Gokhale Education Society's
R.H.Sapat College of Engineering ,Management Studies & Research ,
Nashik 422005

Department of Computer Engineering

Subject: ES&IOT (310252)
Class: T.E. Computer
Division: A
Semester: VI
Faculty: Mr. S. R. Lahane

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Problem Statement:

9: Write the process and Design, Smart Car Parking System (SCPS) for Apartment.
Rubrics: Each step 1M (Strictly follow the steps involve in IoT system design)

Solution:

STEP-1: PURPOSE & REQUIREMENTS

PURPOSE:

The main purpose of the smart car parking system is to reduce problems such as reduction in the traffic congestion at heavily occupied area.The prime objective is to provide the user friendly environment to park a vehicle.

BEHAVIOUR:

It can include in-ground Smart Parking sensors, cameras or counting sensors. It is an ideal solution to show unoccupied parking spaces and guide parkers to quickly park in no time. The proposed system is used to indicate the user about the vacancy of the parking slots.

System Management Requirements:

System should remotely provide monitoring and control functions.

Data Analysis Requirements :

System should perform local analysis of data with on-street parking monitoring.

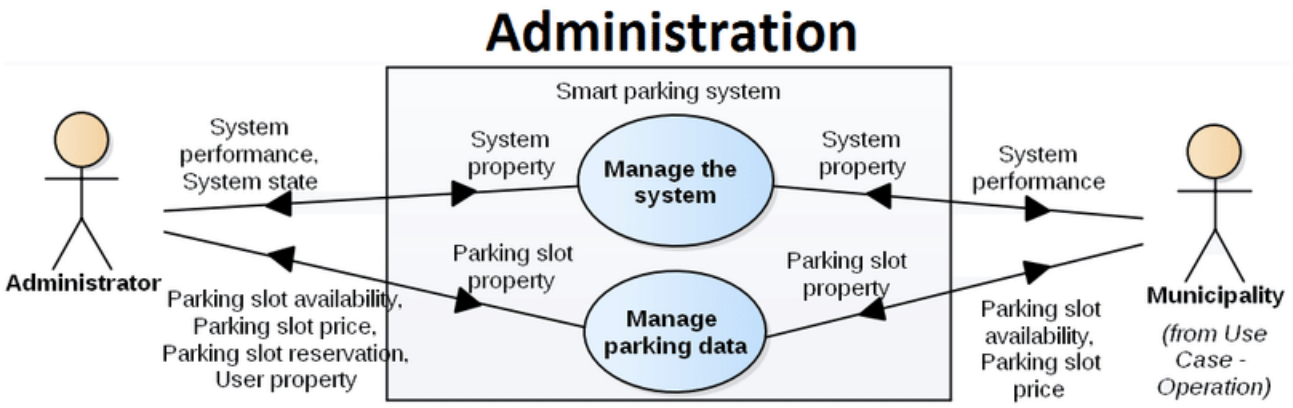
Application Deployment Requirement:

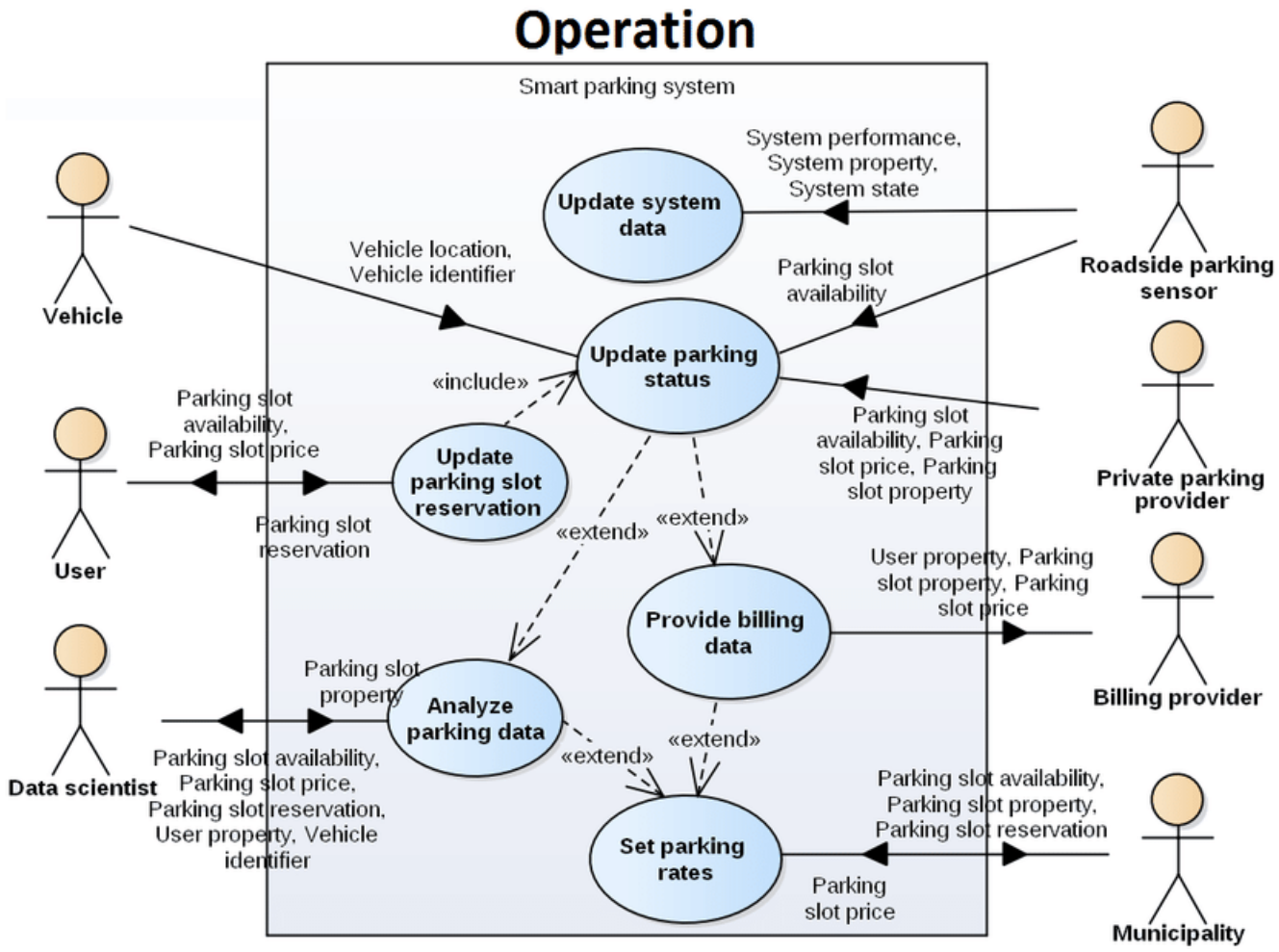
The application is deployed locally on the device and can be accessible from anywhere but acts remotely without manual intervention..

Security:

User Authentication must be provided to use the system.

