EE/CprE/SE 491 WEEKLY REPORT 9 (4/20/2019 – 4/26/2019)

Group Number & Project Title: (5) Road Safe Phone Case

Client: Christine Shea-Hunt

Advisor: Dr. Diane Rover

Team Members/Role: (Software) Zixiao Lu, Yifei Wang

(Hardware) Kedan Xin, Yue Chen, Sarah Baratta

Weekly Summary

For this week, the team completed a second draft of the project plan, finished making the final presentation slides for the first semester's progress, and began to work on a second version of the design document. Also, a feasible option for the lid detection sensor was tested along with the RFID module. Each system is working now, expect the sticker for the RFID module is not working properly when placed on a phone; thus, the team has to continue looking for RFID stickers that will work on phones.

Since the presentation is coming up next week, the team needs to be ready for the presentation, so a majority of the week was dedicated to working on the slides and practicing the presentation in order to succeed on it and the Q&A session. Furthermore, our team met and discussed about the revision of the design document, and discussed about the future plans for the rest of the semester as it comes to an end.

Past week accomplishments

For this past week, the team was able to test the sensors for the physical case. For the lid sensor, the team tested two of the top picks that had been researched which were the reed switch/sensor and the Hall effect sensor. After testing both sensors in the locking mechanism circuit it was found that the reed sensor was easier to use. Thus, this is the main choice for the lid sensor as of now. However, wiring issues from the PCB to the sensor within the case must later be sorted out when making the final design. The RFID sensors for phone and key detection were also tested out, and they seem to be working properly. However, the sticker for the sensor to detect did not operate correctly when placed on the phone. Thus, another type of material for the RFID sensor has been purchased that is hopefully more compatible with a phone.

Also, the team has met to work on the improving and updating the second version of project plan now that the direction of the project is more clear and less likely to change. Using advice given by our advisor as well as feedback provided by the TA from the first version of the document, significant changes were made to the use case diagram and the high-level system

diagram. As for written content, a few updates and several detailed additions to previously existing parts were added. In the same manner, the team will be using the same methodology to revise the design document.

Described below is what each individual team members worked on:

Zixiao Lu: Worked on the project plan revision, making presentation slides , worked on RFID module.

Yifei Wang: Made a new high level system diagram, made presentation slides, worked on RFID.

Kedan Xin: Tested Hall effect sensor, REED switch sensor, RFID module and RFID sticker tag. Assembled sensors on the 3D Printed case.

Yue Chen: Made the presentation slides, edited the project plan, RFID research for improvement.

Sarah Baratta: Worked on revision of document, helped members with testing new parts, updating and adding more information to the team website.

Individual Contributions Table:

Name	Individual Contributions	Hours This Week	Hours Cumulative
Zixiao Lu	Worked on the project plan revision, making presentation slides , worked on RFID module.	6	50
Yifei Wang	Made a new high level system diagram, made presentation slides, worked on RFID.	6	50
Kedan Xin	Testing Hall effect sensor, REED switch sensor, RFID module and RFID sticker tag. Assemble sensors into the 3D Printed case.	6	57

| Yue Chen | Made the presentation slides, edited the project plan, RFID research for improvement. | 6 | 54 |
| Sarah Baratta | Revision and final editing of project plan, testing with members, website improvement | 7 | 54 |

Plans for the Upcoming Week

The team plans to finalize the details on the last remaining documents, such as the design document and pages of the team's website. This entails preparing final documents and designs that can be presented to the clients and to others that have interest on the project plan and the team's progress. Also, the team will soon have a presentation to instructors regarding the design decisions made and how much progress has been made this semester. Thus, the presentation slides will be constructed and assigned evenly to the members to talk about during the team speech, which will be practiced together before final presentation, potentially with the team's advisor for additional advice and preparation.

Additional time outside of end-of-semester preparation will be focused on testing the RFID tags and implementing them into the Arduino-controlled locking system to experimentally verify that they work and are viable sensors.

Described below is what each individual team members plans to work on:

Zixiao Lu: Finish the RFID Module with stickers that are compatible on a phone and finish the revision of design documents.

Yifei Wang: Practice for the coming presentation, meet with advisor to rehearse. Also, finish all documents before presentation on Tuesday.

Kedan Xin: Search for new type of RFID sticker that compatible with cell phone and different magnetic sensor for the project.

Yue Chen: Send the advisor the presentation slides and improve the presentation slides based on the feedback.

Sarah Baratta: Prepare the for the presentation by finishing slides and rehearsing with team. Send final information on team's progress to the client.