durations and sound more syncopated, even with a pulse-per-second set; a low rhythm range curve tends to make more monotonous and repetitive durations.

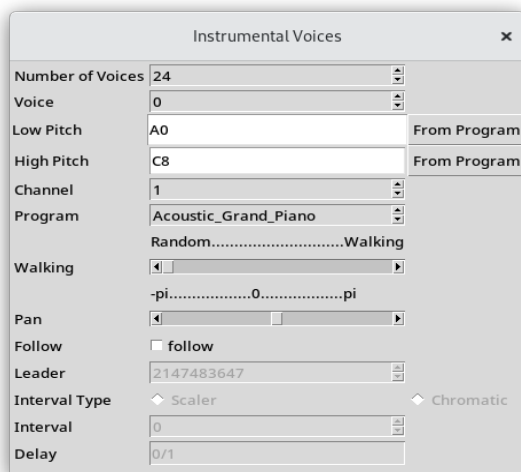
4.11 Dynamic Form

A high dynamic mean curve generally tells textmidicgm to make louder note events. When the dynamic mean curve is at a low point in the wave, it tends to make quieter notes. A high dynamic range curve tends to make a wider range of loudnesses and sound more natural; a low dynamic range curve tends to make more evenly loud notes.

4.12 Texture Form

A high texture range curve makes more voices play (a larger complement); a low texture range curve makes fewer voices play. As the texture curve rises, the voices are added in voice number order. To suggest a soloist, the solo voice should probably be in voice 0 position in the voice window.

5 Instrumental Voices Window



The Instrumental Voices Window has several items.

5.1 Number of Voices

The number of voices is the total number of voices that can play when the form's texture curve is high. This model of musical form is basically counterpunctal and made of solo voices. There is no real limit for number of voices, but the form editor only offers 23 voices.

5.2 Voice

Voice is the index (in 0..Number of Voices - 1) of the voice to be currently edited in the voice window.

5.3 Low Pitch

The low pitch is the low pitch for the voice. If the Form Pitch curve goes below this low pitch, then the low pitch will be played. This can be monotonous; textmidicgm has an option on the command that trims the scale to the range for all the instruments together to help with this, but this is not a perfect fix. The "From Program" push button will set the Low Pitch suitable for the patch. The instrument ranges were taken from textbooks or from en.wikipedia.org.

Patch	Low Pitch	High Pitch
Acoustic_Grand_Piano	A0	C8
Bright_Acoustic_Piano	A0	C8
Electric_Grand_Piano	E1	E7
Honky-tonk_Piano	A0	C8
Electric_Piano_1(Fender_Rhodes)	A0	C8
Electric_Piano_2(DX-7_EP)	A0	C8
Harpsichord	F1	F6

Clavi	F1	F6
Chromatic Percussion		
Celesta	C4	C8
Glockenspiel	F5	C8
Music_Box	F6	C8
Vibraphone	F3	F6
Marimba	C2	C7
Xylophone	C3	C7
Tubular	15	C4 G5
Dulcimer	C3	C5
Organ		
Drawbar_Organ	A0	C8
Percussive_Organ	A0	C8
Rock_Organ	A0	C8
Church_Organ	A0	C8
Reed_Organ	C2	C6
Accordion	E1	D6
Harmonica	C3	G5
Tango	24	E1 D6
Guitar		
Acoustic_Guitar_(nylon)	E3	D6
Acoustic_Guitar_(steel)	E3	D6
Electric_Guitar_(jazz)	E3	D6
Electric_Guitar_(clean)	E3	D6
Electric_Guitar_(muted)	E3	D6
Overdriven_Guitar	E3	D6
Distortion_Guitar	E3	D6
Guitar_Harmonics	E4	D7
Bass		
Acoustic_Bass	E1	E4
Electric_Bass_(finger)	E1	E4
Electric_Bass_(pick)	E1	E4
Fretless_Bass	E1	E4
Slap_Bass_1	E1	E4
Slap_Bass_2	E1	E4
Synth_Bass_1	E1	E4
Synth_Bass_2	E1	E4
Strings		
Violin	G3	C7
Viola	C3	D7
Cello	C2	A5
Contrabass	E1	G4
Tremolo_Strings	E1	C7
Pizzicato_Strings	E1	C7
Orchestral_Harp	B0	G#7
Timpani	C2	D4
Ensemble		

