ONLINE PARKING SYSTEM

END TERM REPORT

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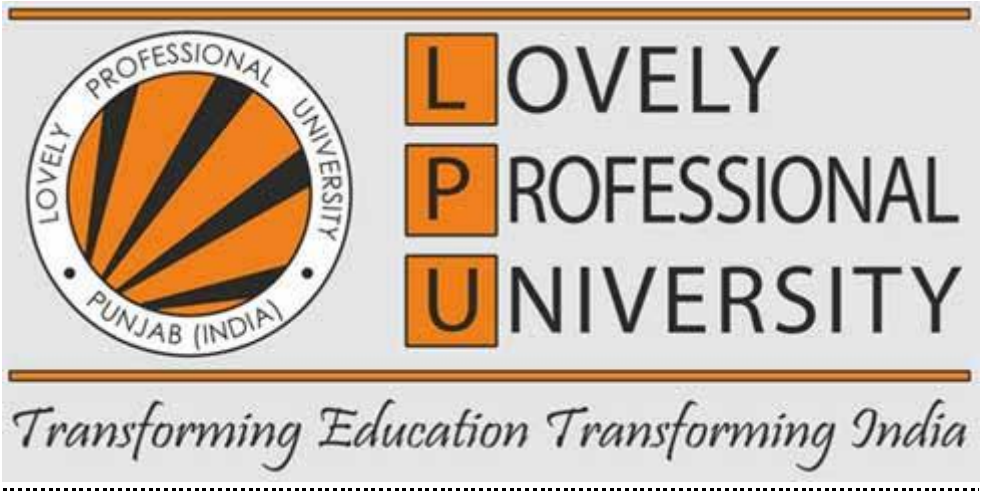

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Objectives of the project

Artificial intelligence based smart parking systems can analyse data such as vehicular traffic, vehicle type, peak hour timings and frequency to predict future trends and provide a seamless parking experience over time.

Smart parking system plays a significant role in saving fuel too as the vehicles can be guided directly to the vacant parking space compared to the current scenario where a visitor has to search for a parking space suited to his needs.

Need for Artificial Intelligence – Based Smart Parking :

- It uses hardware and software to analyse and measure parking vacancy.
- It can be helpful for efficient management of parking systems saving time and avoid congestion.
- Ai based smart parking system can transform the parking industry with advancement in technology.

Project Description :

- This project is beneficial mostly for car parking areas in the public places, most of the places in the cities and public places are facing a big issue regarding with the vehicle parking system.
- This project could be helpful to the various public places as the complete process gets automated through implementing various techniques and devices.
- The central controlling team will be having the governance to the whole unit through sensors and tracking devices.
- As being completely automated system, it does not require any kind of human surveillance. The software system allows the vehicles to allot the vacant parking slot and it displays all the occupied and vacant parking slots in the whole parking area.
- The central controlling system has overall rights over the system and can moderate the entire signals to the parking slots if something happens wrong by some technical issues. The system handles entirely the allotment of parking slots by knowing the Occupied and vacant slots.
- Also, the system displays total parking slots, occupied parking slots and available parking slots along with the respective charges.
- The best part about the system is that it automatically keeps track of the vehicles got entered into the parking slots and is able to auto generate the receipt with charges to the customer according to the time with respect to the charges

Motivation:

- The increase in city traffic is one of the major effects of population growth especially in urban areas.
- Due to this searching for a vacant parking area during peak hours is not only time consuming but also results in wastage in fuel.
- The drivers keep on searching for suitable parking slot which leads to increase in traffic and wastage of fuel.
- Increasing vehicular volume exhaust creates a negative impact on environment.
- Hence reservation-based- smart parking has become the need of the day.
- The Main motivation is to reduce the fuel, reduce impacts on environment, time saving for drivers, reduce the unwanted traffic, avoid congestion, etc.

Outcome of the Project:

- The Online parking system hence improves the whole vehicle parking as well as traffic issues making it easier for the vehicle owners not to disturb the entire vehicles in the traffic by having proper parking slots with the smart management system.
- Online Parking system helps to reduce fuel consumption, saves time, avoid increase in traffic, avoid congestion.
- Online Parking system is created.
- Users ca create accounts on the system through registration.
- System Administrator can manage the Clients by creating the account.
- Clients are able to book the parking slot for the user.
- Users can view parking available and reserve parking slot online.
- System Administrator can manage the parking slot, transaction.

Concrete Goals and Objective:

- Utilization of vehicles has expanded in today's world. The accessibility for parking slots has created heavy traffic, congestion, wastage in fuel and difficulty to plot the parking slot.
- The primary purpose to avoid this difficulty and reduce the traffic.
- There will be no need of a person for guidance to the vehicle parking lots, its arrangement and surveillance. Customers will come to know themselves about the parking slots.
- The software system automatically detects the vacant or occupied slots and then assigns the vacant slot to the customer at its entrance.
- Providing an online system for parking vehicles.
- Online system allows to choose parking slots.
- Reduce traffic increase in peak hours.
- Avoid Congestion.

Description:

MODULES:
This system comprises of 8 Modules

1. Admin login
2. User Registration and Login
3. View Parking Slots (Nearby or User Specific)

4. Parking Booking Online
5. Automatic Cost Calculation
6. Parking Cancellation
7. Email Sent on Successful Parking
8. Feedback

Descriptions of Modules:

1. Admin Login

The system allows admin to login and manage the web application and perform various tasks as follows:

a. Add Slots (With Google Maps to Plot location)
b. View Booking
c. View Feedback
d. View User

2. User Registration and Login

To access the system, the user needs to first register themselves by providing required details and may continue with login.

3. View Parking Slots (Nearby or User Specific)

The user can click on spaces to view the availability. If space is already booked it will be marked yellow and the available ones will be seen in normal colour.

4. Parking Booking Online

The users can book parking space for them required date and time.

5. Automatic Cost Calculation

The system calculates the total cost incurred for parking based on the time that user has asked for booking.

6. Parking Cancellation

The user may even cancel their bookings by login into the system anytime.

