Team 2 (The Pick&Park)

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## Preface

(Describe the purpose of this document, its expected readership and its version history, including a rationale for the creation of a new version and a summary of the changes made in each version.)

|  |  |  |
| --- | --- | --- |
| Version | Date | Changes |
| 1.0 | 03/15/2025 | Initial Version |
| 1.1 | 03/15/2025 | Added Glossary |
| 2.0 | xx/xx/xxxx | Fixed version date notation, … |

### Purpose

This document serves as a comprehensive guide for the development and understanding of the software project titled "The Pick&Park".

### Audience

The intended audience of this document includes project stakeholders, developers, testers, and anyone involved in the project lifecycle.

## Introduction

(Introduce the software project, its goals, and the problem it aims to solve)

### Project Overview

"The Pick&Park" is a parking garage automation designed to manage parking usage & online reservations for a parking garage. It secures & streamlines parking space tracking, reservation & garage management, and reporting.

### Project Goals

* Improve parking space accuracy.
* Enhance parking efficiency.
* Provide real-time reporting capabilities.

## Glossary

(Define key terms and acronyms used throughout the document, unless they are commonly known to each possible stakeholder (e.g., “Cell phone”) AND used with their common meaning. Do not expect your stakeholders to be experts. If in doubt, define a term.)

* **Parking Spot**: The physical location where 1 vehicle is allowed to park
* **Parker**: the person who uses the app & parks in a parking spot
* **Parking Garage**: A building (or section of building) containing one or more floors dedicated to parking.
* **Parking Level**: a floor in a parking garage (can be the only floor available).
* **Spot Inventory**: The stock of parking spots available for reservation.
* **Reservation**: A parking spot currently in use, with a vehicle parked there.
* **API**: Application Programming Interface.

## User Requirements and Use Cases

(Outline what the system must do from the user's perspective. User stories need to use the format discussed in class and on our slides. Use cases provide detailed scenarios of system interactions.)

### User Stories

(A collection of user stories that apply to the project.)

1. As a registered parker, I want to log in securely so that I can easily and unquestionably reserve a parking spot.
2. As a parking garage owner, I need to maintain spot inventory so that parking spots shown on the app match their availability in real life.
3. As a sales manager, I want to generate sales reports by date range so that the upper management can be kept up to date on the parking garage’s performance & profitability.

### Use Case: Adding a New Product

|  |  |
| --- | --- |
| Identifier | “UC-1 Reserve a Spot” |
| Goal | Reserve a parking spot |
| Requirements | Know the layout of the parking garage |
| Initiating Actor | Parker |
| Participating Actor(s) | Parking garage owner(s), third party payment vendor(s) |
| Pre-conditions | Locations for the app turned on,  Parker is logged in  Another parker is not parked in the spot |
| Post-conditions | Parker has reserved a parking spot, paid, & is parked there |
| Included Use Case(s) | Parker login, report |
| Extension(s) | N/A |

**Table 1: Typical Course of Action**

|  |  |  |
| --- | --- | --- |
| Seq# | Actor’s Action | System’s Response |
| 1 | Parker opens the app |  |
| 2 |  | Display parking garage(s) on a map |
| 3 | Parker selects a particular parking garage |  |
| 4 |  | Display the bottom level of the parking garage |
| 5 | Parker cycles through parking garage levels |  |
| 6 |  |  |
| 7 | Parker selects a parking space |  |
| 8 |  | Ask the user to input their information to pay & finish |
| 9 | Parker enters their info |  |
| 11 |  | Check the submitted information |
| 12 |  | Determine the submitted info is acceptable |
| 13 |  | Ask parker to remember their info for easier & faster reservation later |
| 14 | Parker accepts or declines offer |  |
| 15 |  | Inform the parker that the reservation was a success |
| 16 |  | Display the reservation(s) of the parker |

**Table 2: Alternate Course of Action**

|  |  |  |
| --- | --- | --- |
| Seq# | Actor’s Action | System’s Response |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Table 3: Exceptional Course of Action**

|  |  |  |
| --- | --- | --- |
| Seq# | Actor’s Action | System’s Response |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

## System Architecture

(Describe the high-level design of the software.)

### Components

### Deployment Diagram