String_Ensemble_1	C0	C8
String_Ensemble_2	C0	C8
Synth_Strings_1	C0	C8
Synth_Strings_2	C0	C8
Choir_Aahs	D2	C6
Voice_Oohs	D2	C6
Synth_Voice	D2	C6
Orchestra_Hit	C0	C8
Brass		
Trumpet	F#3	C6
Trombone	C2	C5
Tuba	Eb2	A4
Muted_Trumpet	F#3	C6
French_Horn	C2	C6
Brass_Section	C2	C6
Synth_Brass_1	C2	C6
Synth_Brass_2	C2	C6
Reed		
Soprano_Sax	Ab3	Eb6
Alto_Sax	Db3	Ab5
Tenor_Sax	Ab2	Eb5
Baritone_Sax	Db2	Ab4
Oboe	Bb3	G6
English_Horn	E3	A5
Bassoon	Bb1	E5
Clarinet	D3	Bb6
Pipe		
Piccolo	D5	C8
Flute	C4	C7
Recorder	C-1	G9
Pan_Flute	C-1	G9
Blown_bottle	C-1	G9
Shakuhachi	C-1	G9
Whistle	C-1	G9
Ocarina	C-1	G9
Synth_Lead		
Lead_1_(square)	C0	C8
Lead_2_(sawtooth)	C0	C8
Lead_3_(calliope)	C0	C8
Lead_4_(chiff)	C0	C8
Lead_5_(charang)	C0	C8
Lead_6_(voice)	C0	C8
Lead_7_(fifths)	C0	C8
Lead_8_(bass_+_lead)	C0	C8
Synth_Pad		
Pad_1_(new_age)	C0	C8
Pad_2_(warm)	C0	C8

Pad_3_(polysynth)	C0	C8
Pad_4_(choir)	C2	G5
Pad_5_(bowed)	C0	C8
Pad_6_(metallic)	C0	C8
Pad_7_(halo)	C0	C8
Pad_8_(sweep)	C0	C8
Synth Effects		
FX_1_(rain)	C0	C8
FX_2_(soundtrack)	C0	C8
FX_3_(crystal)	C0	C8
FX_4_(atmosphere)	C0	C8
FX_5_(brightness)	C0	C8
FX_6_(goblins)	C0	C8
FX_7_(echoes)	C0	C8
FX_8_(sci-fi)	C0	C8
Ethnic		
Sitar	C2	C6
Banjo	D3	C6
Shamisen	E3	C6
Koto	C2	C6
Kalimba	G3	G6
Bag	110	C3 C6
Fiddle	G3	C7
Shanai	Bb3	G6
Percussive		
Tinkle	C-1	G9
Agogô	C-1	G9
Steel_Drums	C-1	G9
Woodblock	C-1	G9
Taiko_Drum	C-1	G9
Melodic_Tom	C-1	G9
Synth_Drum	C-1	G9
Reverse_Cymbal	C-1	G9
Sound Effects		
Guitar_Fret_Noise	C-1	G9
Breath_Noise	C-1	G9
Seashore	C-1	G9
Bird_Tweet	C-1	G9
Telephone_Ring	C-1	G9
Helicopter	C-1	G9
Applause	C-1	G9
Gunshot	C-1	G9

5.4 High Pitch

The high pitch is the high pitch for the voice. If the Form Pitch curve goes above this high pitch, then the high pitch will be played. This can be monotonous; textmidicgm has an

option on the command that trims the scale to the range for all the instruments together to help with this, but this is not a perfect fix. The “From Program” push button will set the High Pitch suitable for the patch.

