EE / CprE / SE 491 – sdmay25-12
Pressure Sensor Patch
Week 6 Report
October 17th, 2024 - October 24th, 2024
Client: BAE Systems, Adaptive Adventures
Faculty Advisor: Santosh Pandey

Team Members:

Aina Qistina Binti Azman - *Software Developer*
Bilal Hodzic - *Software Lead*
Nathan Turnis - *Software Developer*
Osaid Samman - *Scrum Master/Manager/Team Organization*
Sabrina Francis - *Hardware Developer*
Zane Lenz - *Hardware Developer*
Ivan Alvarado-Santoy - *Hardware Lead*

Weekly Summary

This week, we met with a graduate student who is also working on a pressure weight scale project to gain insights into how his system operates and explore how similar approaches could be applied to our project. We tested the pressure sensors we had ordered earlier and are now focused on obtaining clear, logical data from them. Additionally, we have been developing the UI/UX for the software component of our project to ensure a smooth and user-friendly interface.

Past Week Accomplishments

- Osaid Samman:
  - Connected with grad students to update them on the project and seek their insights. Made sure the team is making progress. Experimented with some circruity.
- Ivan Alvarado-Santoy:
  - Research and identified open source project that could potentially be used
    - https://learn.sparkfun.com/tutorials/load-cell-amplifier-hx711-breakout-hookup-guide/all#load-cell-setup
  - Collect and solder hardware components from open source project to start testing
  - Implement code base from Arduino Uno to Raspberry Pico
- Zane Lenz
  - Researched 3D printing options
  - Ordered 3D filament
  - Made some preliminary prints of load cell holder
  - Explored Fusion 360 for 3D modeling

- Nathan Turnis:
    - Researched Java v.s. Kotlin for Android development.
    - Created an initial Android app repository (pushed it out to GitHub but did not realize we had a GitLab, so Aina pushed out a project to the GitLab)
    - Further research for Bluetooth solutions
- Bilal Hodzic
    - Refreshed knowledge of android development.
    - Looked into bluetooth abstractions in general for Android
- Aina Azman:
    - Worked on listing out the key section and features that the pressure sensor app should offer to users.
    - Worked on listing out data that shall be stored in the backend.
    - Started working on UI/UX of the pressure sensor app in figma.
    - Looked into 'Java vs Kotlin' to get to know if Kotlin may assist better in producing the application (in terms of running the app as a background job).
    - Pushed initial Android app repository into GitLab.
- Sabrina Francis:
    - Looked into how to use Bluetooth on raspberry pico and what materials/software we may need
    - Also looked into other potential Bluetooth options

Individual Contributions

Team Member	**Contribution**	**Weekly Hours**	**Total Hours**
Aina Qistina Binti Azman	Worked on defining key features and backend data for the pressure sensor app, started UI/UX design in Figma, explored Java vs. Kotlin, and pushed the initial Android app repository to GitLab.	6	25
Bilal Hodzic	Looked into generic bluetooth solutions. Refreshed knowledge of android app development.	6	24
Nathan Turnis	Research Bluetooth, Java vs Kotlin, created initial empty android app	6	23
Sabrina Francis	Researched how to implement Bluetooth with raspberry pico	6	24
Osaid Samman	Established connections with grad students to help us with their expertise for our project. Maintained a team schedule. Experimented with some circuitry.	4	14
Zane Lenz	Researched and experimented with 3D modeling/printing for custom parts	6	24

Ivan Alvarado-Santoy	Researched and identified open source project that can be modified and used for the project	6	20

Pending Issues

- Try learning Kotlin to understand the feasibility of potentially writing the whole app in Kotlin.

Plans For the Upcoming Week

- For the android app side, start to implement rudimentary views. Start testing with Bluetooth devices generic Bluetooth devices to see if we can get and maintain a connection.
- Further specify the elements that shall be included and implemented in the application.