Design Document

Smart Parking

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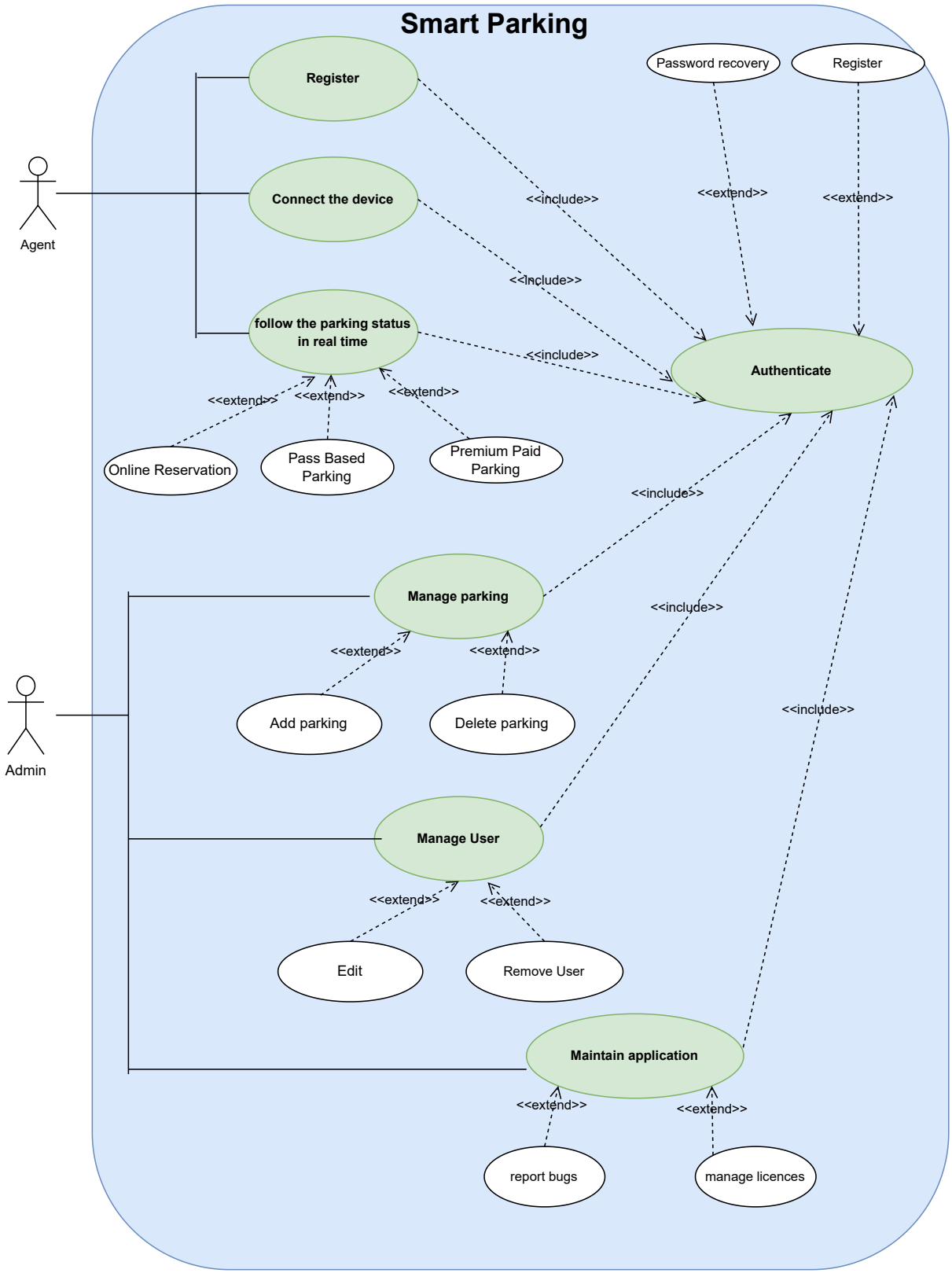
Use Case diagram


Smart Parking
Register
Password recovery
Register
Agent
Connect the device
<<include>>
<<extend>>
<<extend>>
<<include>>
follow the parking status in real time
<<include>>
Authenticate
<<extend>>
<<extend>>
<<extend>>
Online Reservation
Pass Based Parking
Premium Paid Parking
<<include>>
Manage parking
<<include>>
<<extend>>
<<extend>>
Admin
Add parking
Delete parking
<<include>>
Manage User
<<extend>>
<<extend>>
Edit
Remove User
Maintain application
<<extend>>
<<extend>>
report bugs
manage licences