5.5 Channel

The channel is the MIDI Channel (1..16) for the voice.

5.6 Program

The Program is the MIDI program name from General MIDI used for the current voice.

5.7 Walking

The walking value sets the probability of a voice being in walking mode, note to note. In walking mode, a voice ignores the Form Pitch curve and follows the Melodic Probabilities. The value ranges from 0.0 (random melody) to 1.0 (walking up and down the scale). A value between 0.0 and 1.0 represents the probability of the voice being in walking mode, note to note. This makes it possible for a single voice to randomly be in either walking or random (jumpy) mode.

5.8 Pan

Pan is the MIDI stereo pan for the voice.

5.9 Follow/Leader

The Follower/Leader feature permits you to tell a voice to ignore the Form curves altogether, and instead to follow another voice. Set the follow button to make a voice follow another. Set the Leader to the number of the voice to follow. Select the interval type of following: scaler or chromatic. Scaler intervals will count steps up in the scale (down for a negative interval) being used to select the interval of following; chromatic intervals will count by 1's up (down for a negative interval) in a chromatic scale to find the follower's pitch.

5.10 Interval Type/Interval

The follower's Interval Type defines whether the follower stays in the scale for the form, or if it follows on a chromatic interval. If the interval type is scaler, then the interval is the number of steps up or down the scale that the follower appears. If the interval type is chromatic, then the follower will be "Interval" number of chromatic steps away from the voice it is following.

5.11 Follower Delay

The follower's Delay creates a canon effect in that it delays the start of the following voice for the duration given as an ordinary rational number. It can be set to 1/4 for a quarter note, or 13/17, or 4/1 or 4 for four whole notes delay and so on. It interprets 4 as four whole notes and not as a quarter note the way `textmidi` does in LAZY mode.

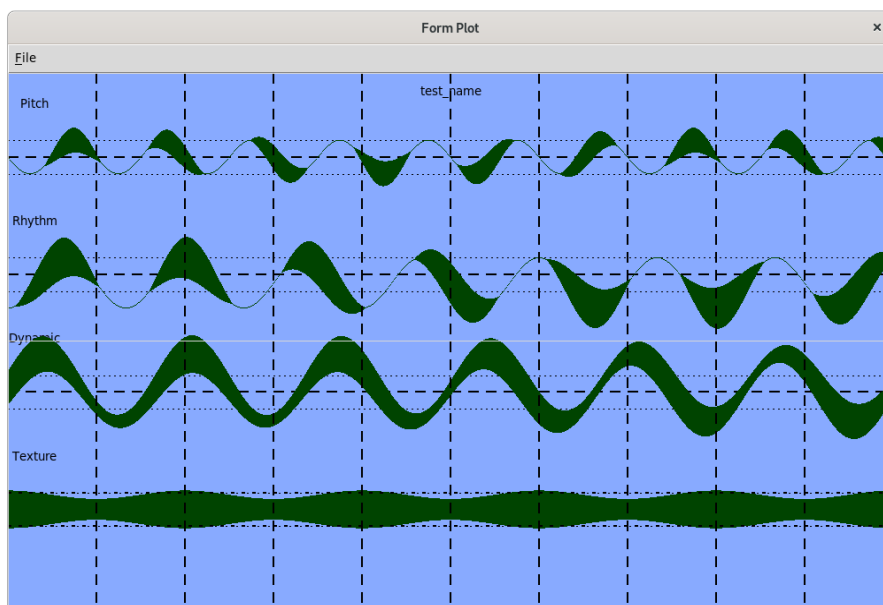
5.12 Follower Inversion

The follower can be an inversion of the leader voice, for the entire duration of the piece. Transposition interval still applies. The selection of either chromatic or scalar following also applies.

5.13 Follower Retrograde

The follower will be a retrograde (that is, a backwards copy) of the leader voice, for the entire duration of the piece. Transposition interval still applies. The selection of either chromatic or scalar following also applies.

