SUP'COM
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Design Document

SmartPark

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1- General Overview

The Smart Park mobile application addresses the pressing challenges of urban traffic congestion and limited parking availability. With the increasing number of vehicles in cities, drivers often struggle to find open parking spots. Smart Park provides real-time parking availability, helping drivers quickly locate the nearest available parking and reserve a spot. This solution optimizes parking resources, enhances the driving experience, and contributes to a more efficient and eco-friendly urban environment.

2- UML Diagram

2-1- Use case Diagram

This diagram illustrates the key functionalities of the smart parking system. It shows how users can authenticate their access, find the nearest parking location view available parking spots and reserve a spot. Additionally, it highlights the roles of administrators who can manage users and parking facilities.

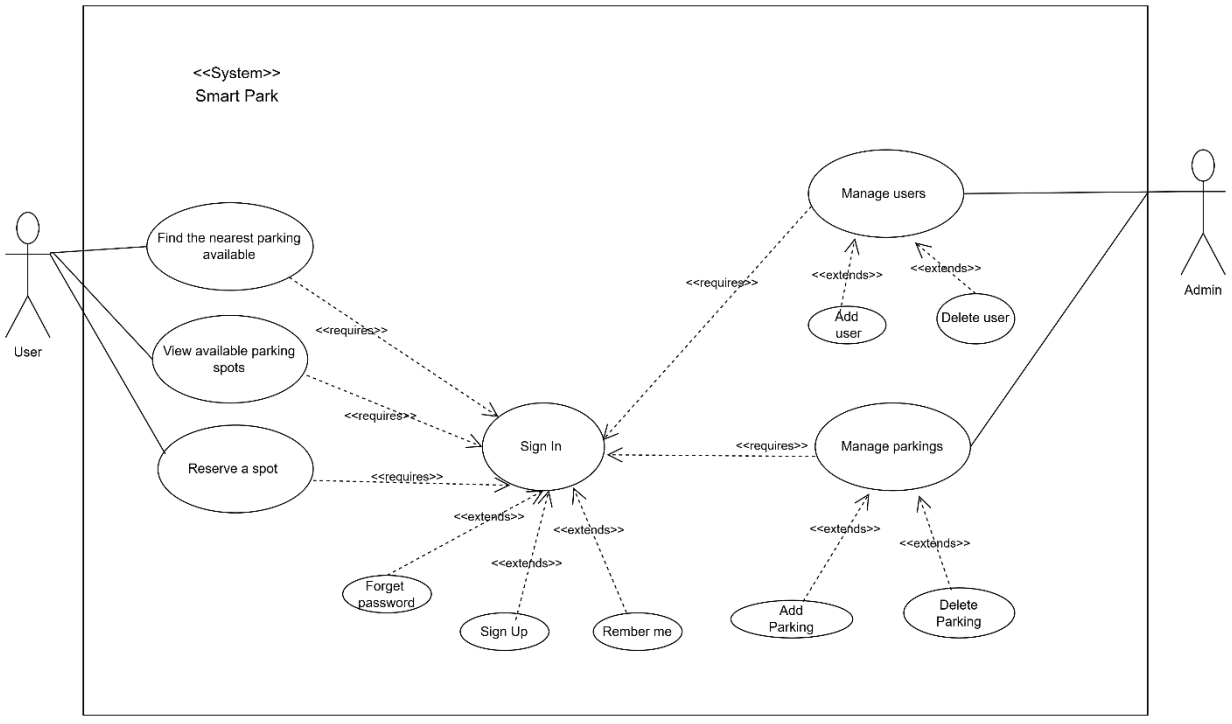

Figure 1: Use Case Diagram

2-2- Class Diagram

The class diagram illustrates the architecture of the smart parking management system. It highlights the main entities such as Parking, Spots, Sensor, Vehicle and User along with their relationships.

