491 Weekly Status Report S2-4

10/25

Group 15

Project: Cryen

Client: Dr. Randall Geigar

Advisor: Dr. Chen Degang

Team:
- Justin Shaver - Meeting Facilitator
- Thomas Frye - Scribe
- Will Pigg - Lead Hardware
- Chandler Davis - Lead Software
- Daniel Bohlke - Test Engineer
- Caleb Hendrickson - Test Engineer

Weekly Summary

The team is now in the thick of development. We have made some major breakthroughs and are now able to establish very clear goals to finish out this project.

Past Week Accomplishments

- **Justin Shaver**
  - Completed time based filter echo and delay
  - Started work on applying filter to input
- **Thomas Frye**
  - Devised an alternative audio signal transfer solution that will require major design changes
  - Setup test environment for new solution
- **Will Pigg**
  - Began construction of hardware components for final design
  - Took shop safety, access to be granted soon
- **Chandler Davis**
  - Switched to a different GUI library, LittlevGL. It's much smaller than GTK, has better documentation, and is open-source.

- ■ I have been doing research on this.
- **Daniel Bohlke**
  - ○ Finished first GUI screen for device
- **Caleb Hendrickson**
  - ○ Read several chapters on distortion effects and filter effects from Audio Effects: Theory, Implementation, and Application- Andrew McPherson Joshua Reiss
  - ○ Implemented Tremolo, Overdrive, Soft Clipper, and Hard Clipper in visual studio test environment
  - ○ Introduced to JACK Audio Connection Kit
  - ○ Gained fundamental understanding JACK connection kit by examining example clients in the JACK repository - focusing on the simple client and capture clients
  - ○ Worked on Jack Client code with Justin
  - ○ Tested The effects implemented on visual studio with wav files

Pending Issues

- **Justin Shaver**
  - ○ I need to get everyone's code compiled together to get a clean working environment.
- **Thomas Frye**
- **Will Pigg**
  - ○ Possible issue with debouncing - might need to use a one-shot timer for each encoder
- **Chandler Davis**
  - ○ Still need to figure out how to integrate the GUI with the components that the other team members are working on.
- **Daniel Bohlke**
  - ○ Create second screen
  - ○ Test screen on LCD Screen

Individual Contributions

Name	Individual Contributions	Hours	Total
Justin Shaver	Assisted with effect filter algorithms Started implementing the filters to audio input	9	32
Thomas Frye	Identified a better audio signal transfer solution	10	31
Will Pigg	Constructed hardware components for final design	11	29
Chandler Davis	Switched to a different GUI library	7.5	32.5

Daniel Bohlke	Finished GUI for first display	6	28
Caleb Hendrickson	Worked closely with Justin to implement additional filters and understanding JACK	10	34

Plans for Upcoming Week

- **Justin Shaver**
  - Help work on getting our workbench made to make development and debugging easier for hardware.
  - Compile together people's code so we are all working on the same material
- **Thomas Frye**
  - Rewrite GPIO interface to work the Raspberry Pi
  - Assist Will construct hardware components
- **Will Pigg**
  - Finalize hardware circuits
  - Finalize enclosure design
- **Chandler Davis**
  - Start working with LVGL to get a basic GUI running.
- **Daniel Bohlke**
  - Work on PIRM presentation
- **Caleb Hendrickson**
  - Integrate the effects that have been successfully implemented in our testing environment to work with Jack