7. Email on Successful Parking Booking

When the user is successful in parking the space, the system sends a confirmation and 'thank you' email regarding the space booked.

8. Feedback

The system has a feedback form, where the user can provide feedback into the system.

Benefits of the System:

- ♣ Users can get to learn about parking areas for particular locations.
- ♣ It saves the user's time for search the parking space availability in a huge parking area.
- ♣ The application provides a graphical view of the parking spaces.

- ♣ The user can pay an online for the parking slot and confirm their space.
- ♣ It doesn't need much of human efforts for managing the parking spaces.
- ♣ The system generates an online bill for requested time and sends an email.
- ♣ This system is Cost-effective.

Functionalities of the Project:

These are the functionality performed by the admin users:

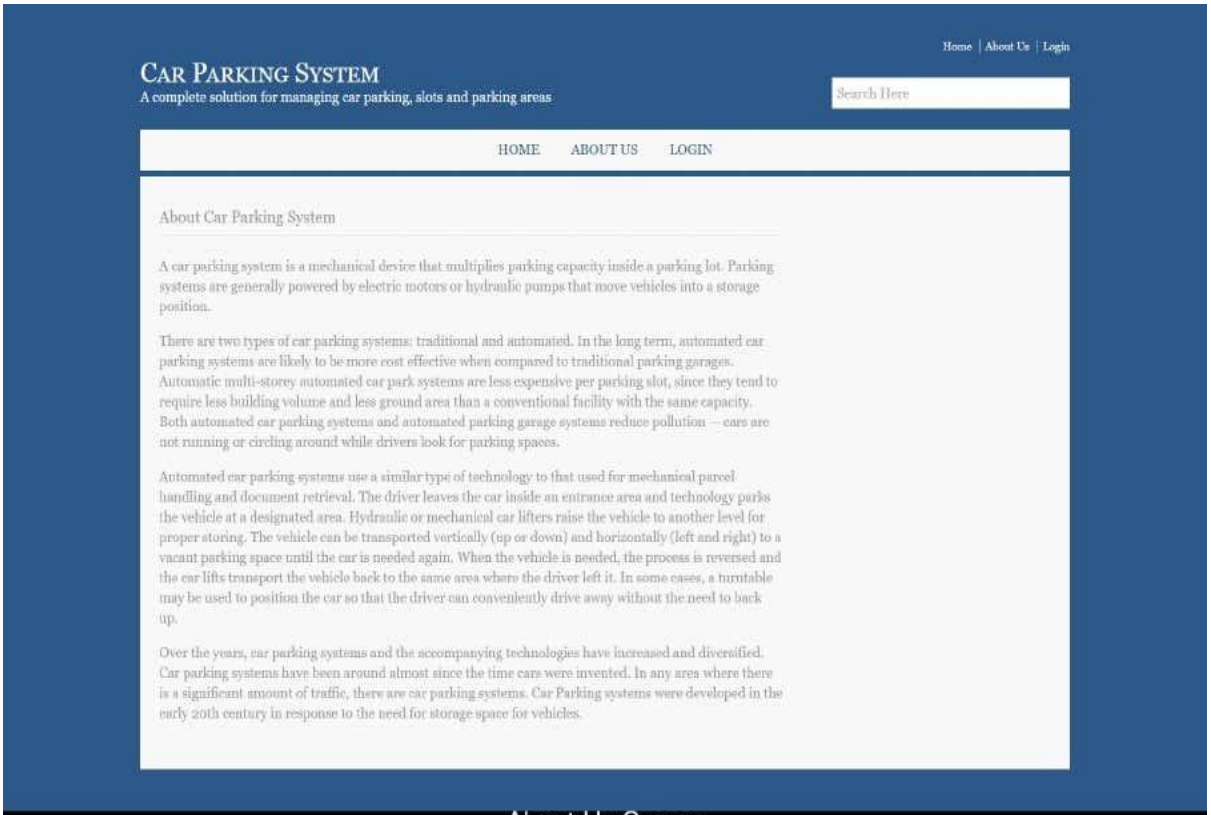
- Manage Parking Spaces
- Manage Parking Slots
- Manage Assign Parking Spaces for Vehicles
- Manage System User
- Manage Parking
- Manage Vehicle in Parking
- Manage Space

  For All the above-mentioned functionalities will have functions like Added, Edited, View Details, Listing All.
- **Report of the Online Parking system**
  - All Parking Spaces
  - All Parking Slots
  - All Assign Parking Spaces for Vehicles
  - All System Users
  - All Parking
  - All Vehicles in Paring
  - All Spaces.

