1. Effects

Owner: Mangesh Sakordekar

The effects component contains 4 effects. The effects and applied just before the frames pass through the envelope function.

1. Reverberation

This effect uses a circular queue to add delayed sound to the output. The metrics of this effect can be controlled through the dialog box which can be accessed by selecting the Reverb option under the effects menu. This dialog box allows control over delay, number of taps, dry-wet sound percentage and which instruments the effect can be applied to.

1. Ring Modulation

This effect creates a sine wave of user provided frequency and amplitude and overlays it on the output sound.

1. Chorus

This effect selects 4 frames of which are in a different phase than the current frame using a delay queue. It sets the frame to the sum of four frames giving the output a chorus effect.

1. Noise Gating

This effect follows a attack – hold – release pattern to eliminate part of the wave which are below a certain threshold.

These Effects inherit base code from class Effect. This is an abstract class. In SongScore.cs the effects are added the instruments.

Bugs and issues:

Applying Reverb and Chorus adds clicks to the sound wave.

Grading

\_\_X\_\_ 10 - Component passes audio

\_\_X\_\_ 30 - 1 Effect

\_\_X\_\_ 60 - 3 Effects

\_\_X\_\_ 80 - Controllable effects send

\_\_X\_\_ 100 - 4 Effects

1. Subtractive Synthesis

Owner : Mangesh Sakordekar (Grad Part)

Subtractive synthesizer generates waves using a wavetable. I implemented 3 types of wave generators – sawtooth wave, square wave, triangle wave. The base class is Subtractive.cs, all the three classes inherit from this class. This class in-turn inherits from the Instrument class. The subtractive class has all the functions defined whereas the other 3 classes only help in deciding which wavetable to load. The wave tables which are being used are sound files with a frequency of 27.5 (A0). To get generate waves of varying frequencies, the increment of the read pointer is done by adding (current frequency / lowest frequency). The generation of the envelope is done using the envelope class.

Bugs and Issues:

None

Grading:

\_\_X\_\_ 10 - Waveform playback from tables

\_\_X\_\_ 30 - Varying pitch playback from tables

\_\_X\_\_ 50 - Envelope generation