

EE / CprE / CybE / SE / SD 491– sdddec24-17

SmartPark: IoT-Driven Automatic Parking Solution

Week 5 Report

Feb 28 – March 5

Client / Advisor: Md Maruf Ahamed

Team Members:

William Clemmons - Project Lead and Software Design.

Kennedy Reiling - Client Interaction and Hardware Design.

Brian Witherspoon - Hardware and Software Design.

Ethan Haberer - Hardware Design and Quality Control.

Zachary Sears - Hardware Design and Quality Control.

Mubassir Serneabat Sudipto - Client Interaction, Quality Control, and Software Design.

Past Week Accomplishments

- Project Team:
 - We have presented our research to the client for feedback on design decisions.
- Application Team:
 - Held a JavaScript training course to prepare the developers for designing our app.
 - We began using Expo, which allows developers to view their app in live time on a native device.
- Server Team:
 - We await specifics on their selection of server infrastructure and hosting solutions.
 - Details on implementing Self-Hosting BaaS or alternative hosting options are pending. We are currently proceeding with BaaS as per the suggestion from the advisor/client.
 - Evaluation of projected costs, scalability, and security measures for server setup remains to be shared.
- Hardware Team:
 - We started prototyping with the ultrasonic sensor.
 - Created skeleton code to use as a baseline before linking multiple sensors.

Pending Issues

We must discuss Git to allow the app team to code on the same files simultaneously.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
William Clemmons	Lead a training workshop to get the software team started with javascript and React Native	2	17
Kennedey Reiling	Started prototyping with the ultrasonic sensor. Got basic arduino code for the sensor and the LCD screen.	2	16
Brian Witherspoon	Acquired an Arduino Uno and began testing ultrasonic sensor capabilities. This included testing the limits of potential weatherproofing.	2	16
Ethan Haberer	Continued training and researching for app development. I practiced app development with a simple calculator app. I prepared my computer for the upcoming development phase of our project.	3	17
Zachary Sears	Began testing with ultrasonic sensors by creating an initial program for taking measurements from a single sensor and outputting to an LCD screen	2	17
Mubassir Serneabat Sudiopto	While advancing in application development, significant effort was invested in learning and practice, transitioning from developing a basic calculator to crafting a program with box headers, lists, and descriptions. Concurrently, diligent preparations optimized the computing setup, preparing for the next project phase. These steps aim to bolster technological capacity, promoting an innovative and productive development process.	2	18

Plans for Coming Week

- Application Team
 - We will create a wireframe for the basic functionality of the app.
 - We will continue the development of the SmartPark Project.
 - We will continue to conduct React Native research.
- Server Team
 - We will start learning how to gain access and use the server for the project.
- Hardware Team
 - We will continue conducting experiments with Arduino boards and sensors.
 - We will be focusing on linking multiple sensors up at once.