Defining Model Scope Using User Story

Customer User Story

1. As a customer, I want to locate available parking spaces.
2. As a customer, I want to reserve a parking spot.
3. As a customer, I want to park my car with sufficient space and without hassle.
4. As a customer, I want to manage the parking sessions like start and stop by scanning a QR code on the parking spot or using the app.
5. As a customer, I want to link one or more vehicles to Smart Parking System account through mobile app.
6. As a customer, I want to pay for parking via credit card, debit card, or mobile payment platforms securely.
7. As a customer, I want the system to charge me based on the duration of parking and type of space.
8. As a customer, I want the system to automatically charge me extra if a parking session exceeds the prepaid time.

Admin User Story

1. As an admin, I want to know which parking spaces are occupied with vehicles in real time.
2. As an admin, I want the system to calculate the charges based on the time, type of space and the set rate.
3. As an admin, I want to alter the set rate of the parking spaces based on different circumstances.
4. As an admin, I want to access the parking history of the vehicle.
5. As an admin, I want to view report on parking space utilisation.
6. As an admin, I want to know the revenue generated from all the parking sessions.
7. As an admin, I want to know the parking violations of vehicles parked in unauthorised spaces.

Entities Identified Thorugh User Story

1. **Customer**
2. **Vehicle**
3. **ParkingSpaces**
4. **ParkingSpot**
5. **SensorData**
6. **ParkingSession**
7. **Payment**
8. **Pricing**
9. **Admin**

ADMIN CLASS WILL NOT BE CONSIDERED AS IT MAKES THE MODEL CLUTTERED WITHOUT ADDING SIGNIFICANT VALUE. ALL THE OPERATIONS THAT ADMIN NEEDS TO PERFORMA CAN BE DONE VIA QUERIES AND JOINS TO DB.