Class Diagram

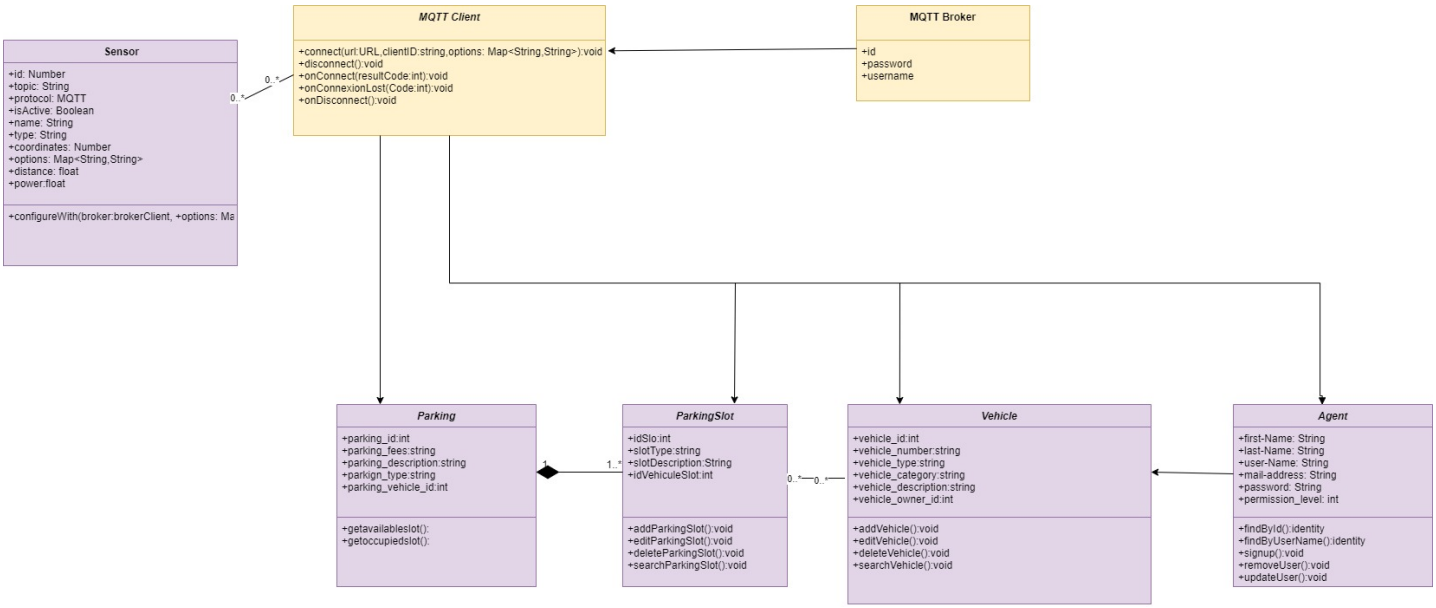
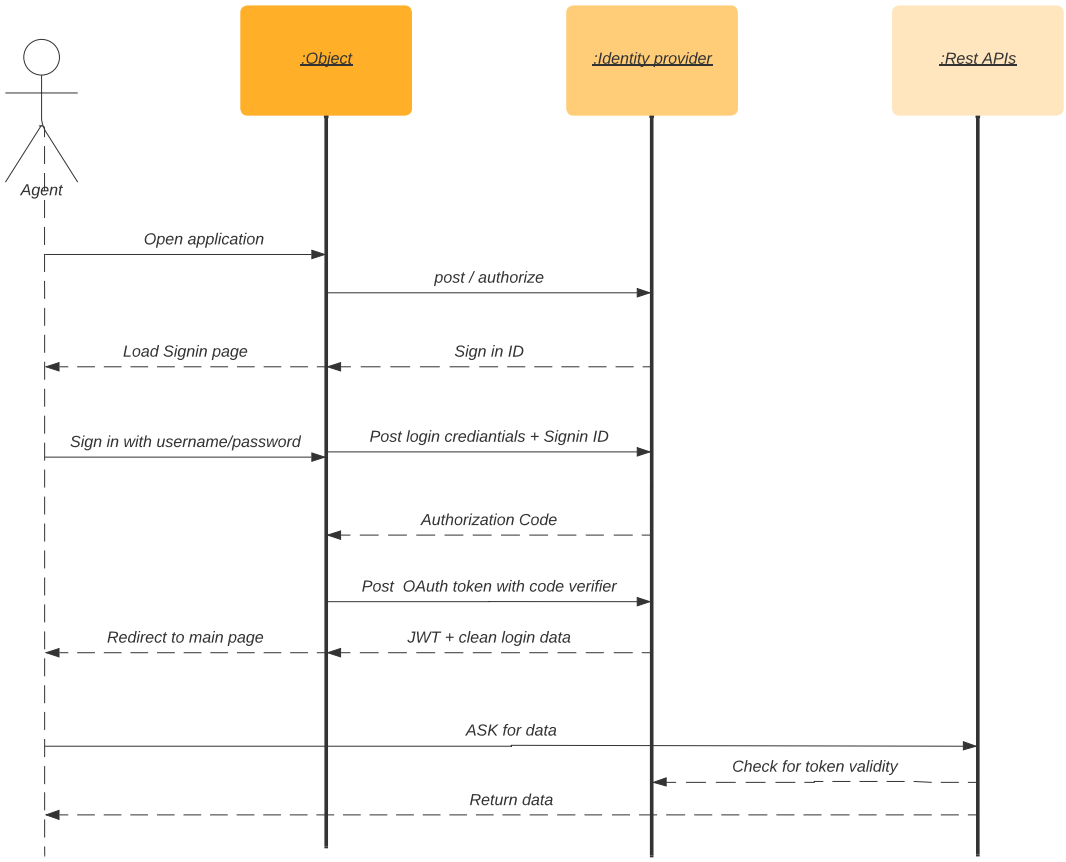

