*EE/CprE/SE 492 WEEKLY REPORT #1*

*8/17/2020-8/31/2020*

*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**

The past two weeks we have begun ordering hardware for testing and have started on a PCB schematic for our MCU. We changed our communications microcontroller from the ESP32 to the STM32wb due to lower power consumption, smaller in size and it had the same bluetooth/wifi capabilities. Once we have the hardware ordered and tested we will have the PCB ready to order.

On the software side, we're currently testing the bluetooth feature on the mobile app. Nothing seems to be working right now and the code is needlessly complicated so we're rewriting the code in a more direct and efficient way. We also started researching what framework(s) and approaches we want to use for the data analytics and website.

○ **Past week accomplishments**

• Justin Worley: Started to look into a framework to use for setting up the Web and Analysis project.

• Isaac Zahau: Started testing the mobile application bluetooth feature.

• Richa Patel: Started to look into the data analytics for the project.

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

• John Kivley: Ordered the STM32wb development kits for testing. For the hardware power supply I researched and ordered batteries and voltage boosters and researched potential battery covers if these batteries withstand testing.

o **Pending issues**

• John Kivley: Researching and testing the new microcontroller will take some time. We hope to begin testing as soon as possible when the parts arrive from our order. Researching how to design a PCB schematic and get it ready for order since both Michael and I have very little experience in PCB design.

• Isaac Zahau: Bluetooth does not currently work at all. Rewriting some of the code since there is a more efficient way of getting the bluetooth connection to work.

o **Individual contributions**

| NAME | INDIVIDUAL CONTRIBUTIONS | HOURS THIS WEEK | HOURS Cumulative |
|------|--------------------------|-----------------|------------------|
| Isaac Zahau | Testing bluetooth on mobile app | 3 | 6 |
| John Kivley | Researched battery supply hardware and STM32wb dev kits, made hardware orders with mike and contacted Sungmin Kang for | 4 | 8 |

| | | | |
|---|---|---|---|
| | an update on mobility sensors. | | |
| Richa Patel | Did some research on how to get started with the data analytics portion | 4 | 8 |
| Justin Worley | Framework Research | 2 | 4 |
| Mike Lauderback | Started writing C code for MCU data handling; started designing MCU schematics and created custom schematic/footprint for STM32wb chip. | 12 | |

- 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: Continued research into framework(s) and fist step into implementing a base project to commit to the team's repo.

  • Isaac Zahau: My priority is to get the bluetooth feature working to the point where two devices can send and receive data.

  • Richa Patel:. Continuing to research on the data analytics this week.

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

  • John Kivley: Continue working on PCB design for the MCU and pulse sensor. If our hardware arrives this week, we will begin testing immediately.

- **Summary of weekly advisor meeting**

  We did not have a meeting with our advisor. We plan on meeting this Tuesday.