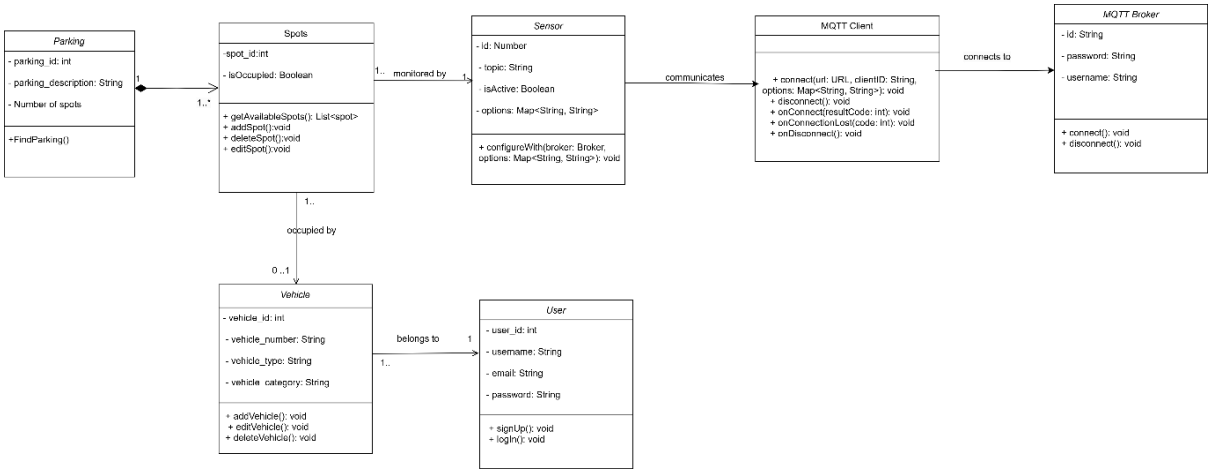

Figure 2:Class Diagram

2-3- Sequence Diagrams

The following sequence diagrams illustrate the interactions among various components within the system.