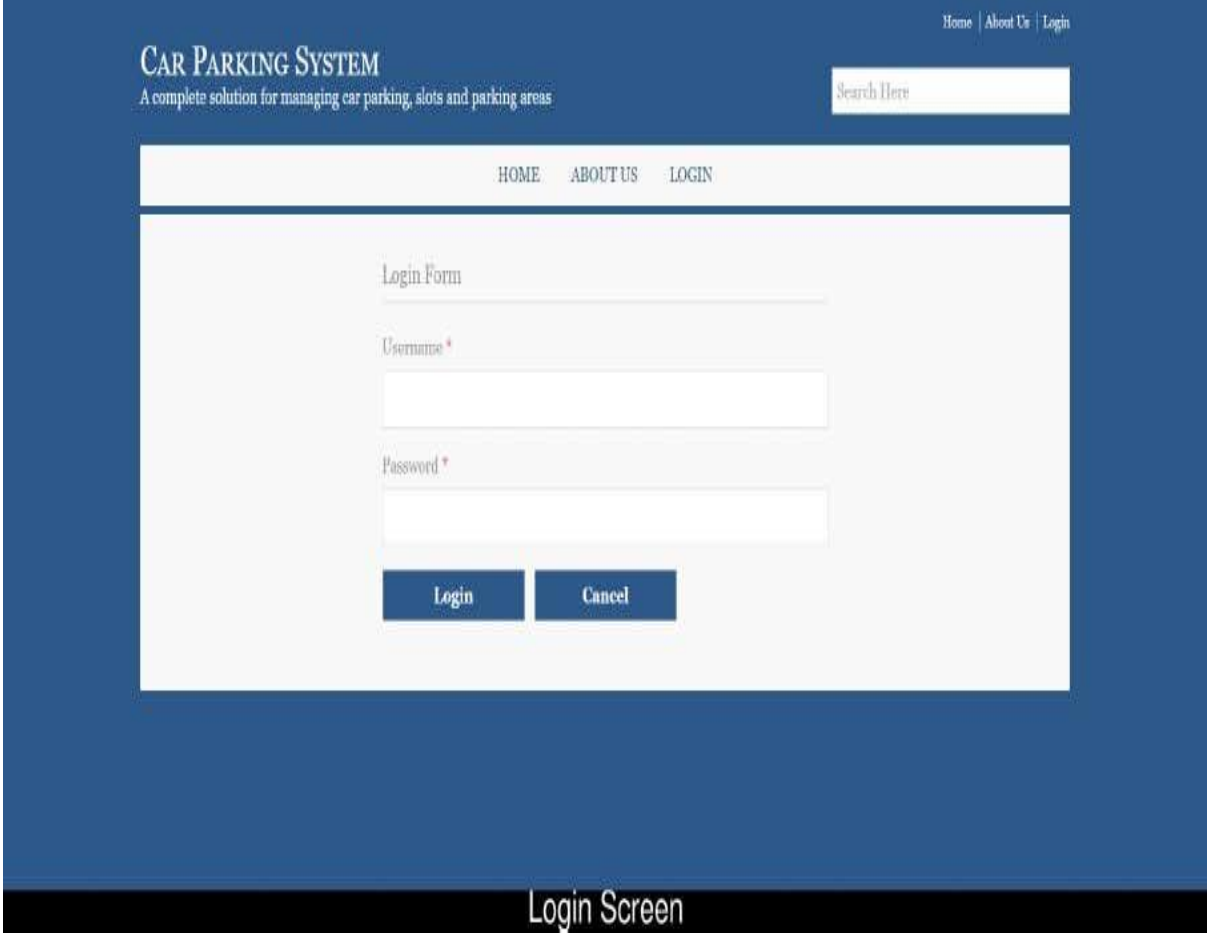
Implementation:

Home Page Screen

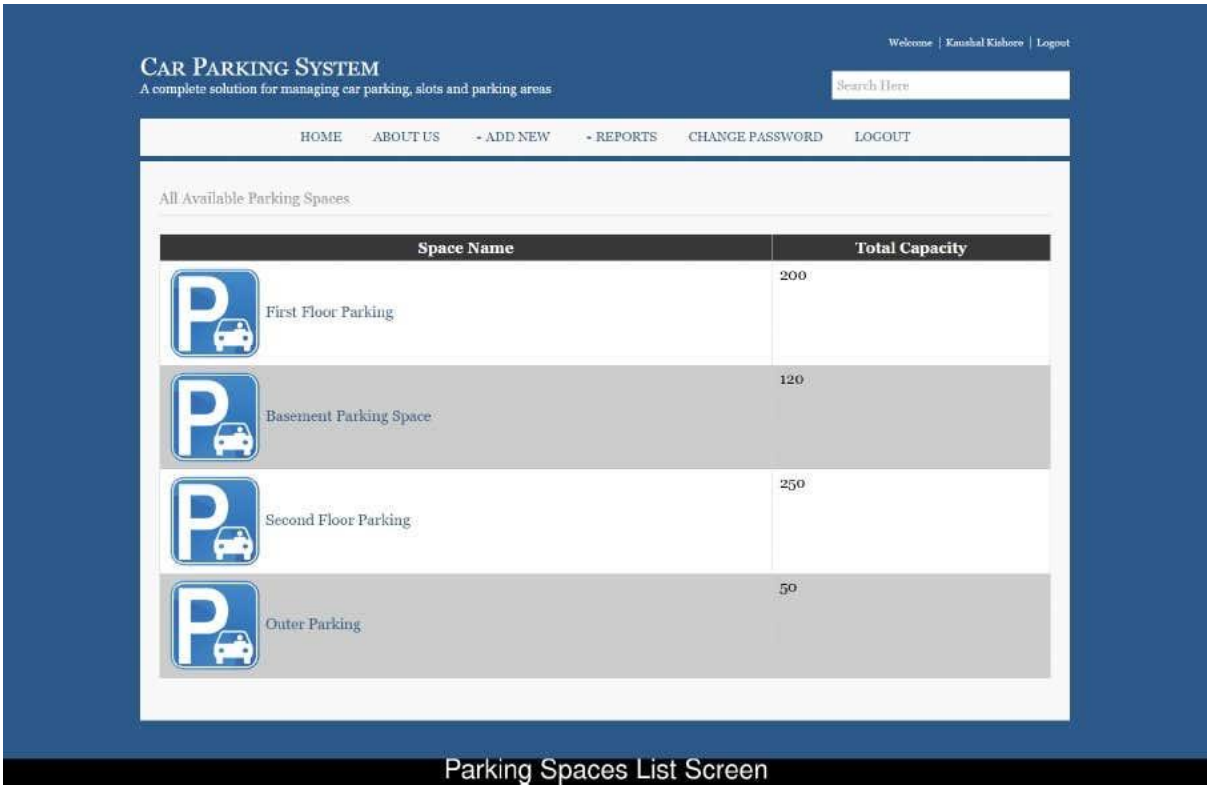
Slider Page Screen



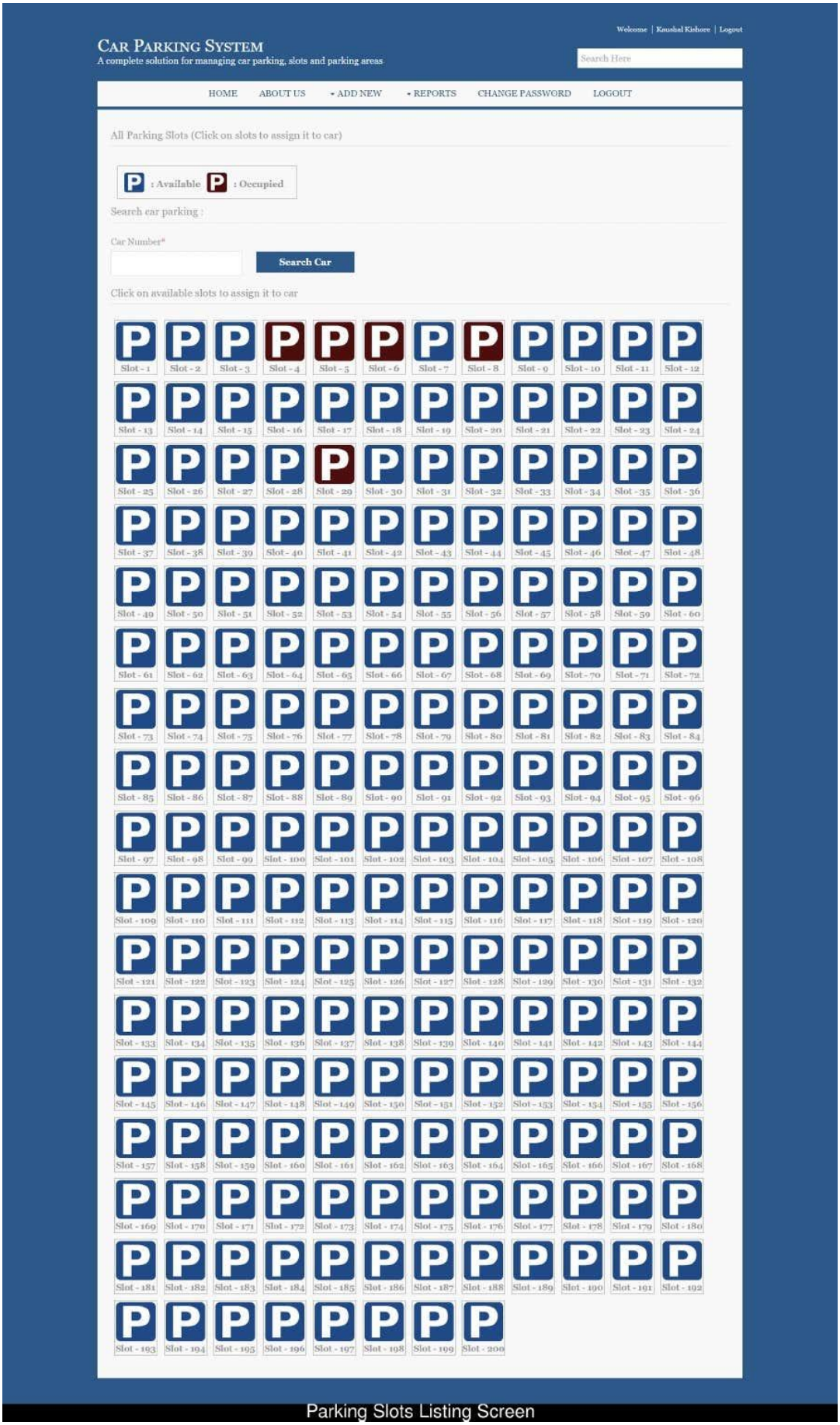
About Us Screen



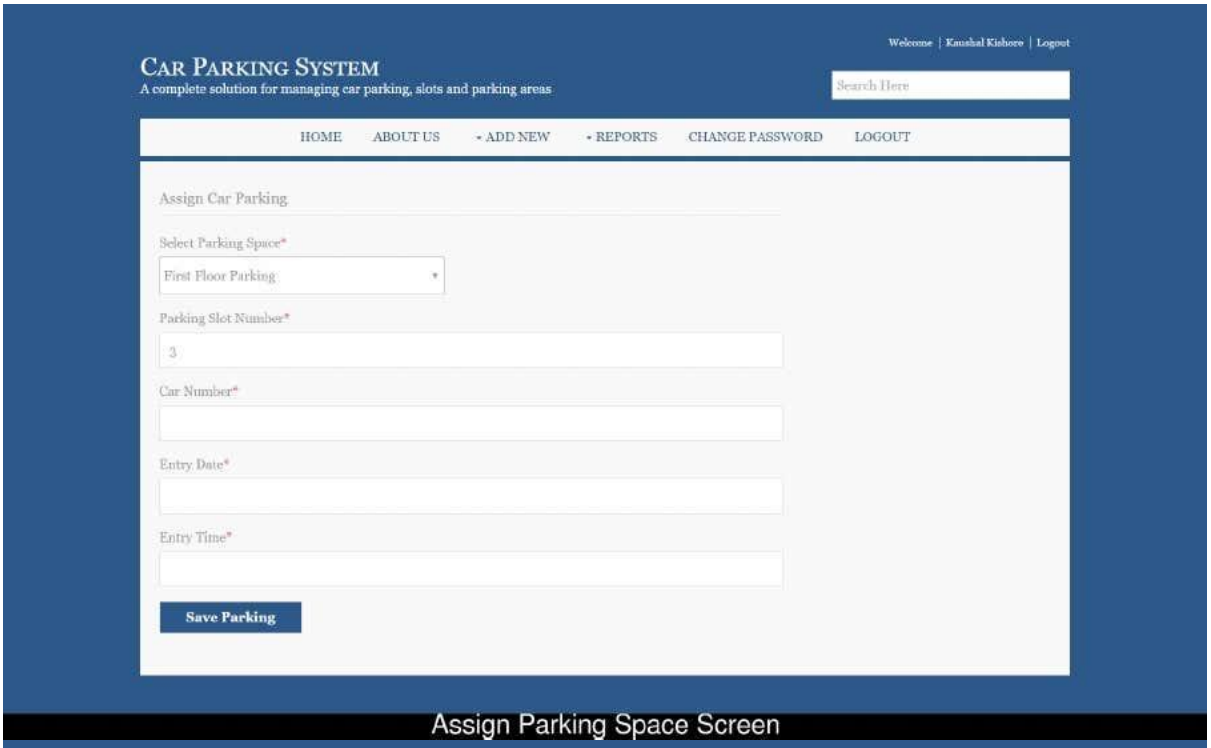
Login Screen



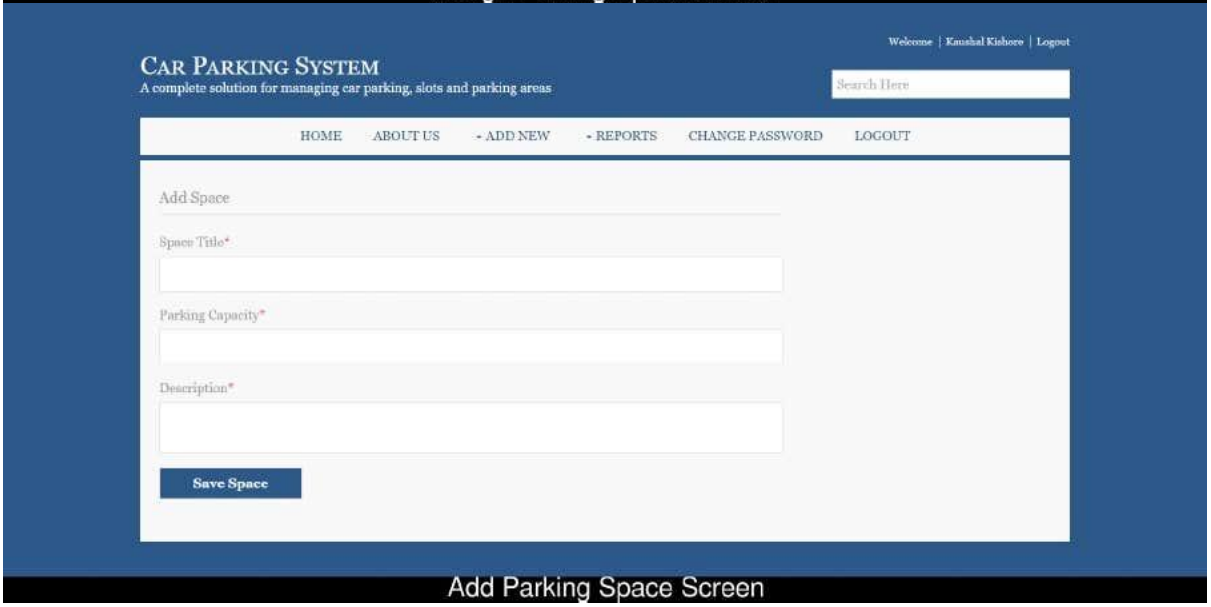
Parking Spaces List Screen



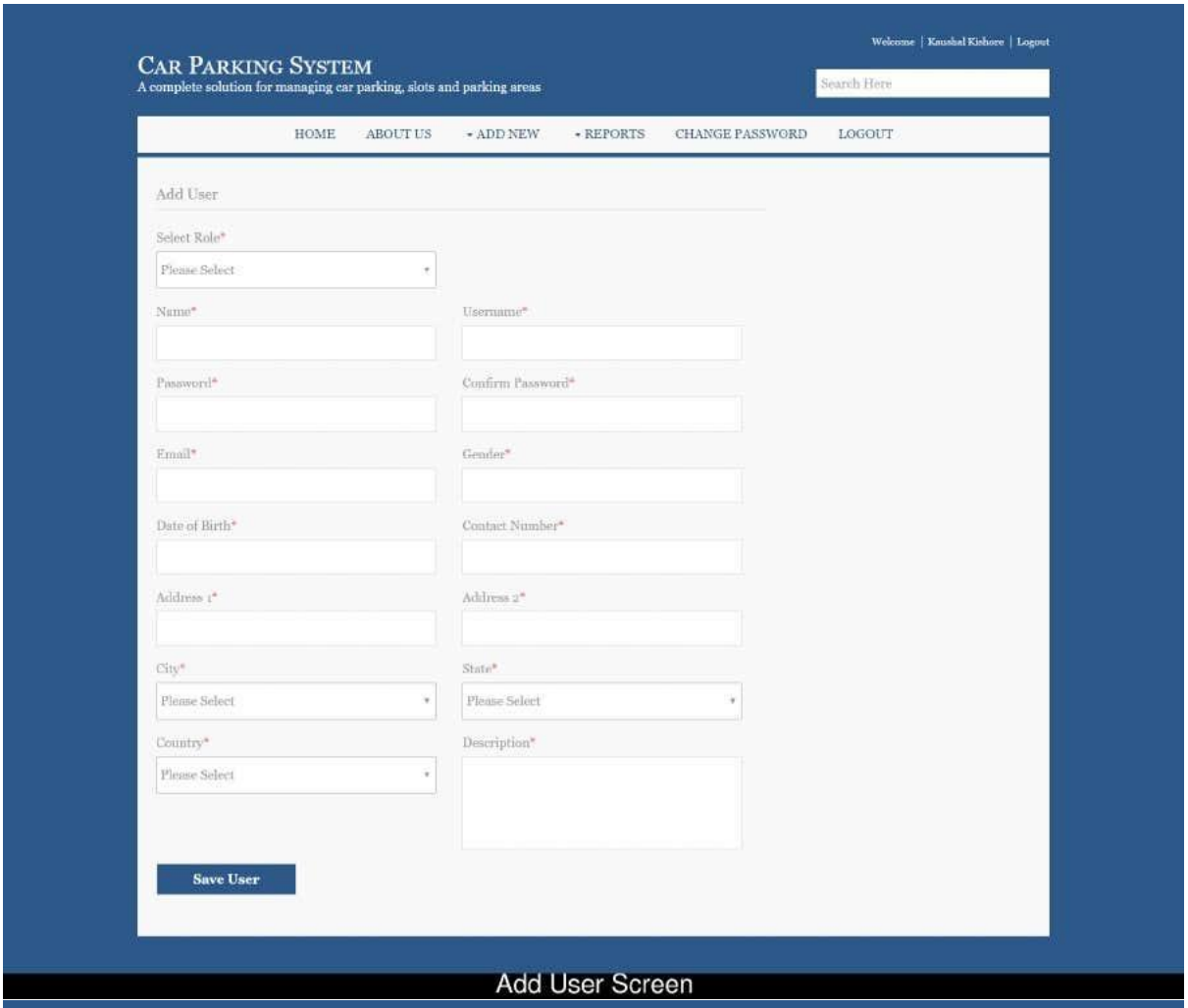
Parking Slots Listing Screen



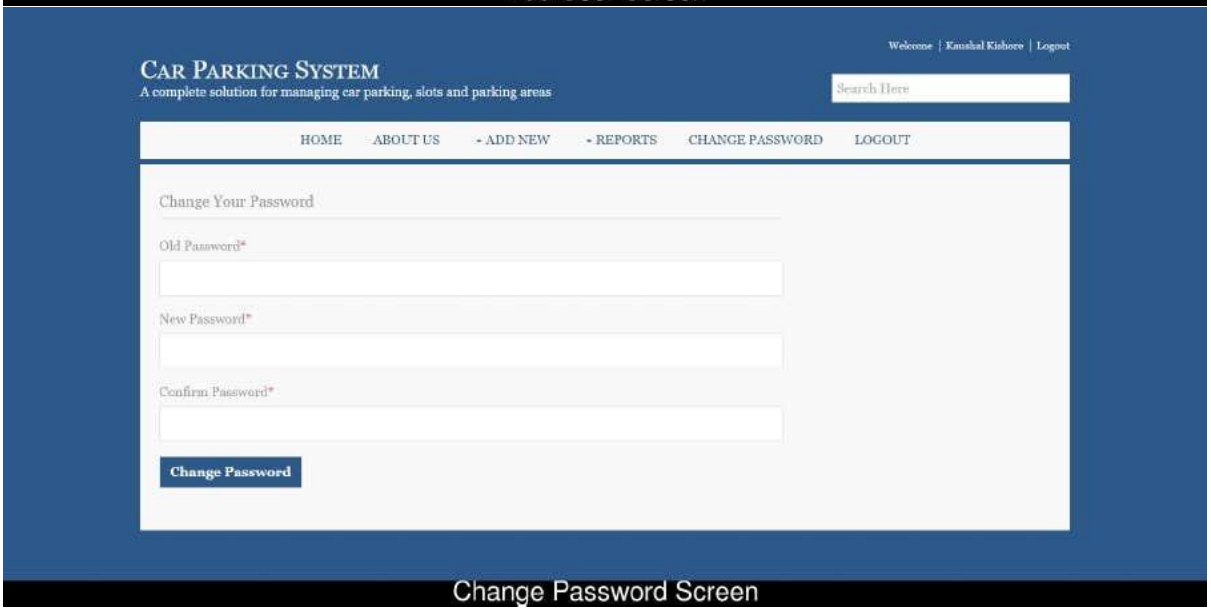
Assign Parking Space Screen



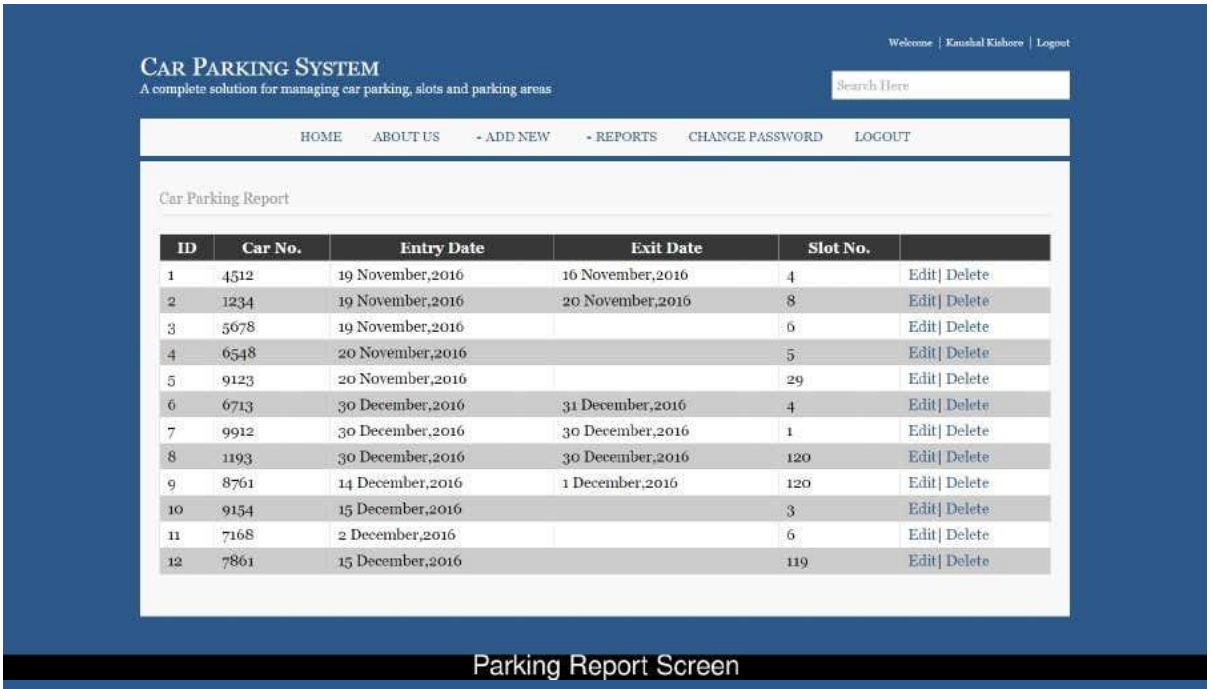
Add Parking Space Screen



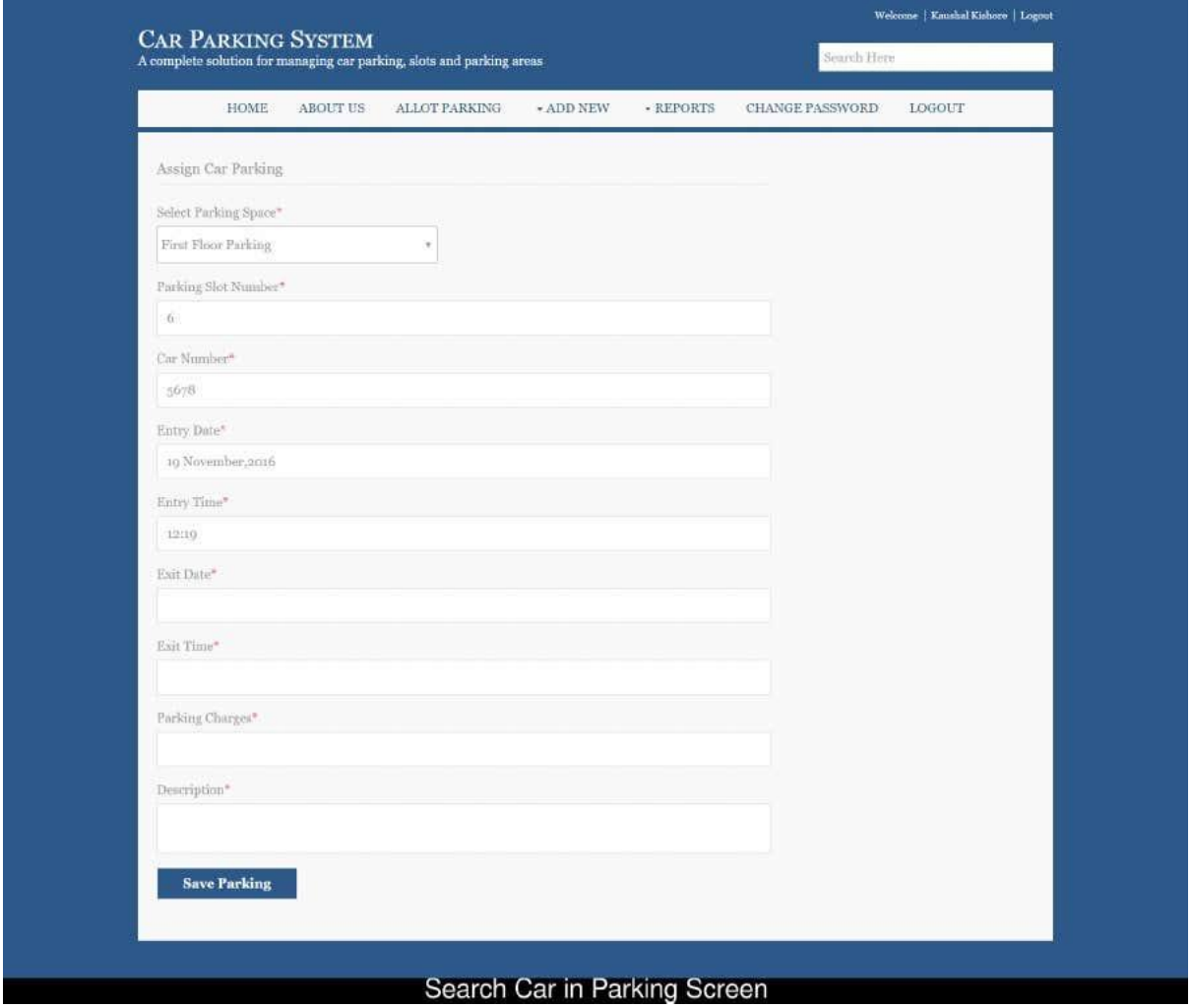