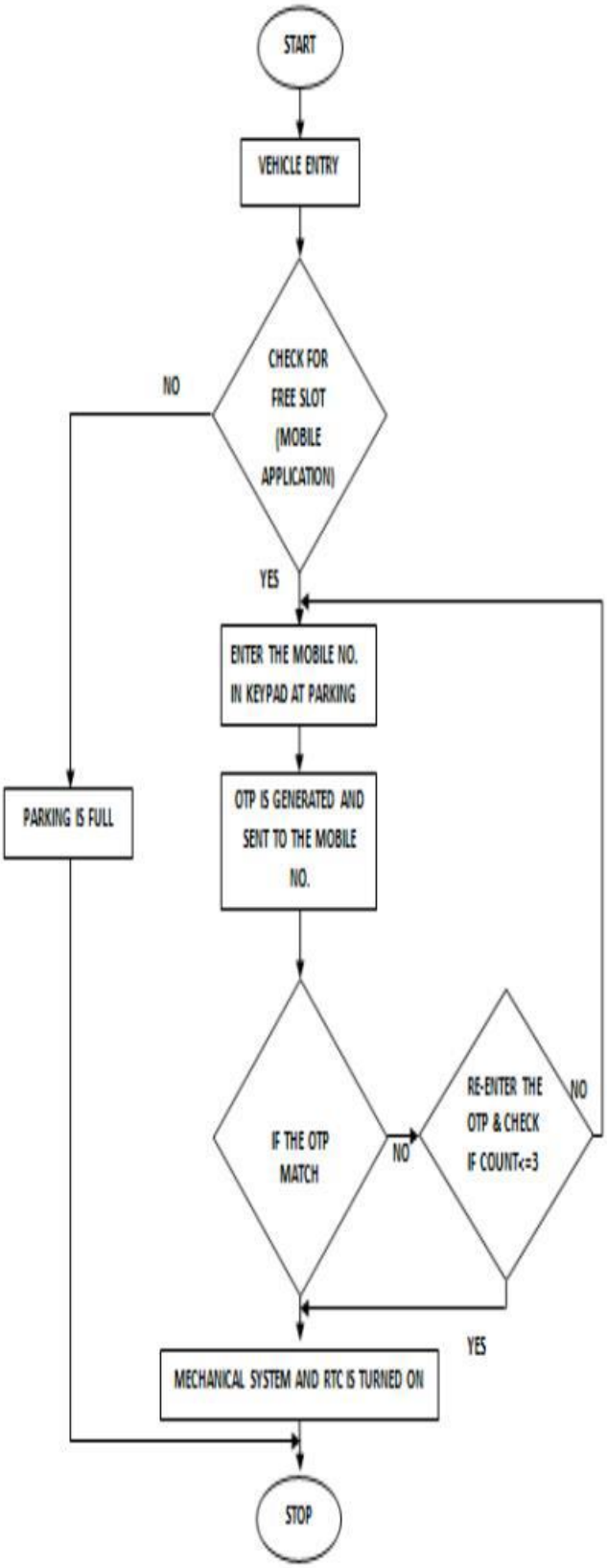
Step-2: PROCESS MODEL SPECIFICATION:





Step-3: Domain Level Specification

Entrance:



