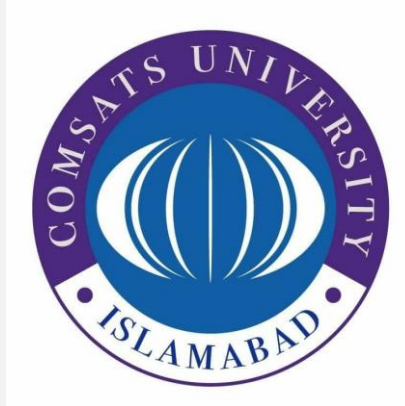


**COMSATS University Islamabad**

**Abbottabad Campus**

**Department of Computer Sciences**



**Database Systems 1**

**Lab Final**

**Submitted by**

**Zafar Ullah Khan (FA20-BCS-113)**

**Muhammad Awais Khan (FA20-BCS-120)**

**Submitted to**

**Sir Ahsan Khan**

# PARKING MANAGEMENT SYSTEM PROJECT

PREPARED FOR  
COMSATS UNIVERSITY ISLAMABAD  
ABBOTTABAD CAMPUS

PREPARED BY  
M AWAIS KHAN  
ZAFAR ULLAH KHAN  
1 AUGUST 2022

## Table of Contents

|                                   |    |
|-----------------------------------|----|
| Abstract .....                    | 4  |
| Introduction .....                | 4  |
| Tools.....                        | 5  |
| Modules.....                      | 5  |
| Database Connectively.....        | 6  |
| Entity Relationship diagram ..... | 9  |
| Project Interface .....           | 11 |

## Abstract

“PARKING MANAGEMENT SYSTEM” is software developed for managing various activities in the parking lot. This project deals with the problems on managing a Parking lot and avoids the problems which occur when carried manually. Identification of the drawbacks of the existing system leads to the designing of computerized system that will be compatible to the existing system with the system which is more user friendly and more GUI oriented. We can improve the efficiency of the system, thus overcome the drawbacks of the existing system.

## Introduction

Parking Management system is MVC-based web application. Parking management system is software for managing the records of the incoming and outgoing vehicles in an parking house It's an easy for Admin to retrieve the data if the vehicle has been visited through number he can get that data. Now days in many public places such as malls, universities, hospitals, offices, market areas there is a crucial problem of vehicle parking. The vehicle parking area has many lanes/slots for car parking. So, to park a vehicle one must look for all the lanes. Parking control system has been generated in such a way that it is filled with many secure devices such as, parking control gates, toll gates, time and attendance machine, car counting system etc. This system that will track the entry and exit of cars, maintain a listing of cars within the parking lot, and determine if the parking lot is full or not. It will determine the cost of per vehicle according to their time consumption.

## Tools

Parking Management system is MVC-based web application. We have used Following technologies:

**Frontend:** HTML & CSS

**Database Connectivity:** JAVA ( Thymeleaf ) & Hibernate for URL Mapping

**Database:** SQL

We have Star UML for Entity Relationship Diagram (ERD)

**Table 1: Tools and Technologies for PMS**

| <b>Tools<br/>And<br/>Technologies</b> | <b>Tools</b>      | <b>Version</b> | <b>Rationale</b>     |
|---------------------------------------|-------------------|----------------|----------------------|
|                                       | Spring Tool Suit  | 4              | IDE                  |
|                                       | My SQL workbench  | 2022           | DBMS                 |
|                                       | Start UML         | 2022           | ERD                  |
|                                       | MS Word           | 365            | Documentation        |
|                                       | <b>Technology</b> | <b>Version</b> | <b>Rationale</b>     |
|                                       | Java              | JDK 17         | Programming language |
|                                       | HTML              | 5              | Web Language         |
|                                       | CSS               | 3              | Styling sheets       |
|                                       | SQL               | 2021           | Query Language       |

## Modules

PMS consists of two modules:

### **Admin:**

The admin can manage:

