10/26/2020-11/9/2020

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

○ **Weekly Summary**

We wrote a simple code for data processing that is deployed on the cloud. When a data is processed, feedback is then sent back to the mobile app.

On the web app side, we were able to finally pull and display data. We then started working on filtering and displaying the selection for patients. We were able to pull the list of patients but when passing that information on we ran into issues with how React uses states.

For hardware, we established a semi-functional BLE mesh network for the sensors with the MCU and a smartphone.

○ **Past week accomplishments**

• Justin Worley: Pulled and displayed a providers patient list. Started to work on displaying a patient's data.

• Isaac Zahau: Set up triggers on our database, wrote a simple code for data processing and set up SNS for mobile notifications

• Richa Patel: I helped Isaac research and sent links to him. What I researched is how to send notifications from the phone using the lambda function to android. I worked with Justin on the website. Also, did the research on pulling the trigger.

• Michael Lauderback: Continued to develop communication protocol flowcharts/logic so that the MCU and its extensions know if data has been successfully sent or received.

• John Kivley: These past two weeks have been a little odd. I was able to complete most of the BLE mesh functionality, however, I was not able to complete much more as I tested positive for Covid-19 and spent time recovering.

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.	6	12
John Kivley	Worked on BLE Mesh code and achieved some functionality. Testing positive for Covid-19 set me back.	5	5

Richa Patel	Learned how to use react, and I was able to help Justin with the website. I did research on pulling the trigger, and helped Isaac with his research. I also got and made a lot of progress with the poster.	5	10
Justin Worley	Worked on getting data from the database and trying to parse it.	7	14
Mike Lauderback	Designing communication flowcharts and porting heart rate sensor libraries from arduino to the STM32 IDE.	2	6

- 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.

- **Plans for the upcoming week**
  - • Justin Worley: I am planning on setting everything up to have a brief demo of the web app. Possibly get a patients heart rate displayed..

  - • Isaac Zahau: I will be finalizing the mobile app UI for our short demo

  - • Richa Patel: Continue to work on the final report, presentation, and the poster.

  - • Michael Lauderback: Finishing up translating the arduino pulse libraries to STM for the nucleo boards.

  - • John Kivley: Continue developing software for BLE communications, and establish a data stream from the pulse sensor to a smartphone. Will also be working on the final report, presentation, and poster.

- **Summary of weekly advisor meeting**

  We talked more about the poster and some of the do's and don'ts. We went over what we had been working on and what we plan to work on in the upcoming weeks. We went over our final presentation schedule and the things our advisor would like upto have submitted to them before we turn it in.