6 Form Plot Window



The Form Plot window has a menu. The Form Plot Window shows the sinusoidal curves that act to change the mean and range of pitch, rhythm (duration), dynamic (loudness) and the complement (the number of instruments playing). A vertical line is drawn at each minute of time from the beginning. The Form Plot Window menu has several items.

6.1 Open

The Open menu allows you to load a `boost::serialization` (cf. boost.org) XML archive form file. All of the values of the form file will be distributed throughout the user interface and the plot redrawn.

6.2 Save

The Save menu allows you to save an XML form file. All of the values of the form in the user interface of `textmidiformedit.py` will be written out to the file. The XML form file is readable by `textmidicgm` using the `-xmlform` option.

6.3 Redraw

The form plot is redrawn; this is called for if the form curves are changed in the Musical Form window.

6.4 Save Postscript

The Save Postscript menu item will save a Postscript image of the Form Plot window.

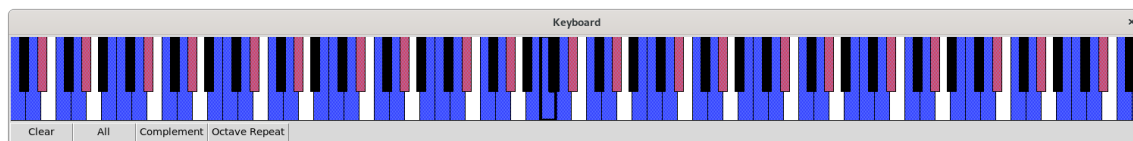
6.5 About

The About item puts up a window with information about the program.

6.6 Quit

The Quit menu item will exit the program. The window close decoration will also do this. Any work done but unsaved is lost; you are not prompted to save work.

7 Keyboard Window



The Keyboard Window has a keyboard in which individual keys can be clicked, and also several buttons. The keyboard presents 128 keys, all of the keys supported by MIDI (C-1 to G9). Middle-C is outlined in a thicker line than other keys. Any key can be clicked to toggle whether it is to be included in a scale. When a key is included in a scale it is drawn with a stipple in blue (if a white key) or red (if a black key). Keys that are not in the scale are white if they are white keys and black if they are black keys. The keyboard will reflect selection of scale made in the Musical Form window, and the scale in the keyboard window can be copied into the form by clicking on the "From Keyboard" button in the Musical Form window. The keyboard does not affect the scale in the Form until you click "From Keyboard". Clicking on a key toggles its inclusion in the scale. If you click on a selected key, it is removed from the scale; if the key is not in the scale, then clicking on it adds it to the scale. Any arbitrary combination of the 128 keys can be clicked to create a scale. To create a scale that repeats each octave, just click the unique keys for one octave, then hit the "Octave Repeat" push button.

7.1 Clear

Clear the scale.

7.2 All

Set all of the keys, that is, the full chromatic MIDI scale.

7.3 Complement

Set the scale to select notes not in the scale and remove notes that were in the scale. For example, select a Diatonic scale in the Musical Form window; this will appear in the keyboard as C Major. Then push the Complement push button on the Keyboard window to select the missing notes instead, and the result will be the black keys only, which is a form of pentatonic scale.

7.4 Octave Repeat

Any notes set in the keyboard are repeated per octave throughout the full scale.

8 GNU Free Documentation License

Version 1.3, 3 November 2008 Copyright © 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc. <https://fsf.org/> Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

8.1 PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document free in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or non-commercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others. This License is a kind of “copyleft”, which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software. We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

8.2 APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The “Document”, below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as “you”. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law. A “Modified Version” of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language. A “Secondary Section” is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document’s overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The “Invariant Sections” are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none. The “Cover Texts” are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words. A “Transparent” copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not “Transparent” is called “Opaque”. Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only. The “Title Page” means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, “Title Page” means the text near the most prominent appearance of the work’s title, preceding the beginning of the body of the text. The “publisher” means any person or entity that distributes copies of the Document to the public. A section “Entitled XYZ” means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as “Acknowledgements”, “Dedications”, “Endorsements”, or “History”.) To “Preserve the Title” of such a section when you modify the Document means that it remains a section “Entitled XYZ” according to this definition. The Document may include Warranty Disclaimers next to the notice which states that

this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

8.3 VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3. You may also lend copies, under the same conditions stated above, and you may publicly display copies.

