

sdmay18-22: Adaptive Wireless Wearable Neuro-Stimulator

Week 6 Report

October 8 - October 21

Team MembersKevin Wang — *Meeting Facilitator*Kevin Simons — *Test Engineer*Matthew Stephenson — *Report Manager*Patrick Walsh — *Communications Manager*Brian Weber — *Chief Engineer*

Summary of Progress this Report

This report period we did a lot of planning and designing of the various parts of the project.

For the app:

We continued with screen sketches for the android application. Sketches included screens for device setup, graphs of data, and settings for re-configuring device. In the design of the app, we worked on the flowchart for these screens, making sure we had an idea of how we would like the application to flow. We also have created a basic software architecture design to follow while developing the application. The architecture may change slightly from the original plan as we move forward into the implementation stage because of possible unforeseen things that we may need.

For the wearable:

Due to our lack of electrical experience we were selecting the lowest power components. After the PCB design workshop in class, we realized that we needed to pay more attention to parts other than just the power consumption. When picking parts in the past, we were just grabbing the lowest powered devices, paying no attention to anything else. The design workshop showed us that that was an error. Because of that, we realized that we needed to reevaluate all our component selection to get all through-hole components. We started on that.

For the web app:

Started and came up with a database design, and spent time figuring out how to hide the personal information of users while still allowing medical professionals to have quality research data. To do this, Patrick and Kevin, came up with having a specific User table, that has all personal information and having an ID for each user, and then use that ID for all the other tables with biometric data, this way we can still sort the biometric data and if needed we can look up the specific users as well.

Pending Issues

- May need to figure out spoofing data for testing graph views in application.
 - Re-figure out what components we need to use for the wearable that are all through-hole.
 - The Android application group will need to go over the software architecture together to make sure that we agree on what is needed.
 - The Android application group needs to meet with the faculty advisor to go over some of the basics of Android UI development.
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Plans for Upcoming Reporting Period

- UI implementation for Android app.
- Meet with the faculty advisor to get some foresight into what is needed to design the Android application UI
- Select low powered components that are through-hole

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Kevin Wang	Continued with the design of the Android application. Came up with screen sketches, and worked with Pat to revise and continue refining, as well as creating the flowchart for the app. Planning to move to implementing UI in Android Studio.	8	26
Kevin Simons	Finished up design of database, basically what data we will be storing and how we can show information about the wearable while keeping the identity of the user private. To do this we will be splitting the data into multiple tables, and only one will have the private information and we will link to that table from the others. Besides that I have been researching into how Matlab and SQL work as they are quite new technologies for me, and I'll need SQL to actually create the database this next period, and Matlab to create the graphs for our client.	7	31
Matthew Stephenson	Continued trying to relearn Electrical Engineering: Calculating power consumption of parts as well as circuit. Circuit design is something that I have no experience so lots of learning being done. I went and eliminated a lot of the parts that are not through-hole in our component selection. Additionally, I worked on writing my portion of the design document.	7	31.75
Patrick Walsh	Helped Kevin W. create and refine the screen sketches and the application flowchart. Created a basic software architecture to follow for the application, that will be slightly revised as we move forward. Spent time attempting to design the UI in android studio.	8	30.5
Brian Weber	Worked on The circuit design of our circuit, and relooked through the parts of our circuit to make sure we got parts that were able to go in a pcb	6	22.5

