**Etude 1: Risset Bell**

For this study I modified the Risset bell by contributing some minor edits to the timbre, and mostly modulating the envelope, duration, pitch and panning of notes throughout the study. I chose to have 3 different envelopes to cycle through and tried to decide on which envelope to use based of the pitch of the note (long low notes tend to have slower envelopes). This is similar to the slow attack low bell hits found 40 seconds into mutations and in many other places. There are also more percussive bell like envelopes in my study that are tuned to play mostly A and E notes (similar to 1:44 in mutations). I added randomness to many of the note frequencies to add to the beating and dissonance of the overall a sound. I attempted to alternate the panning to create a more spacious feel. If I had more time, I would apply envelopes to the panning as well. Finally I made the duration of most notes long to give some reverberation feel to the study.

**Etude 2: Endless Glissando**

In this study I played around with different types of pitch envelopes in order to create an endless glissando. I found just playing one to be boring, so I ran my code many times while capturing the code to achieve my final study. I made almost all the variables that form the glissando random, so each time I ran it, the sound was different. Some of the parameters being altered were: time between tones, speed of tones, start and end frequency, and duration. This is similar to Risset’s endless glissando which occurs a few times throughout Mutations such as 3:20 and 6:00. I also incorporated if statements to create a descending glissando approximately 1/10 times. There are about 20 glissandos in the final study, all overlapped with different durations.

**Etude 3 Ring Modulation**

This study I didn’t have time to go in depth into. It is using ring modulation to produce tremolo effects and chord structures. I was trying to recognize a pattern of shifting the car frequency that was somewhat harmonic. The result is a sequence of RM chords based off a 440 A. Though Risset doesn’t really use RM in this fashion, he does use RM to add the variety of partials in his tones. With more time, I would explore using envelopes to control RM, similar to how I controlled the bell tones in Etude 1.

**Note:**

This assignment was very frustration and inconvenient for me. I stayed up passed 4:00AM Tues and Wed, and still am unhappy with my results. This not only impacted my performance on the midterm, but affected my schedule for my other classes and job. It does not seem fair to present the most useful information two days before the midterm. I had no clue how to get started until Tuesday which is the start of my frustrations. I don’t know if you can notice, but I rendered my files by plugging the output of my pc into Reaper on another pc to record the output. The code given for rendering a score didn’t work with my code (only recorded 30 seconds of it with lots of crackle) and I didn’t have time to try to figure it out.

Something about the class dynamic needs to be adjusted, because I am doing everything I should be doing (reading, hw) and still fell very confused. Maybe instead of watching you guys code on the big screen, you can give us class activities to collaborate on. I struggle focusing for 3hrs just staring at code on the screen anyway. I really am interested in this material, but what I want to do in my head can’t even come close to translating into code. Anyways, sorry for the rant. I am tired and rushing through trying to finish this on time. Hopefully my grade doesn’t plummet from this and the final will go smoother.