Tin Whistle VST

Ver. 1.0

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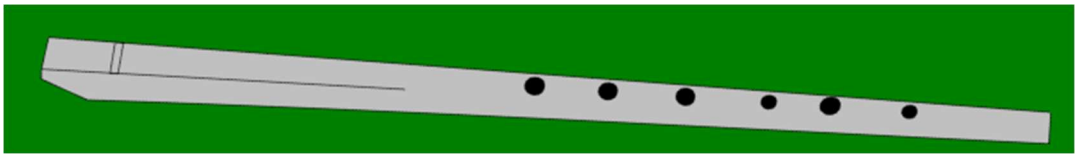
1. Overview

This Tin Whistle VST is a virtual instrument with many features which allow you to simulate the playing of a Tin Whistle. With MIDI capabilities, the Tin Whistle VST allows you to perform from a loaded MIDI file, input from the screen or computer keyboard, as well as from external MIDI keyboards plugged into the computer. The Tin Whistle VST also has recording capabilities allowing you to capture an audio version of your performance. Audio files are sampled directly from a Tony Dixon DX005 Tin Whistle and, when combined with the realistic keyboard mapping, gives an authentic experience when it comes to playing the Tin Whistle.

2. Instrument View

2.1. Tin Whistle

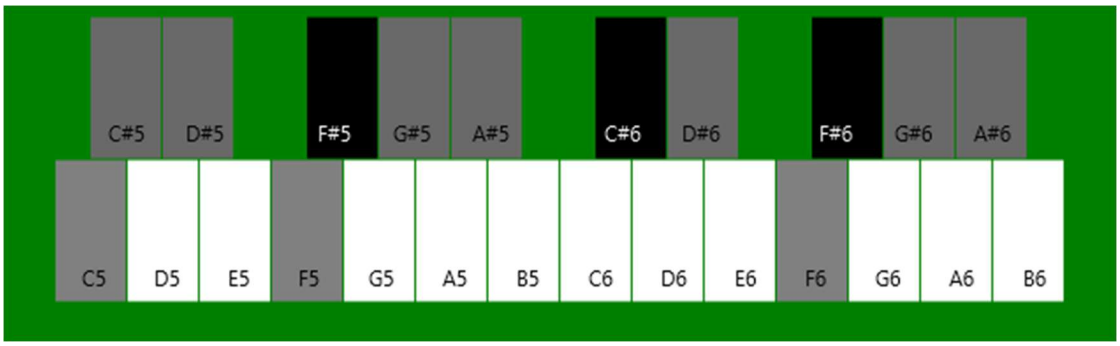
The Tin Whistle, while not an interactable part of the GUI, has some features which add to the utility of the VST. Each of the six tone holes of the Tin Whistle has a corresponding red circle which is turned on and off to represent a tone whole being covered by a finger. The fingering display can be used to learn the actual fingerings of a Tin Whistle, turning the VST into a pseudo teaching device.



2.2. Piano Keyboard

The Piano Keyboard displayed on the screen has two functions: visual display (much the same as the Tin Whistle), and input device. As a visual display, the key on the Piano Keyboard turns red when the corresponding note is played.

This visual element, when combined with the fingering display on the Tin Whistle helps you to understand which note is being played.

