*EE/CprE/SE 492 WEEKLY REPORT #4*

*9/27/2020-10/11/2020*

*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**

On the mobile app side, we started and finished setting up the sign up and sign in page. We're also in the process of testing the database with the app.

On the web app side, we connected to the database. We sent and received data. Toward the end of the second week we noticed that we were not using the database correctly..

For hardware, we received the nucleo boards are working on getting communication between sensor and mcu working. We are also working on developing communication "protocols" for sending and receiving data so each side knows if the data was sent/received.

o **Past week accomplishments**

• Justin Worley: Pulled and pushed to the database.

• Isaac Zahau: Integrated firebase user login and sign up. Able to connect to DynamoDB and save data.

• Richa Patel: Created new tables needed on DynamoDB, and currently on boto3 to modify and update the tables from there.

• Michael Lauderback: Continuing to write MCU code. Developed data transmission formatting standard to make frames small and easy to parse. Also developed communication protocol flowcharts/logic so that the MCU and its extensions know if data has been successfully sent or received.

• John Kivley: Completed hardware testing for the pulse sensor IoT network. Began developing code for BLE communications with the MCU. Ordered remaining battery hardware for the rest of the IoT networks and received the mobility sensors, developed in the graduate lab in coover hall, from Sungmin Kang.

o **Pending issues**

o **Individual contributions**

| NAME | INDIVIDUAL CONTRIBUTIONS | HOURS THIS WEEK | HOURS Cumulative |
|---|---|---|---|
| Isaac Zahau | Code written for the Bluetooth Low energy. Able to decode hex input. | 10 | 20 |
| John Kivley | Completed testing hardware circuitry for pulse sensor IoT network. Began developing code for bluetooth communications with the MCU. | 5 | 10 |

| Richa Patel | Started using SDK boto3, and I updated the tables, and created new tables. | 5 | 10 |
| --- | --- | --- | --- |
| Justin Worley | Setup web auth and Database connection. | 4 | 8 |
| Mike Lauderback | Developed data transmission formatting standard. Also developed communication protocol flowcharts. | 5 | 5 |

- o **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.

- o **Plans for the upcoming week**

  • Justin Worley: Work to figure out how we need to set up the database. Start looking into and implementing a graph for a single user in the web app.

  • Isaac Zahau: I will continue doing some testing with the mobile app to database connection and make sure things are being saved as intended. I'll need to make sure that reading from the database is working.

  • Richa Patel: Still trying to figure out how to pull in columns and rows from the database.Then hopefully later in the future work on the data analytics.

• Michael Lauderback: Continue designing schematics for different MCU components.  Start developing BLE code with nucleo boards and implement data transmission standards.  Try to follow architecture designs I created from last semester.

• John Kivley: Continue developing software for IoT pulse sensor network and have BLE communications working. In addition, begin testing hardware circuitry for mobility sensors.

- **Summary of weekly advisor meeting**

  We ran through all our Trello cards with our advisor and they commented on each card. They also advised us to focus on making sure that the database tables were set up to allow easier data analytics without complex processes. They also requested that we finish our PRIM slides and note a few days ahead of time so that they would have time to review them for us.