Heather Chester
40215280
CART 253
Professor Pippin Barr
11/07/2023

Project 2 Proposal and Prototype

Vision for Project 2

For a while now, I have been wanting to learn how to mix music and sounds, however, the initial financial cost always seemed like too much of an investment for someone who has no experience. Thus, I decided that project 2 would be an opportunity for me to create my own soundboard that would not only allow me to understand the various functionalities that a soundboard can offer but also explore these functions through creative programming.

Currently, my prototype only features a seven-note range in the triangle sound waveform and plays continuously unless turned off by the user or triggered off by the pressing of another button. However, moving forward, I envision having multiple notes and sounds playing at the same time, options for various types of sound waves, a variety of bass, drums, etc. loops, and sliding functions that can control the output's frequency, amplitude, or possibly something else, all affecting the visuals for the sound visualizer.

As far as visuals go, the prototype's sound visualizer operates based on the amplitude that coordinates with user-controlled buttons that trigger sounds within the program. To further this, I hope to transition the currently rigid, linear, 2D sound visualization into possibly a more fluid 3D effect.

In terms of the aesthetics of the program, I'm thinking of creating something that would appear more sleek and stylized. However, as the typical look of a soundboard comprises of buttons, sliding buttons, knobs, as well as other various features, which I have and will continue to emulate with user-operated objects, I will most likely approach this stylization with various shapes that would appear unified in either its angularity or curvature.

Potential Challenges

Working with a vast variety of sounds with different functions and manipulation is definitely the most intimidating part of the project as it is the bulk of the work and poses its own challenges in and of itself. Timing-wise, I will have to work consistently in order to be able to incorporate all the sounds that I hope for, however, on the technical side, I will most likely create separate classes for specific sounds and/or buttons. Building the buttons for the prototype posed its own challenges. Creating an on-and-off function and incorporating the sound based on whether it was on or off required much tweaking with booleans in the button class and the adding and subtracting of many functions. I believe furthering this will pose its own challenges however, I anticipate booleans being a significant problem solver for the rest of the button and knob classes that I plan on creating. Lastly, I am anticipating challenges when incorporating all the various sounds into the sound visualizations however at this stage, I can only imagine extensive debugging to be the answer.

Visual Sketch