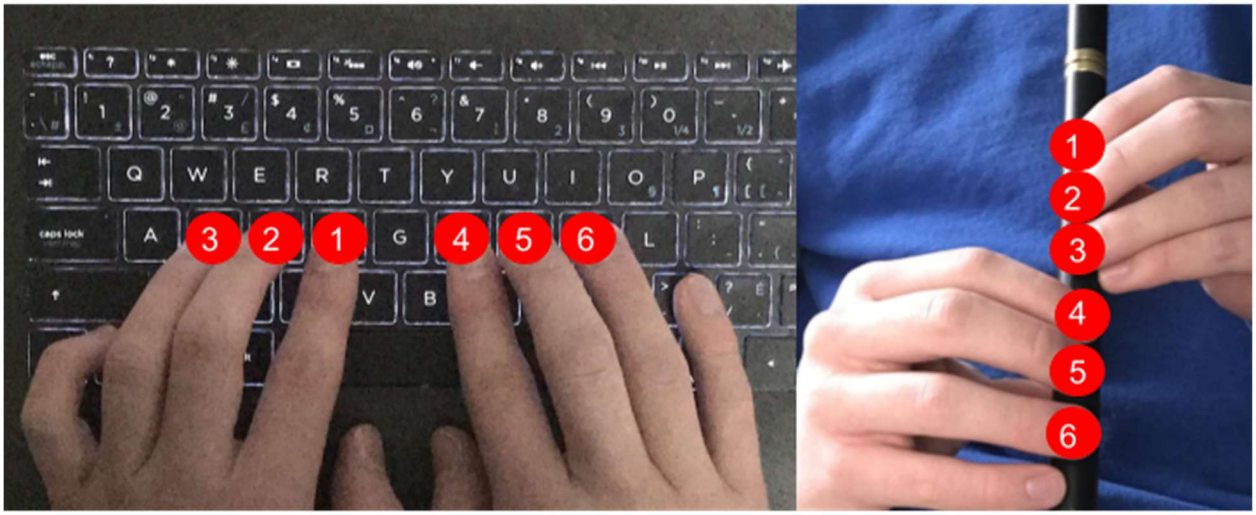


The input function of the keyboard display allows you to click on any of the white or black keys (greyed-out keys are not playable by a Tin Whistle as it is a Diatonic instrument) to play the corresponding note. The fingering for said note will also appear on the Tin Whistle.

2.3. Computer Keyboard

The Computer Keyboard allows for the most efficient and realistic use of the VST. The Computer Keyboard is mapped as such:

While it may seem like an odd layout, this mapping is very similar to the actual fingering progression of a Tin Whistle, as such:



To play a note, simply press the corresponding key. For all notes except for C and C#, pressing and holding the Upper Register key (spacebar) while pressing a note will cause the instrument to play the note an octave higher. When the Upper Register key is released, the instrument will return to playing in the lower register.

3. MIDI Playback

3.1. Overview

In order to use custom instruments with custom samples in Java, the Tin Whistle VST implements its own version of the MIDI sequencer and playback. As such, there are bugs in the system and it does not play at the same level as the MIDI sequencer and playback within the Java library. Alternate features which might affect playback and functionality are discussed in 3.2.1 A Few Things to Keep In Mind below.

3.2. Play MIDI

The Play MIDI button, when pressed, will play the loaded MIDI file as displayed to the right of the button. If no file is loaded, no MIDI file will play.

3.2.1. A Few Things to Keep In Mind

3.2.1.1 Tempo

The MIDI sequencer and playback function as implemented in this VST does not recognize or alter tempos based on the MIDI file. It will only play at one speed regardless of any tempo markings in the file.

3.2.1.2 Sample Length

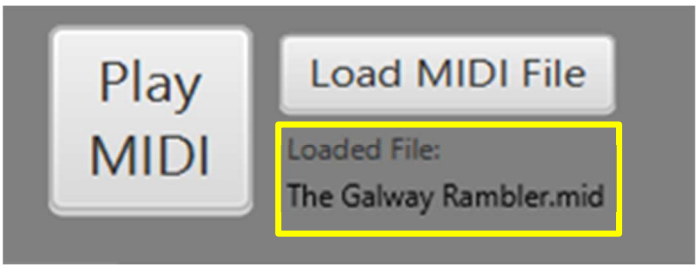
The length of each sample is rather short. As a result, long notes (a quarter note or longer) will have an unintended gap at the end as the sample file completes playback before the next note is triggered.

3.2.1.3 Exclusivity of Function

The MIDI sequencer and playback is implemented in such a way that it is not possible to stop the MIDI playback, or perform any other functions in the VST, once the MIDI playback has started. You must wait until the playback is completed until you can perform any other function. Once you start a MIDI playback, it must be completed.

3.3. Load MIDI File

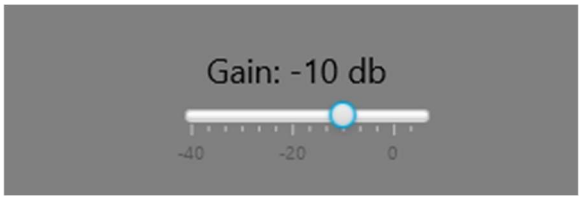
In order to play a MIDI file, you must first load a file to play. The file that is currently loaded is listed here:



Clicking the “Load File Button” brings up a dialogue allowing you to select a MIDI file loaded on your computer. If you navigate to the MIDI Files folder within your TinWhistleVST folder, there are a series of premade MIDI files that are playable by the Tin Whistle VST.

