
491 Weekly Status Report S2-5

11/8

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 has adjusted to the recent major design change. Some components needed to be modified or completely redone. And the hardware aspect of the project is almost completed.

Past Week Accomplishments

- **Justin Shaver**
 - Started moving forward with Jack.
 - Compiled work together to create our base client application. Using this we can start integrating with Jack audio.
- **Thomas Frye**
 - Rewrote GPIO interface to work with Raspberry Pi
 - Tested hardware components with Raspberry Pi
- **Will Pigg**
 - Completed all component design and construction
 - Rotary encoder circuits
 - Stomp switch circuits
- **Chandler Davis**

- Installed and setup the LVGL library
- Created a Makefile for the GUI that also builds the LVGL library
- Implemented drivers for the keyboard (simulating rotary encoders)
- Created a document detailing how to install and run the PC simulator for LVGL
- **Daniel Bohlke**
 - Helped work on the PIRM presentation
- **Caleb Hendrickson**
 - Determined that the current implementation (convolution approach) for the low and high pass functions is too slow for real time audio
 - Read chapter on filter design from Audio Effects: Theory, Implementation, and Application- Andrew McPherson Joshua Reiss
 - Created an iir version of the low pass effect
 - Created an iir version of the high pass effect
 - Successfully tested and debugged Tremolo, Overdrive, Soft Clipper, and Hard Clipper effect on the Jack client
 - In-progress of debugging the fuzz, new low pass, and new high pass effects on the Jack client

Pending Issues

- **Justin Shaver**
 - Work with Caleb to integrate the filters into the client application. Work with him to debug the issues that may arise.
- **Thomas Frye**
 - Having debouncing issues with rotary encoders
- **Will Pigg**
 - Need to finalize the enclosure and fabricate the design
 - Need materials and access to lab
- **Chandler Davis**
 - Not sure how the other components are handling their threading, so I need to check that we have a common threading process.
- **Daniel Bohlke**
 - Test GUI on LCD Screen

Individual Contributions

Name	Individual Contributions	Hours	Total
Justin Shaver	Developed main thread to utilize JACK API	8	40
Thomas Frye	Rewrote GPIO interface	9	40

Will Pigg	Completed all component design and construction	9	38
Chandler Davis	Produced documentation for GUI	11	43.5
Daniel Bohlke	Assisted with presentation and documentation	8	36
Caleb Hendrickson	Successful demo of several effect filters	11	45

Plans for Upcoming Week

- **Justin Shaver**
 - Work with Caleb to integrate the filters into the client application. Work with him to debug the issues that may arise.
- **Thomas Frye**
 - Solve rotary encoder debouncing issue.
- **Will Pigg**
 - Verify access to lab
 - Complete CAD drawings of enclosure
- **Chandler Davis**
 - Integrate drivers with Dan's GUI
 - Implement the other drivers
- **Daniel Bohlke**
 - Work on the Senior Design Poster and test the GUI on the LCD Screen
- **Caleb Hendrickson**
 - More testing and debugging of the effects that have not been successful in transition to the Jack client code
 - Determine whether to use a circular buffer for the time delay effects or whether to just store the necessary frames from the previous block