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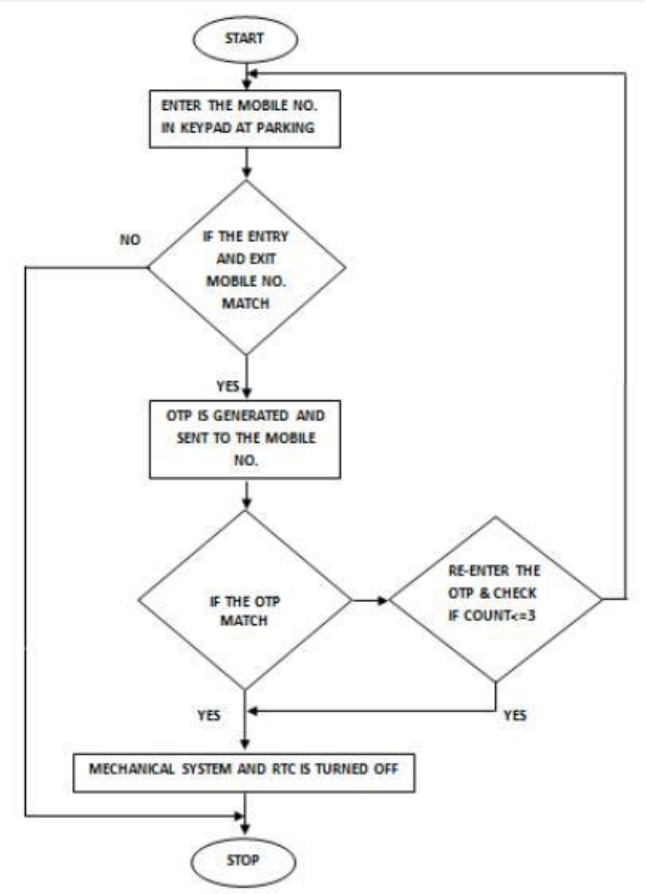
