

# Software Design and Development

## Project Summary

### Title

**Airport Valet Car Locator Mobile App – “Valet-Buddy”**

### Project Team

**Our team is Team 1 comprised of the following students:**

- **Jordan Treutel**
- **Richard Hoehn**
- **Ian Hurd**
- **Patrick Burnett**

### Project Objectives

Summarize the main purpose or goal of the project. Why is the project being undertaken, and what problem does it address?

**This project is used in the Airport Valet parking business. It solves the issue of current valet parking lots requiring each parking spot to be physically labeled with paint. Each year the parking lots need to be re-painted, which costs a lot of money and creates “downtime” for the parking lot. Using a GPS solution, the cars will be parked and tagged with GPS coordinates which later on can be retrieved from a database.**

**Using an app (Android & iOS), valets can park, and GPS tag the car. Once the owner of the car comes back from their trip the valet searches for the car via the license plate and finds the car on the lot via GPS using the app.**

The project description should include a brief one paragraph summary of the software development project which clearly states the goal or end-product of the project.

**The project is a mobile app that allows a user to set a GPS location for a car based on their phone's current GPS location, along with an associated license plate number, and picture of the car. Another user can then retrieve the location of the car by entering the license plate number. The storing and retrieval of the car is facilitated by a server that employs a database for getting and setting GPS coordinates and license plate numbers for later retrieval. With this app, GPS can be used to "Set" and "Get" the car's location and displayed on a user's mobile phone.**

Technical components including data, development environment, programming languages, interfaces if any as applicable, models.

- **General – Total Project**
  - Visual Studio Code
  - GitHub
  - Using JSON Interface for data transfer (Client <-> Server)
- **Mobile App**
  - Flutter (mobile framework)
  - Google Maps API
  - Dart (mobile programming language)
  - Android Studio - Android/Apple Phone Emulator
- **Server (REST)**
  - Python
  - Flask (REST)
  - Database (TinyDB - Native Python)

Key Deliverables: List the primary outputs or results that the project is expected to produce. This could include software modules, documentation, reports, or other tangible items

- **A method of determining current GPS coordinates**
- **A means off storing and retrieving coordinates in a database, along with additional data (image data of the vehicle, license plate number, etc.).**
- **A user-friendly search by license plate number**
- **A means of accessing the phone's camera for embedding a camera interface in the app, as well as saving images taken with this directly to the app's database.**
- **Mobile App Executable (\*.IPA & \*.ABX files)**