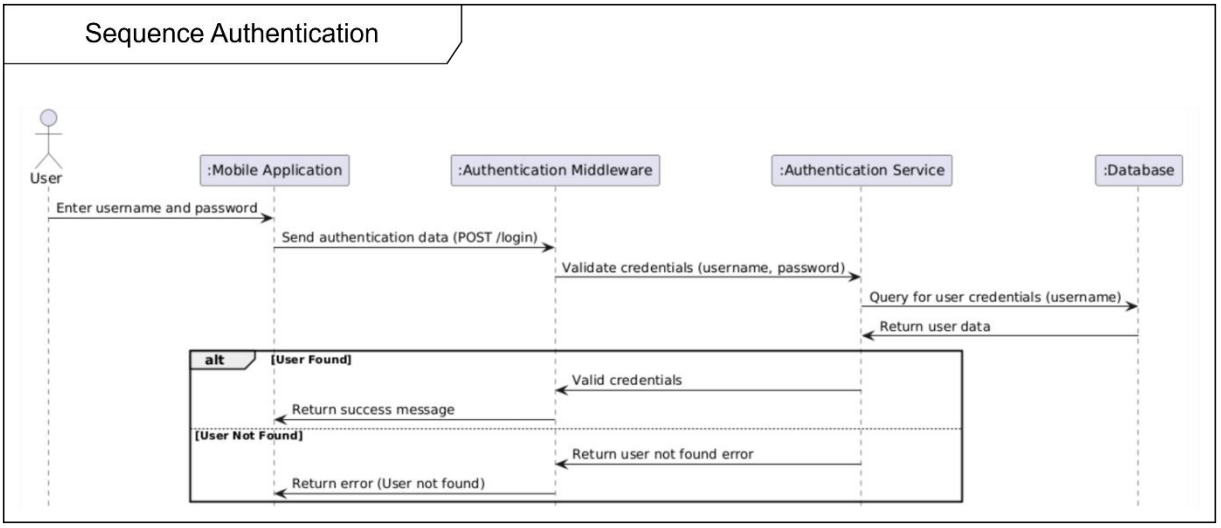

Figure 3: Sequence Authentication

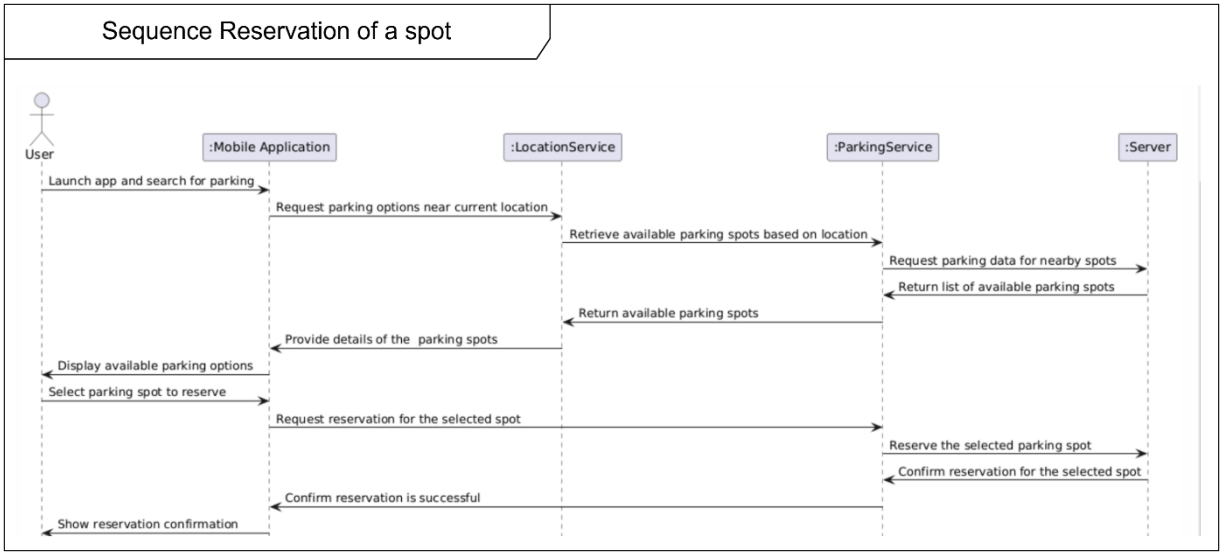

Figure 4: Sequence reservation of spot

2-4 - Deployment Diagram

This deployment diagram illustrates the interaction between various system components.

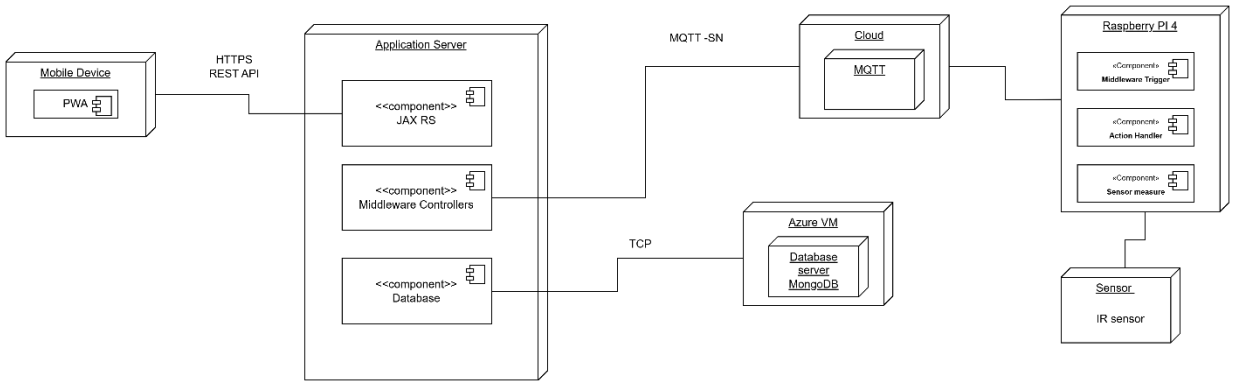

Figure 5: Deployment Diagram