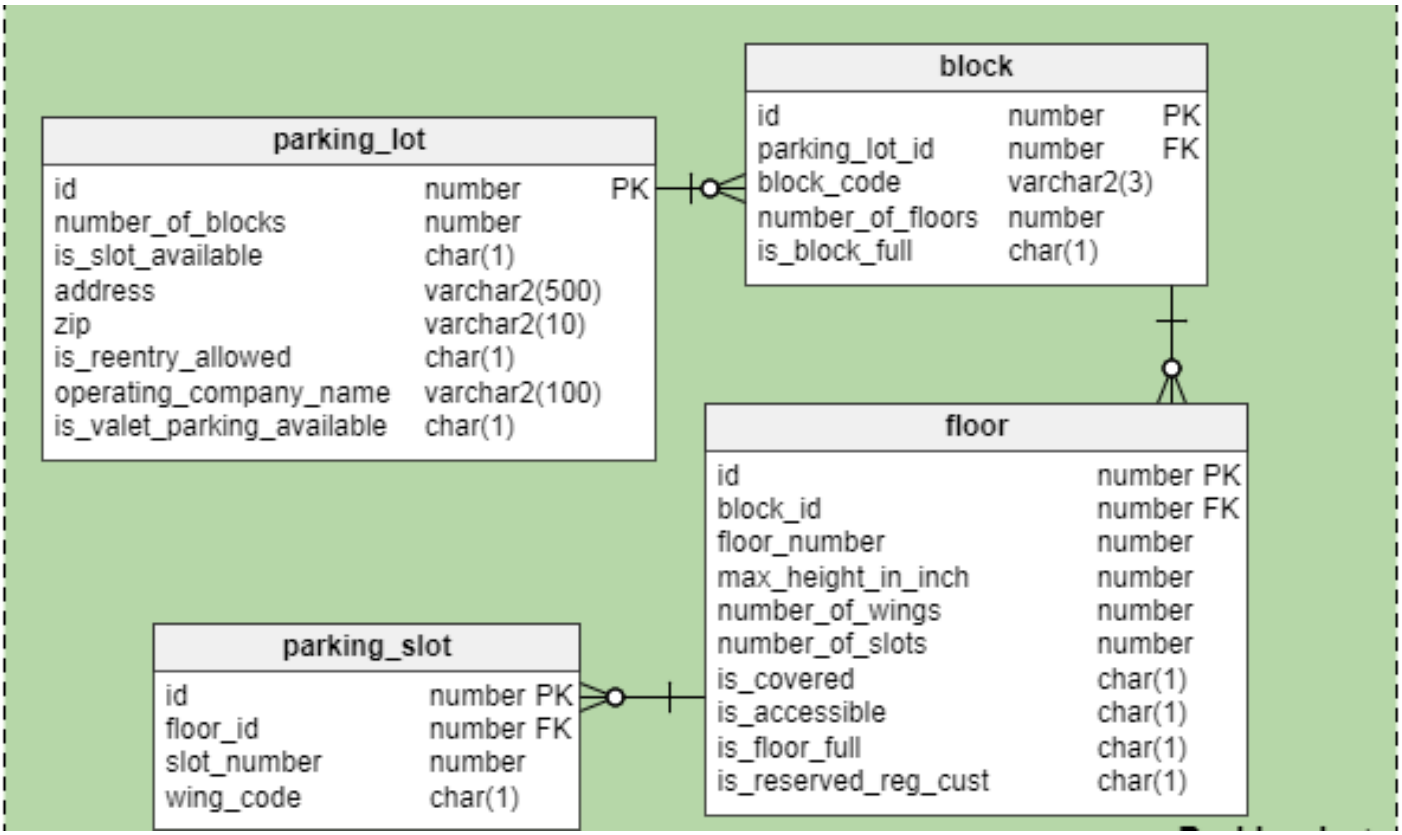
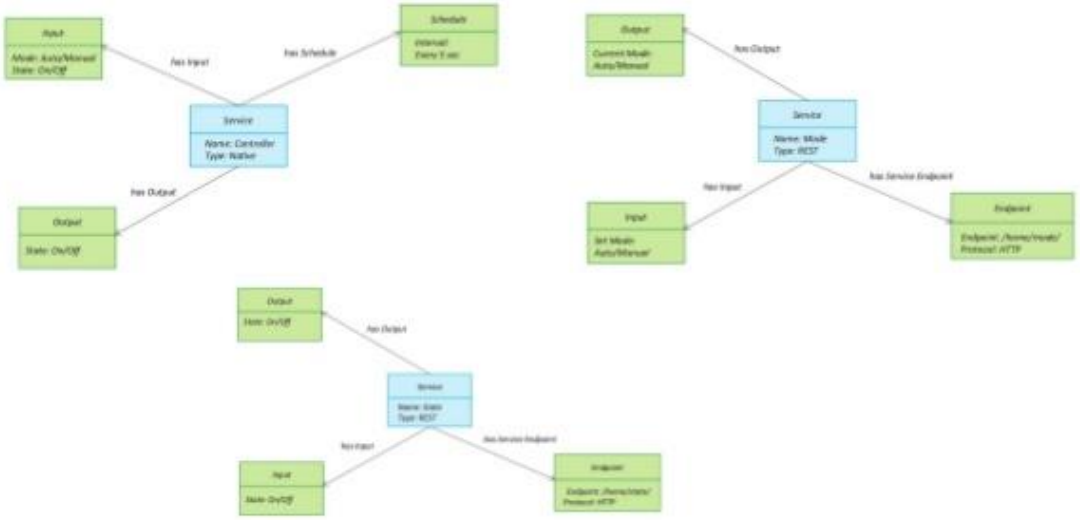


