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491 Weekly Status Report S2-2

9/27

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

Most of the team was focused on setting up our operating environment for development: The first step that will be required in our design process. We also discovered a senior design project from a past year that is very similar to our project. Some of the team was tasked to look through the past group's design document.

Past Week Accomplishments

- **Justin Shaver**
  - Worked on research into past projects.
  - Worked on presentation for PIRM
- **Thomas Frye**
  - Attempting to establish audio signal delivery
  - Developed GPIO API for interacting with the RockPro64
- **Chandler Davis**
  - I've installed Ubuntu onto a PC at home. This PC has the same operating system as we (or at least Thomm) is using on the RockPro64, but it is working with a different ISA (x86) than the RockPro64 (aarch64). Since I'm relying mostly on the GTK library, this shouldn't matter until I begin to

integrate with other member's software or when I need to test the GUI with the rotary encoder. When that time comes, I will move to my Raspberry Pi 3B+, which has the same ISA and GPIO interface.

    - I did some installing and investigating different software to use in development of the GUI.
        - I tried to use the recommended IDE, Anjuta, but it was way more than we needed.
        - I think that all we need is: Glade for a graphical design interface, a text editor (or IDE, if we want the tools), and GCC/Makefiles. Then it just depends on the actual software API and its endpoints, etc.
- **Daniel Bohlke**
    - I set up Ubuntu onto a Virtual Machine
    - Created the Rough Draft of our presentation for next Thursday in class
    - Worked on the powerpoint for our faculty tomorrow
- **Caleb Hendrickson**
    - Implemented Hanning window function
    - Researched IIR filters and FIR filters
    - In process of implementing frequency filtering using a FIR filter

Pending Issues

- **Thomas Frye**
    - Due to poor documentation and lack of examples, handling the RockPro i2c module to proving to be quite difficult. This module is required to complete the audio signal transfer.
- **Chandler Davis**
    - Since I don't know the exact endpoints for our API, so I don't know what functions to use as the callbacks for GUI element events.
        - For now, I will just keep it as general as possible and hopefully be able to make it work once our code comes together more.
- **Daniel Bohlke**
    - Need to get a test GUI up and running as well as work with Chandler to discuss some of the details of the GUI.
- **Caleb Hendrickson**
    - How do we determine the algorithm for the desired frequency response/ shape of the FIR filter?

Individual Contributions

Name	Individual Contributions	Hours	Total

Justin Shaver	Reviewed previous senior design project	7	14
Thomas Frye	Finished GPIO API for RockPro64	8	14
Will Pigg			8
Chandler Davis	Setup development environment for the GUI Decided on a GUI library	10	16
Daniel Bohlke	Assisted in writing presentations and documentation	8	14
Caleb Hendrickson	Added more filters for effects	8	18

Plans for Upcoming Week

- **Justin Shaver**
  - Get our git cleaned up so we have a solid base for us to share work. Currently work is being done locally and hard to see progress.
  - Clean up Trello and actually stay on top of Trello.
- **Thomas Frye**
  - Continue working on establishing the audio signal transfer.
- **Chandler Davis**
  - I plan on creating some design documents so that I have a plan to share with the team for review before I put anything into code.
    - As part of this, I may create some proof-of-concept mockups.
- **Daniel Bohlke**
  - Work with Chandler to start developing the GUI
- **Caleb Hendrickson**
  - Complete FIR filter to implement frequency filtering
  - Research ADC data output format
  - Testing of FIR filter for correctness