

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

SmartPark: IoT-Driven Automatic Parking Solution

Week 7 Report

March 20 – March 26

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

- Application Team:
 - Initiated research into UI/UX best practices and trends to inform their design decisions and enhance user satisfaction.
 - Began the initial prototype for how the application would lock.
 - Explored various authentication methods to ensure the application's locking mechanism's security and ease of use.
- Server Team:
 - Drafted UI design for the application.
 - Conducted thorough security assessments to fortify the server infrastructure against potential vulnerabilities.
- Hardware Team:
 - Created a simulation with code for one Arduino board with 4 sensors connected to LEDs to test our simulation.
 - Began experimenting with ultrasonic sensors, laying the groundwork for further development and integration.
 - Created initial skeleton code to establish a foundational structure for future enhancements and integration of multiple sensors.

Pending Issues

- Finding suitable times when the Application/Software Team is available for team meetings.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
William Clemmons	Research difference react native component libraries to simplify development	5	23
Kennedey Reiling	Met with the hardware team and simulated the Arduino UNO with 4 ultrasonic sensors. Also determined how we want to wire the 4 sensors to one board. Also created documentation for the simulation	6	23
Brian Witherspoon	Met with the hardware team and created an Arduino UNO simulation that included 4 ultrasonic sensors and LED confirmations. Also researched Bluetooth modules that will be used to connect to WIFI boards.	6	23
Ethan Haberer	Practiced coding with react-native. Created a clicker game in order to increase my knowledge of the React Native software. Began drafting UI designs.	5	22
Zachary Sears	Used an Arduino simulator to simulate an Arduino Uno connected to 4 Ultrasonic sensors and corresponding LEDs. Contributed to Bluetooth and WiFi board research.	6	24
Mubassir Serneabat Sudipto	Diving deeper into React Native by creating simple games. One is a Tic-Tac-Toe game, exploring how to handle touches and manage game state. Another is a memory-matching game, where I have been learning about animations and transitions. These projects are helping me get hands-on experience and deepen my understanding of React Native.	5	24

Plans for Coming Week

- Application Team
 - We will start planning to create a wireframe to outline the app's basic functionality, providing a clear blueprint for further development.
 - We will explore various UI libraries to identify the most suitable options for the app's development, aiming for an effective and efficient design process.
 - Decision on the selection of UI design.
- Hardware Team
 - We will continue their work with Arduino boards and sensors, advancing their understanding and capabilities in hardware development.
 - Start to implement the tested simulations into physical hardware.
 - Start to test the concept of using the wifi board and Bluetooth module.