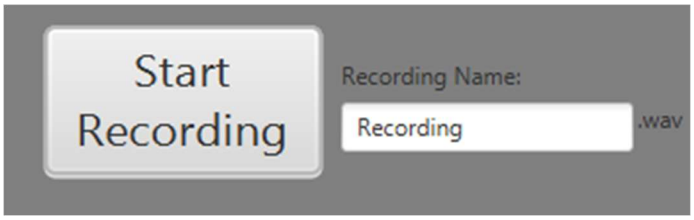
4. Gain Control

At the bottom center of the screen, you will find the Gain Control. Initially set at -10 decibels, you can use the slider to adjust the gain of the VST from -40 db to 6 db.



5. Recording

At the bottom right of the screen, you will see the Recording section of the VST. There are two parts to the Recording section: the Recording Name and Start/End Recording button.



5.1. Recording Name

In the text box, enter the name that the recording file will be saved as. When the file is saved, it can be found by navigating to the Recordings folder in the TinWhistleVST folder. If the file name you entered matches any file already existing in the Recordings folder, an alert dialogue box will appear asking you if you would like to overwrite the file already in the Recordings folder when you press the Start Recording button.

5.2. Start/End Recording

When the Start Recording button is hit, the VST will begin to record through your computer's microphone. If your computer does not have a microphone, the recording function will not work. The recording function cannot record MIDI data though can record the audio played by the VST when you play a MIDI file. When you wish to stop the recording, press the Start Recording

button again (which will now say End Recording). The recording will be saved as a .WAV file in the Recordings folder of the VST.

6. MIDI Interface

The Tin Whistle VST has the ability to receive and play input from a MIDI keyboard. In order to play the VST through a MIDI keyboard, simply plug the keyboard into the computer and run the VST. The program should automatically detect the MIDI keyboard. In the event that the VST does not recognize your keyboard, or your keyboard stops sending inputs, unplug the keyboard and close the program, then plug the keyboard back in and restart the program.

6.1. Limitations

6.1.1. Gain Control

The Gain Control (as discussed in 4), does not affect the input or output of a MIDI keyboard plugged into the Tin Whistle VST.

6.1.2. Compass

The range of a Tin Whistle is rather limited. If the VST does not produce sounds when you have plugged in a MIDI keyboard, your problem may be that you are playing a note that the Tin Whistle cannot play. To fix this, make sure you are playing a note that is playable by the Tin Whistle (which can be found in the Piano Keyboard (2.2) display in the program). If you are playing a note that is playable by the Tin Whistle, check to make sure that your MIDI keyboard is playing in the right register for the Tin Whistle.

7. Changing Whistles

In the middle of the screen, you will find four buttons which allow you to switch the key of the whistle:

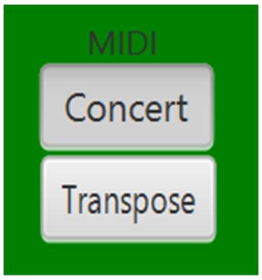
The whistle is automatically set to a D Tin Whistle. Clicking one of the other buttons will change the whistle to either a G Tin Whistle, F Tin Whistle, or C Tin Whistle. The Piano Keyboard will be rearranged to reflect the new key of the whistle and the sounds produced by the whistle will now reflect the new key.

7.1. MIDI Files and Transposition

MIDI files played with a different whistle key selected will simply transpose to selected whistle. This also means that, when writing or adding MIDI files to be played by the Tin Whistle VST, always write and load files for a D Tin Whistle, regardless of what key of whistle you intend to play it with.

8. MIDI Keyboard Transpose

To the right of the screen, you will find the Midi Transpose section which allows you to change the transposition of a MIDI keyboard plugged into the Tin Whistle VST.



8.1. Concert vs Transpose.

Set to Concert, the Tin Whistle VST will play the same note played on a MIDI keyboard plugged into the Tin Whistle VST. When set to Transpose, the Tin Whistle VST will play the same note as the degree of the D Tin Whistle scale as was played on the keyboard. This feature is demonstrated in this table:

MIDI Keyboard Note	D5		A5	
Whistle Key	Concert	Transpose	Concert	Transpose
D	D5	D5	A5	A5
G	N/A	G5	A5	E6
F	N/A	F5	A5	D6
C	D5	C5	A5	G5

To further clarify the table, because A5 is the **5th** degree of the scale played by the D Tin Whistle, playing A5 with Transpose selected on a G Tin Whistle will produce an E6 because E6 is the **5th** degree of the scale played by the G Tin Whistle.

8.2. Effects on MIDI Files, Computer Keyboard, and Piano Keyboard

Changing the MIDI Transpose to either Concert or Transpose will have no effect on the sounds produced when playing a MIDI file, when pressing keys on a computer keyboard, or when clicking on the piano keyboard.