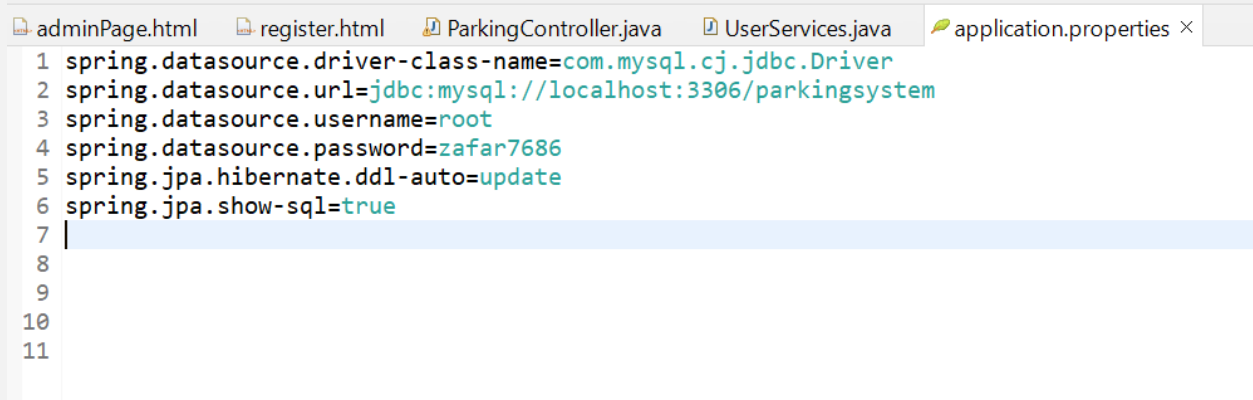
- Add new customer
- Edit Customer
- Edit Profile
- Add new Admin
- Add vehicle to Parking Lot
- Remove parked Vehicle record

### **User:**

This module was supposed to be made but we could not be able to make it due to time shortage and exams.

## Database Connectively

Connection for My SQL:

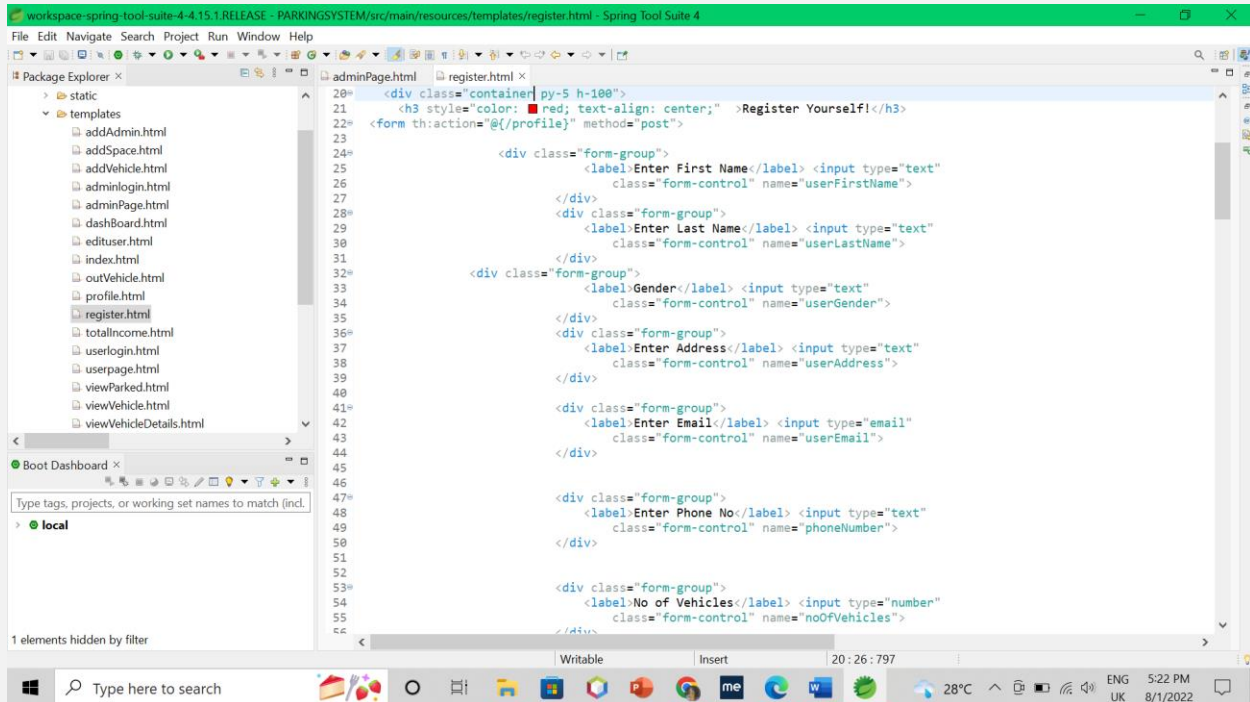


```
adminPage.html  register.html  ParkingController.java  UserServices.java  application.properties x
1 spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver
2 spring.datasource.url=jdbc:mysql://localhost:3306/parkingsystem
3 spring.datasource.username=root
4 spring.datasource.password=zafar7686
5 spring.jpa.hibernate.ddl-auto=update
6 spring.jpa.show-sql=true
7 |
8
9
10
11
```

JDBC and hibernate is used to connect to database.