Sensor
+id: Number
+topic: String
+protocol: MQTT
+isActive: Boolean
+name: String
+type: String
+coordinates: Number
+options: Map<String,String>
+distance: float
+power:float
+configureWith(broker:brokerClient, +options: Ma
0..*
0..*
MQTT Client
+connect(url:URL,clientID:string,options: Map<String,String>):void
+disconnect():void
+onConnect(resultCode:int):void
+onConnexionLost(Code:int):void
+onDisconnect():void
MQTT Broker
+id
+password
+username
Parking
+parking_id:int
+parking_fees:string
+parking_description:string
+parkign_type:string
+parking_vehicle_id:int
+getavailableslot():
+getoccupiedslot():
1
1..*
ParkingSlot
+idSlo:int
+slotType:string
+slotDescription:String
+idVehiculeSlot:int
+addParkingSlot():void
+editParkingSlot():void
+deleteParkingSlot():void
+searchParkingSlot():void
0..*
0..*
Vehicle
+vehicle_id:int
+vehicle_number:string
+vehicle_type:string
+vehicle_category:string
+vehicle_description:string
+vehicle_owner_id:int
+addVehicle():void
+editVehicle():void
+deleteVehicle():void
+searchVehicle():void
Agent
+first-Name: String
+last-Name: String
+user-Name: String
+mail-address: String
+password: String
+permission_level: int
+findById():identity
+findByUserName():identity
+signup():void
+removeUser():void
+updateUser():void

Diagram of sequences



Sequence diagram OAuth2 PKCE

Deployment diagram

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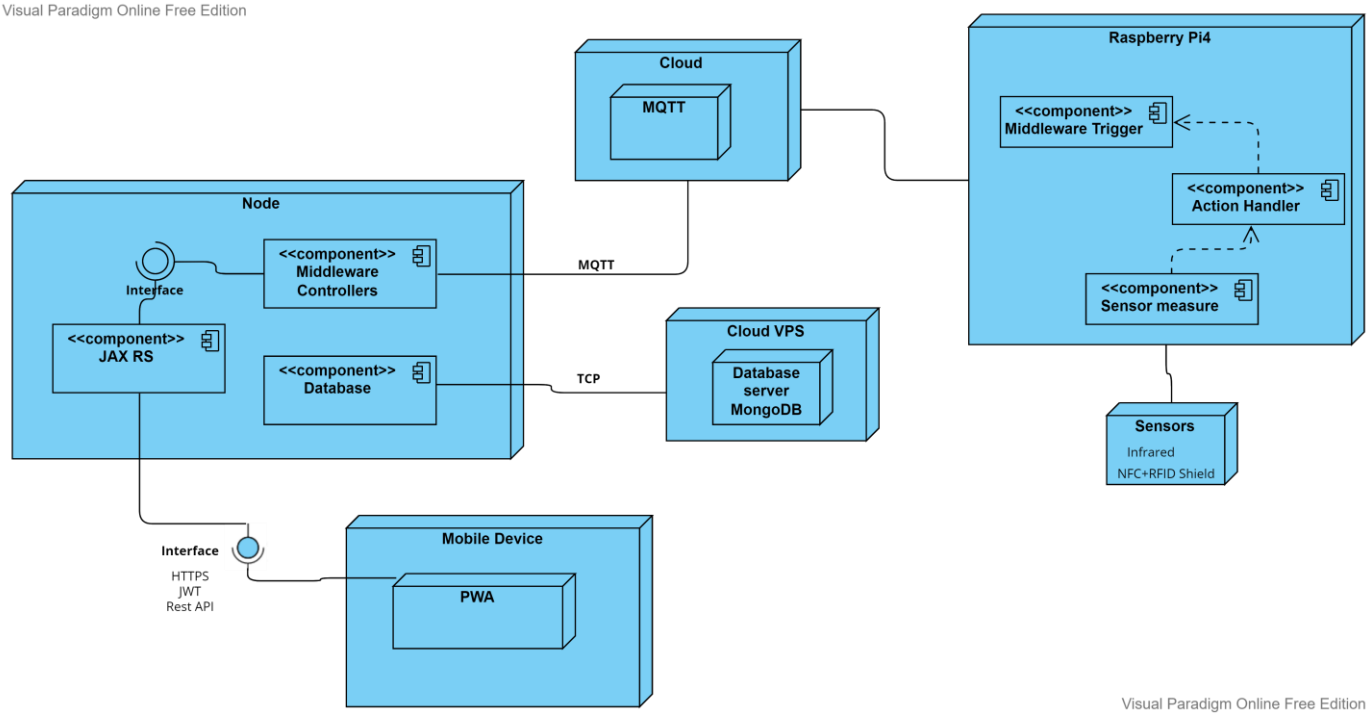

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