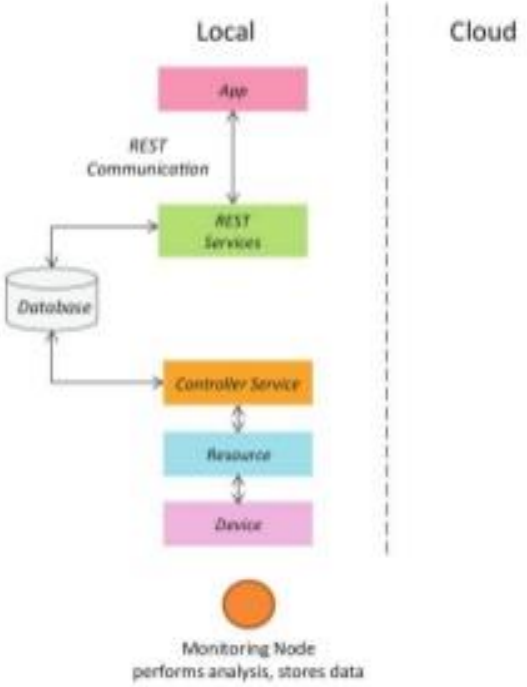
STEP-4: INFORMATION MODEL SPECIFICATION



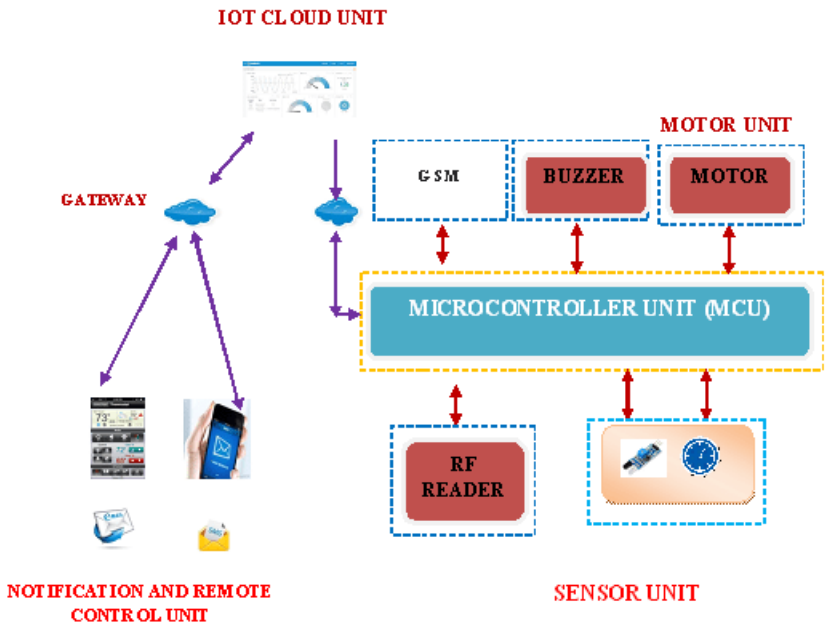
Step 5: Service Specifications



Step 6: IoT Level Specification



Step-7: Functional View Specification



Step-8: Operational View Specification

Application:

- Web App : PhP WebApp
- Application Server : Google App engine
- Database Server : MySQL

Services:

- Native : Controller Service
- Web : REST

Communication:

- Communication APIs : REST SPIs
- Communication Protocol : ▪ Link Layer: 802.11

▪ N/w : IPV6

▪ Transport : TCP

▪ Application : HTTP

Management:

• Device Management: Arduino device management

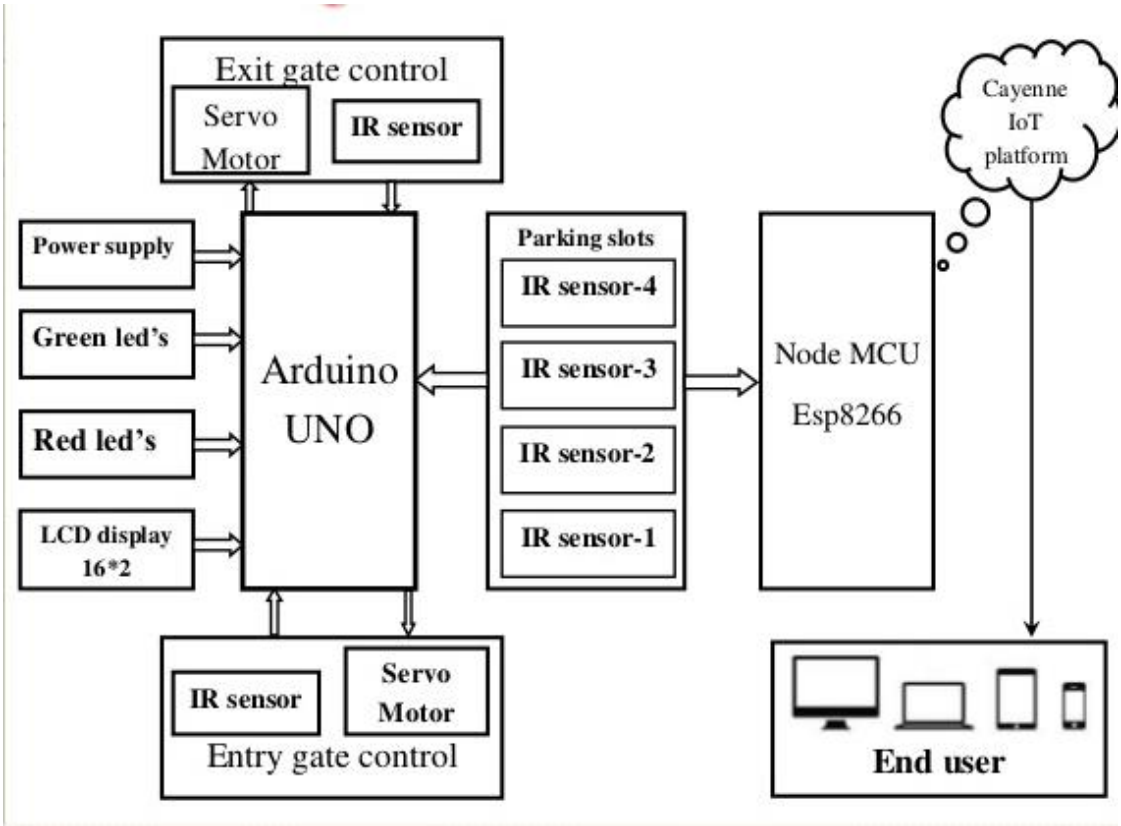
• Application Management : PHP App Management

