EE/CprE/SE 492 WEEKLY REPORT #2

9/01/2020-9/13/2020

Group Number: Group 26

Project title: From Bodily Sensors to Cloud and Back

Client &/Advisor: Goce Trajcevski

Team Members/Role:
Justin Worley: Cloud Engineer
John Kivley: Electrical Engineer
Richa Patel: Database Engineer
Isaac Zahau: Front-end/UI
Michael Lauderback: Embedded Systems Engineer

- o **Weekly Summary**

We have ordered our hardware components to begin testing and prototyping our sensor network, however, we are still waiting on those orders to arrive. We have a test plan written up to improve efficiency in the testing process.

On the front-end side, we were able to get the mobile app to listen for incoming data and display that data onto the UI. Right now, everything displayed is just hex codes so we need to work on decoding that hex code into a user-readable data. We were able to get a test web app to display a main page and navigate to a secondary page.

We also started talking about how we want our database to look like and how each table on the database will relate. We have the User table figured out as well as the User-Patient relationship table. Next step is to figure out how we want the sensor readings to be stored.

- **Past week accomplishments**

  • Justin Worley:Started an react-springboot project for the web app. Started working on integration firebase authentication for the main website page.

  • Isaac Zahau: Able to get Bluetooth Low Energy to work on the mobile app. The app is able to listen to incoming data from another device and display it onto the UI.

  • Richa Patel: Created tables in DynamoDB and started doing research to do data analytics for the heart rate.

  • Michael Lauderback: Started writing C code for MCU data handling; started designing MCU schematics and created custom schematic/footprint for STM32wb chip.

  • John Kivley: Still waiting on hardware orders to arrive to ETG. In the meantime I have written up some hardware test plans and drew some test schematics so that when the hardware does arrive, then testing can be run more efficiently. Researched battery enclosures as well.

- **Pending issues**

  • John Kivley: I have become familiar with KiCad and I have written a test plan for the hardware, now I am waiting for the hardware to arrive.

  • Michael Lauderback: I have a lot of code written which can be written and tested using desktop C, but I still need to test on an embedded platform. I am waiting on the nucleo boards so I can start to do that.

- **Individual contributions**

NAME	INDIVIDUAL CONTRIBUTIONS	HOURS THIS WEEK	HOURS Cumulative
Isaac Zahau	Code written for the Bluetooth Low energy. Able to listen for incoming data.	5.5	11

John Kivley	Been in contact with Sungmin Kang and he will get us a mobility sensor this month. Wrote a hardware test plan and researched battery enclosures.	5	10
Richa Patel	Did research on how to get started with the heart rate analytics portion and created some tables in DynamoDB	4	8
Justin Worley	Started working on the Web app. Initiated repo folder and set up test page with basic navigation.	5	10
Mike Lauderback	Started writing C code for MCU data handling; started designing MCU schematics and created custom schematic/footprint for STM32wb chip.	12	3

- ○ **Comments and extended discussion**

    We are all currently still trying to come to grips with the different approaches to each class that we are taking.

- ○ **Plans for the upcoming week**

• Justin Worley: Finish setting up Login page authentication. Connect with the DB and look into graphing data from DB.

• Isaac Zahau: Now that bluetooth communication is working, the next step is to try and decode the hex data sent from the MCU. Also need to work on the UI for easy navigation.

• Richa Patel:. To do research on heart rate analytics this week and continue to build tables if necessary.

• Michael Lauderback: Continue designing schematics for different MCU components.

• John Kivley: Continue learning KiCad for our PCB design for the MCU, pulse sensor, and mobility sensor. In addition, continue adding information to improve the hardware test plan so that we are ready for testing when the hardware arrives.

- ○ **Summary of weekly advisor meeting**

  Goce went over the importance of using Trello(or similar tool) to keep track of team and individual progress. We gave Goce an update to our team and individual progress. Goce ended with meeting with a reminder to stay safe with Ames being a Covid-19 hotspot.