8.4 COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects. If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages. If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public. It is requested, but not

required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

8.5 MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

- A. Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.
- B. List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.
- C. State on the Title page the name of the publisher of the Modified Version, as the publisher.
- D. Preserve all the copyright notices of the Document.
- E. Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.
- F. Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.
- G. Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.
- H. Include an unaltered copy of this License.
- I. Preserve the section Entitled "History", Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled "History" in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.
- J. Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the "History" section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.
- K. For any section Entitled "Acknowledgements" or "Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or

dedications given therein. L. Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles. M. Delete any section Entitled “Endorsements”. Such a section may not be included in the Modified Version. N. Do not retitle any existing section to be Entitled “Endorsements” or to conflict in title with any Invariant Section. O. Preserve any Warranty Disclaimers. If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version’s license notice. These titles must be distinct from any other section titles. You may add a section Entitled “Endorsements”, provided it contains nothing but endorsements of your Modified Version by various parties—for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard. You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one. The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

8.6 COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers. The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work. In the combination, you must combine any sections Entitled “History” in the various original documents, forming one section Entitled “History”; likewise combine

any sections Entitled “Acknowledgements”, and any sections Entitled “Dedications”. You must delete all sections Entitled “Endorsements.”

8.7 COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects. You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

8.8 AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an “aggregate” if the copyright resulting from the compilation is not used to limit the legal rights of the compilation’s users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document. If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document’s Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

8.9 TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail. If a section in the Document is

Entitled “Acknowledgements”, “Dedications”, or “History”, the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

8.10 TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License. However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation. Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice. Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

8.11 FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See <https://www.gnu.org/copyleft/>. Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License “or any later version” applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy’s public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

8.12 RELICENSING

“Massive Multiauthor Collaboration Site” (or “MMC Site”) means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A “Massive Multiauthor Collaboration” (or “MMC”) contained in the site means any set of copyrightable works thus published on the MMC site. “CC-BY-SA” means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization. “Incorporate” means to publish or republish a Document, in whole or in part, as part of another Document. An MMC is “eligible for relicensing” if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008. The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

8.13 How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page: Copyright (C) year your name. Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled “GNU Free Documentation License”. If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the “with. . . Texts.” line with this: with the Invariant Sections being list their titles, with the Front-Cover Texts being list, and with the Back-Cover Texts being list. If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation. If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

9 Bibliography

10 Concept Index

A

About	16
All	17
Arrangements	6

B

Bibliography	26
--------------------	----

C

Channel	13
Clear	17
Complement	17
Copyright	5

D

Downloading textmidiformedit	3
Dynamic Form	8

F

Follow/Leader	13
Follower Delay	13
Follower Inversion	14
Follower Retrograde	14
Form Plot Window	15

H

High Pitch	12
------------------	----

I

Instrumental Voices Window	9
Interval Type/Interval	13
Invoking textmidiformedit	4

K

Keyboard Window	17
-----------------------	----

L

Len	6
Low Pitch	9

M

Melodic Probabilities	6
Min/Max Note Len	6
Musical Form Window	5

N

Name	5
Number of Voices	9

O

Octave Repeat	17
Open	15
overview	2

P

Pan	13
Pitch Form	7
Program	13
Pulse/Sec	6

Q

Quit	16
------------	----

R

Redraw	15
Rhythm Form	8

S

Save	15
Save Postscript	15
Scale Transpose and From Keyboard	7

T

textmidiformedit	2
Texture Form	8

V

Voice	9
-------------	---

W

Walking	13
---------------	----