Add User Screen



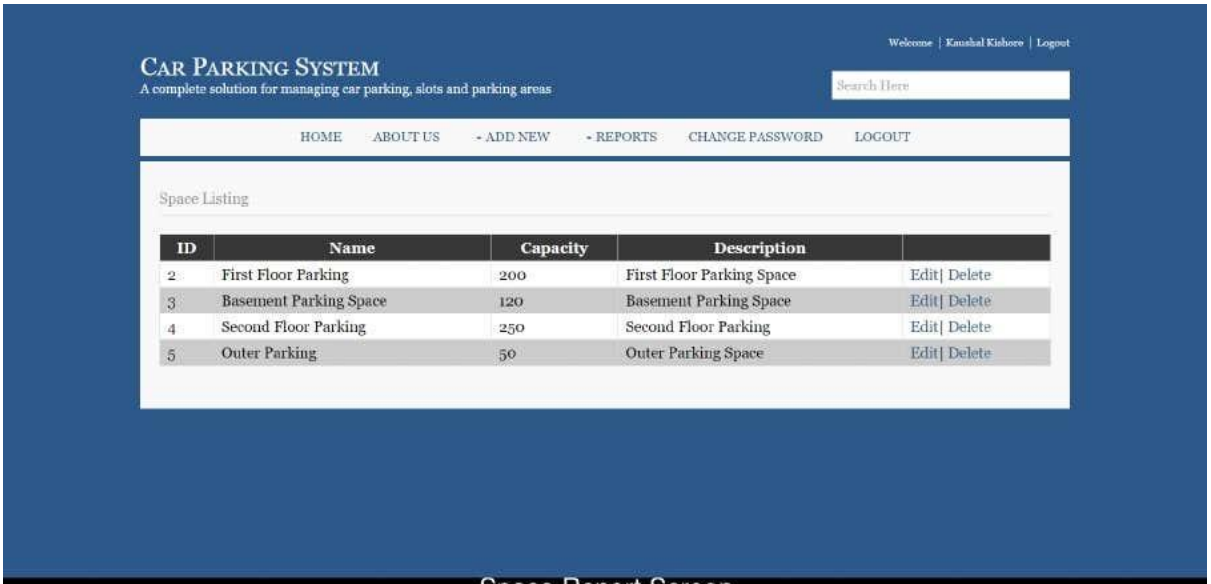
Change Password Screen



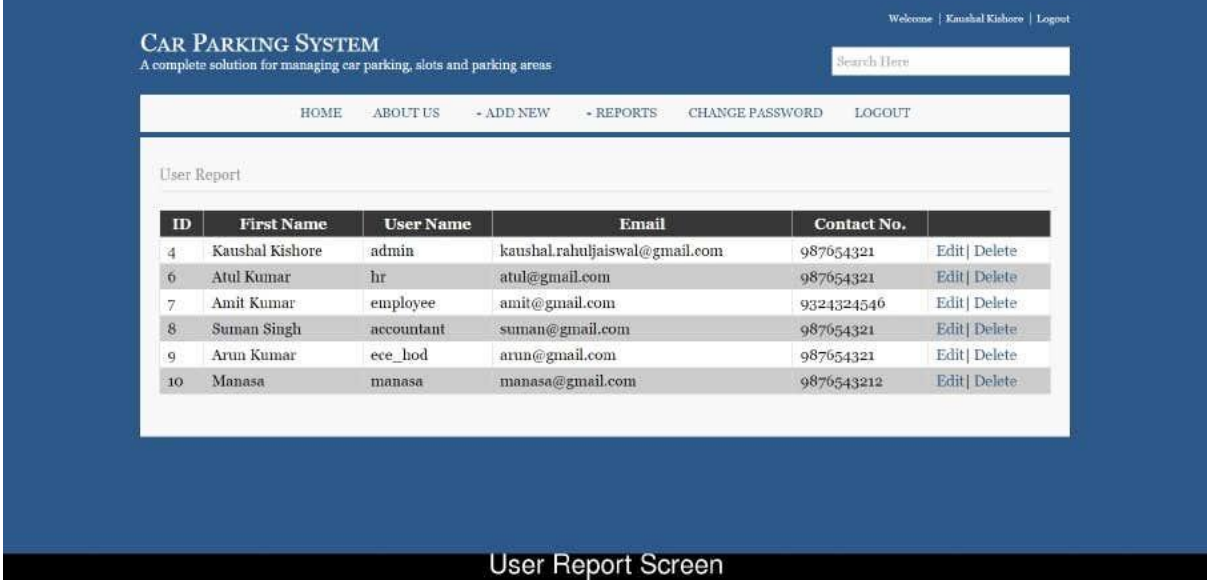
Parking Report Screen



Search Car in Parking Screen



Space Report Screen



User Report Screen

Technologies and frame work used:

HTML:

Page Layout has been designed in HTML.

CSS:

CSS has been used for all designing part and styling part.

JavaScript:

All the validation task and animations has been developed by JavaScript.

ASP:

All the front-end logic has been written in ASP.

C#:

All the business logic has been written in C#.

MySQL:

MySQL database has been used as database for the project.

Visual Studio 2015:

Project will be run over the Visual Studio 2015 Server.

Swot Analysis achieved in the project:

Strengths:

- Unique Service webpage.
- Can be scaled up nationally and globally.
- Innovative webpage that will make finding a parking slot quick, cheap and easy.
- Has no competitor's in the local/community/city.
- Relatively cheap service webpage.
- Trial Version will allow users to know if they want to use the service.

Weaknesses:

- Inexperienced management and clients.
- High cost start-up and promotion.
- High chance of malfunctions, glitches or bugs.
- Not everyone can use this service as it is available to limited places only.

Opportunities:

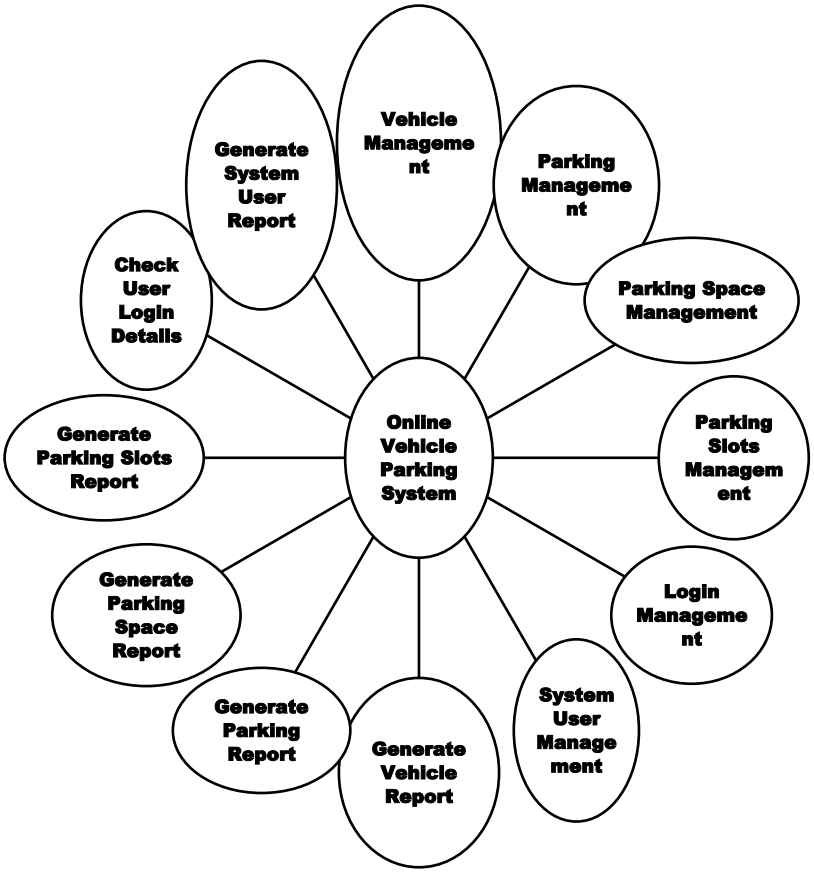
- Expand nationally and internationally.
- Implement social media to help and promote the service.
- In App and wen advertising (Major revenue source).
- Establish a good and reliable service app and improve it as much as possible.
- Population Growth leading to more vehicles and hence is most useful service.

Threats:

- Limited financial funding for start-up costs and launch of app.
- New competitors are likely to provide same service in other cities.
- Government and ACCC regulations.
- Lobbying groups influencing consumer perceptions.
- Parking space availability.
- System crashes/ Server issues solution.

- ZERO LEVEL Online Vehicle Parking System DFD

- FIRST LEVEL Online Vehicle Parking System DFD



- **SECOND LEVEL Online Vehicle Parking System DFD**