The database connection is done by using Thymeleaf which based on JAVA.

## Insertion Of Data:



## Controller class:

```
}
@PostMapping("/register")
public String userRegister(@ModelAttribute UserInfo u, HttpSession session) {
    service.addUser(u);
    // System.out.println(u.getUserAddress());
    session.setAttribute("msg", "Registered Successfully!");
    return "redirect:/";
}
```

## Services Class:

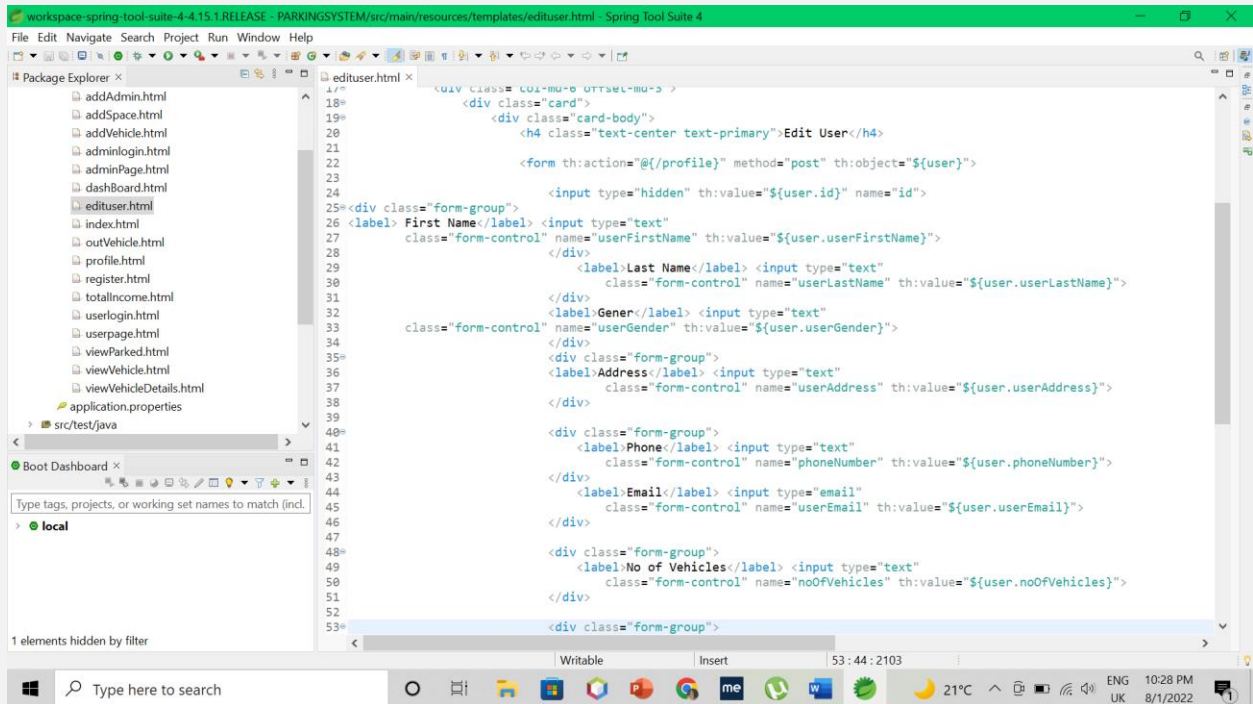
```
private VehicleRepo vr;

public void addUser(UserInfo u) {
    vr.save(u);
}
```

- When user information is entered:
- User information are passed to object of User Class
- In Service class data is stored to database using hibernate and then

- Profile page is fired

## Update connection:



## Controller class:

```

@GetMapping("/edituser/{id}")
public String updateUser(@PathVariable int id, Model m) {
    UserInfo e = service.getUserById(id);
    m.addAttribute("user", e);
    return "edituser";
}

@GetMapping("/profile/{id}")
public String deleteUser(@PathVariable int id, HttpSession session) {
    service.deleteUser(id);
    session.setAttribute("msg", "User Deleted Sucessfully..");
    return "redirect:/profile";
}