• Database Management: MySQL Db Mgmt

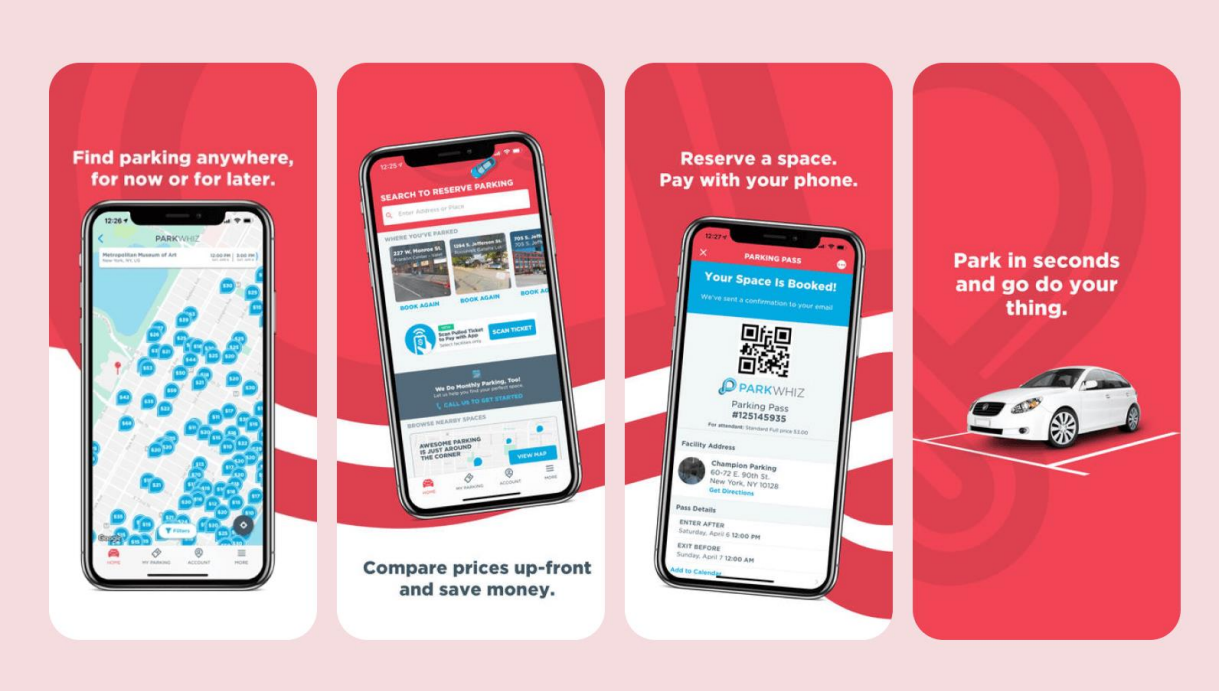
Security:

• Login Management

Step- 9 : Device and Component Integration



Step-10: Application development



Conclusion:

The project focuses on implementation of car parking place detection using IOT. The system benefits of smart parking go well beyond avoiding time wasting. It also solves pollution problems.