EE/CprE/SE 4910 WEEKLY REPORT 03

Oct 7th - Oct 14th

Group number: 006

Project title: CyVital

Client &/Advisor: Dr. Meng Lu

Team Members/Role:
Kate Endersby - Proofreading
Claire Haas - Weekly Summary, weekly advisory meeting
Reza Choudhury - Outline/Meeting Notes
Maximilian Tanruther - Pending Issues

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

- **Weekly Summary**

The team worked on getting a demo of the existing set-up running. This included following the documented wiring and connecting it with the software. The software team worked on CSV files for data analysis, while the hardware team created a plan for sensor testing with the existing software and other biomedical devices like wearable health watches. The team reviewed website creation for displaying and documenting the senior design project.

- **Past week accomplishments**

- Kate Endersby:
  - Created a functionality to export Sparkfun MAX30101 data to a csv file
  - Created code that imported a csv file of recorded Sparkfun MAX30101 data, displayed it in a manner that allows users to interact with it to perform data analysis
- Claire Haas:
  - Specced LEDs for board
  - Schematic of existing components created
  - Created Git repository for board

    - Imported footprints and symbols into KiCAD

- Max Tanruther:
    - Component Data Sheet Reading. Tested available sensors waiting on electrode pads. Refreshed KiCAD modeling. First look at original BioPack.

- Reza Choudhury:
    - Code clean up, consistent demo running HW/SW, added a pluggable data-source interface to the demo loop and a --demo-source flag, so we can swap between test traces (ecg_demo.csv, emg_demo.csv) without touching the GUI code
- Group:
    - Hooked up the previous Cy-Vital to existing software.

- **Pending issues**
    - Find reflow oven instructions
    - Get access to the Biomed Lab desktop computers
    - Getting all sensors hooked up to the BioPac
    - Finding out what pins on the db9 sensors do what with help from Dr. Lu
    - Finding electropads to test sensors on the previous seniordesign's project and BioPac to ensure accuracy
    - KiCAD workspace creation

- **Individual contributions**

NAME	Individual Contributions	Hours this week (10/7-10/14)	Total Hours
Kate Endersby	Sparkfun MAX30101: data analysis GUI, export data, import data	6	24
Claire Haas	Git creation, PCB schematic created with additional components, component selection	7	25
Max Tanruther	Sensor spec, sensor test	6	24
Reza Choudhury	Clean Code, demo running, demo loop flags	6	24

- **Comments and extended discussion**
    - Talk with students interested in taking bioinstrumentation to gauge their experience with electronics
    - Selection of software for 3D box modeling and printing
    - Material selection for 3D box

- **Plans for the upcoming week**

- Kate Endersby:
    - Be able to save data from other sensors
    - Be able to analyze data from other sensors
    - Try to integrate the analysis into the same GUI as the data acquisition
- Claire Haas:
    - PCB layout based on Dr. Lu's feedback
    - Update schematic in accordance with feedback
    - Simulate circuit in KiCAD or using SPICE tools
- Max Tanruther:
    - Continue sensor component testing
    - Coordinate with Dr. Lu to see if sensors are ordered
    - Coordinate with Dr. Lu to find electrode pads
    - Go over PCB design with Claire
- Reza Choudhury:
    - Work on GUI
    - Data from sensors
    - Merge progress w/ Kate
- Group:
    - Task decomposition
    - Gantt chart
    - Lightning talk presentation

- **Summary of weekly advisor meeting**

Dr. Lu shared the existing lab manuals he has created and additional components to the Cy-Vital hardware he would like implemented. Dr. Lu assigned roles to the four people such as component testing, PCB design, GUI design, and data analysis. The team will work on task decomposition and a detailed project schedule to present to Dr. Lu at the next meeting.