Bi-Weekly Report 2

1. Summary

The team has decided to move forward with an On-Board Diagnostics (OBD) reader that plugs into the car's Engine Control Unit (ECU). The OBD will send data to the drivers phone via Bluetooth where an app will dictate the driver's mobile freedoms. The idea was presented to our advisor and was well received. Then the group met with Christine to share updates. After submitting the lightning talk presentation, the team members are ready to construct a design document. Individual roles have been highlighted for individual direction.

2. Individual contribution (finish before tmr afternoon)

a. Member contribution to progress.
b. Hours worked by each member for the week.
c. Total Cumulative hours for each member.
   Our team is working seamlessly, and we are making some progress. Our goal is to have a prototype for the project by the end of the semester, so with our current pace, we will be able to achieve that goal. As of now, the exact work details and timeline are not clear, therefore the time spent on the project by each team member varies. All the team members are a valuable asset for this project and each one is contributing on their own way. The following paragraphs display what each member did and the amount of time spent by each one.
d. (Philip) Once the team decided on an idea, we had to quickly put together the first Lightning Talk presentation. Philip was the one to add everyone's voice recordings and complete final checks before submitting it. He was also present for the first meeting with our faculty advisor. In the meeting, he and others discussed their current idea, its strengths and weaknesses. Philip has been brushing up on his Java skills, and researching microcontrollers in the background.
e. (Ali) Ali attended our first meeting with our advisor to discuss our concept and ask the advisor for their opinion. Ali attended the second meeting we had with our client, to discuss our concept with her and see if there are any changes she would like to make. Ali also started the research on the app design approach and started developing user's stories for the app. Finally, Ali is researching bluetooth to understand the protocol we are going to use to communicate with the OBD.
f. (Shuang) Shuang has attended and kept meeting notes of the weekly group meeting. In this meeting We recapped the meeting with the advisor. We rediscussed and decided on an initial approach that all group members agreed on, and assigned technical roles for each member. We assigned tasks to each person to research in preparation for the design document and graph. Shuang attended bi-weekly meeting with Christine and helped her understand our initial

approach better. Shuang also researched the possibility of hosting the project backend on Google Cloud Platform(GCP).

g. (Isaac) Isaac attended our first meeting with our senior design advisor to get his opinion on the design we came up with for the Road Safe Phone Case. He was able to discuss with our advisor on the pros and cons of our design ideas. He also asked if our advisor had some ideas that would improve on our design. Isaac also attended our second meeting with the client and was able to take note on the thoughts of our client about our design idea. He was also responsible for researching the different types of bluetooth protocols that would be ideal for our design.
h. (Chad) Chad researched OBD-II interfaces and how to program communication between a car and a microcontroller. He also researched what kind of microcontrollers would work best and how we could implement them in a fool-proof way. Chad also attended the client meeting, where the group discussed the idea and made sure she approved of our ideas. Chad also attended the advisor meeting, where he gave us some more ideas that we could potentially incorporate.
i. (Shihab) Shihab researched the raspberry pi project board and all its features and the protocol it uses to communicate with other parts of the system. He also gave the idea that if the ECU reader device was removed from the car then it saves the signal and sends it to the parent's device whenever the car gets close to that device. Shihab also was a valuable member in the team meetings and the client meeting through his comments and ideas, but similar to last week and due to time conflict he was not able to attend the advisor meeting.

Name	Weekly hours	Cumulative hours
Philip	5	13
Ali	6	13
Shuang	5	13
Chad	6	13
Isaac	6	12
Shihab	6	13

3. Pending issues

Our top priority is to come up with a design diagram that will help guide us through the implementation. This design diagram will take our high level components and divide them into lower level components that we can start working on. Another pending issue we have is translating this design diagram into our first version of the design document, that could help people outside our project understand our concept. Finally, we need to research any new technologies that we might need to move forward with our implementation.

4. Plans for next 2 weeks

We have a busy two weeks ahead of us. We got off to a slow start and need to catch up. Our first goal is to come up with a complete overview of our design and assign roles to every part. We are planning on creating a rough schematic of how everything will communicate with each other. We have our second advisor meeting this friday, where we hope to polish our design structure with him and go over anything that needs changing. After we polish up our design structure, we plan on starting to work on our design document. Once we are certain about our design, we will then start to purchase items we will need, such as a microcontroller and a device which can communicate to OBD-II interfaces. Depending on when we can get them ordered and how fast they get here, we can hopefully start to do some actual work with them as well. Our final goal is to get our website up and running and upload everything we have to it. Again, this will be a very busy two weeks, but it is necessary we can complete these goals to be successful with this project.