EE/CprE/SE 4910 WEEKLY REPORT 03

Oct 15th - Oct 21st

Group number: 006

Project title: CyVital

Client &/Advisor: Dr. Meng Lu

Team Members/Role:

Kate Endersby - Proofreading and pending issues, website
Claire Haas - Weekly Summary, Weekly Advisory Meeting
Reza Choudhury
Maximilian Tanruther

The weekly accomplishments and plans were completed by each individual member listed as the heading.

Weekly Summary

The team worked on editing the Senior Design website, identified and installed necessary GUI packages, and completed the first design review for hardware. The lead software engineer worked on adding an oscilloscope package and a plots package, as well as changing the GUI to primarily rely on Tkinter. The first design review was completed, including determining differences between new sensor versions and pinouts of the Biopac sensors for additional implementation.

Past week Accomplishments

- Kate Endersby:
    - Improved code modularity by separating code out into plots and oscilloscope package
    - Migrated code to Tkinter GUI
- Max Tanruther:
- Reza Choudhury:
- Claire Haas:
    - Contacted Dr. Lu about different sensor versions for the Pulse Oxidation and EMG sensor
        - Pulse oxidation sensor now adds a heart rate sensor

        - EMG sensor has new footprint
    - Researched and installed new Arduino module for Pulse Oxidation sensor
        - https://learn.sparkfun.com/tutorials/sparkfun-pulse-oximeter-and-heart-rate-monitor-hookup-guide
        - The following guide talks about modifying a Qwicc style connector with the RST and MFIO pin. There is a Sparkfun library that is similar to the IR sensor that is used in Embedded Systems CPRE 2880 course.
    - Redo the schematic to use hierarchical sheets in KiCAD as follows:

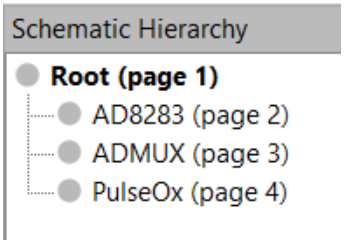

Figure 1: Hierarchical Sheets for Sensor Modularity

- Group:
    - Edited Senior Design website
    - Lightning Talk Slides

Pending Issues

- Find reflow oven instructions (in-progress)
- Get access to the Biomed Lab desktop computers (in-progress)
- KiCAD workspace creation (in-progress)

Individual Contributions:

NAME	Individual Contributions	Hours (10/15-10/21)	Total Hours
Kate Endersby	Migrated code to Tkinter GUI, improved code modularity, edited senior design website	6	30
Claire Haas	Gantt chart additions, component discrepancy resolution, schematic design check	6	31
Max Tanruther			24
Reza Choudhury			24

Plans for the upcoming week

- Kate Endersby:
    - Be able to save selections of the reaction data to files
    - Have the reaction data acquisition and analysis fully working

- Claire Haas:
    - Complete PCB layout contingent on Dr. Lu and his graduate assistant's final design decisions
- Max Tanruther:
- Reza Choudhury:
- Group:
    - Practice Lightning Talk for next week
    - Read up on materials purchasing for the board

Summary of Weekly Advisor Meeting

Dr. Lu deconstructed the DB9 connectors as part of the blood pressure and respiration sensors from the Biopac. The hardware team will plan to meet with Jacob Eisenbrenner, the graduate assistant TA, within the coming week once layout is finalized. The plan is to order the PCBs by next Tuesday in order to have enough time for board testing. The software team demoed the current GUI to Dr. Lu.