EE/CPRE/SE 491 BI-WEEKLY REPORT 3
February 14, 2020 - February 27, 2020
Group number: 56
Project title: Sound Effect Devices for Musicians
Client &/ Advisor: Dr. Randy Geiger
Team members/role:
     Dalton Sherratt: App programming
     Eric Stablein: Signal processing, meeting facilitator
     Zach Besta: Signal processing, meeting scribe

Period summary
     Over this period, the group continued implementing the various effect modules that compose the app. The group also started the process of integrating these modules into the main user interface of the application.

Past period accomplishments

Name	Individual contributions	Hours these two weeks	Total hours this semester
Dalton Sherratt	- Finalized UI design - Designed and implemented colored buttons - Connected existing buttons to sound playback methods - Implemented sound playback using the SoundPool class - Sounds will play whenever one of nine buttons is pressed.	12	36
Eric Stablein	- Finalized original implementation of pitch-shifting algorithm in Python - The algorithm uses short-time Fourier transforms to change the pitch of an audio signal	12	36
Zach Besta	- Began adding tempo-shifting to the SoundPool-based playback system - Tempo-shifting is a change in the speed, but not the pitch, of audio - Current progress: tempo-shifting works with MediaPlayer class, but not with SoundPool - Designed an alternative algorithm for changing the pitch of audio	12	37

		○ Instead of using short-time Fourier transforms, pitch can be shifted through a combination of tempo-shifting and varying the playback speed		

Plans for the upcoming week
- Dalton
    - Work towards integrating the tempo-shifting and speed-shifting algorithms into the playback routine
- Eric
    - Finish the equalizer class
    - Continue mapping the classes to buttons in the app
- Zach
    - Convert MediaPlayer-based tempo-shifting to use SoundPool and integrate into Dalton's framework
    - Update pitch-shifting algorithm to use the tempo-shifting method
    - Finish implementing VolumeShaper-based envelope

Summary of weekly advisor meetings
- Dr. Geiger asked that the group go through materials about the high-level design of the app.
- Dr. Geiger also wanted to see more demonstrations during the next meeting.