```



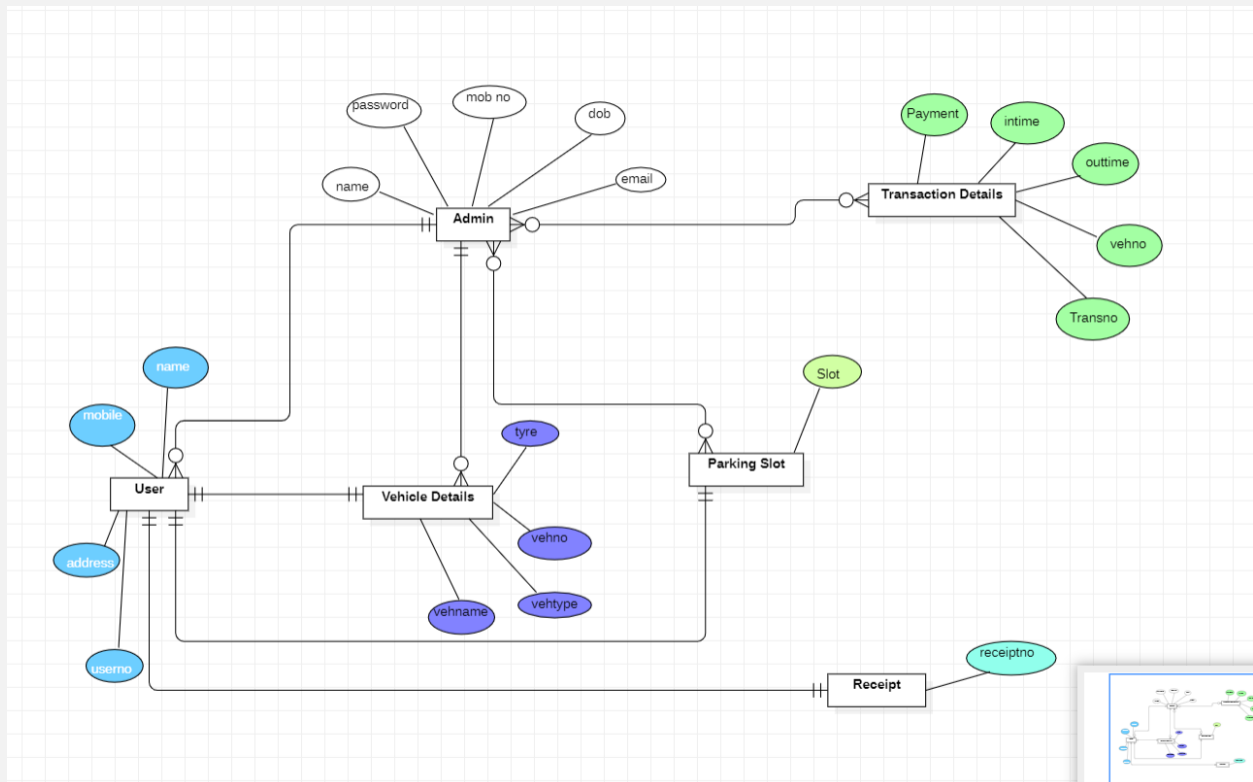
## Delete Connection:

Controller Class:

```
@GetMapping("/edituser/{id}")
public String updateUser(@PathVariable int id, Model m) {
    UserInfo e = service.getUserById(id);
    m.addAttribute("user", e);
    return "edituser";
}

@GetMapping("/profile/{id}")
public String deleteUser(@PathVariable int id, HttpSession session) {
    service.deleteUser(id);
    session.setAttribute("msg", "User Deleted Sucessfully..");
    return "redirect:/profile";
}
}
```

## Entity Relationship diagram



### Tables in Database:

- Admin (**adminid(int)**, username(varchar), password(varchar), name(varchar), **userid(int)**, **vehicleid(int)**)
- User (**userid**, Fname, Lname, username, password, noOfVehicles, **vehicleid**)
- Vehicle (**vehiclenumber**, type, name, model, **Parkingid**, **recipientid**)
- Parkinglot (**Parkinid**, parkingstrength, location)
- Recipient (**recipientno**, noOfamount)

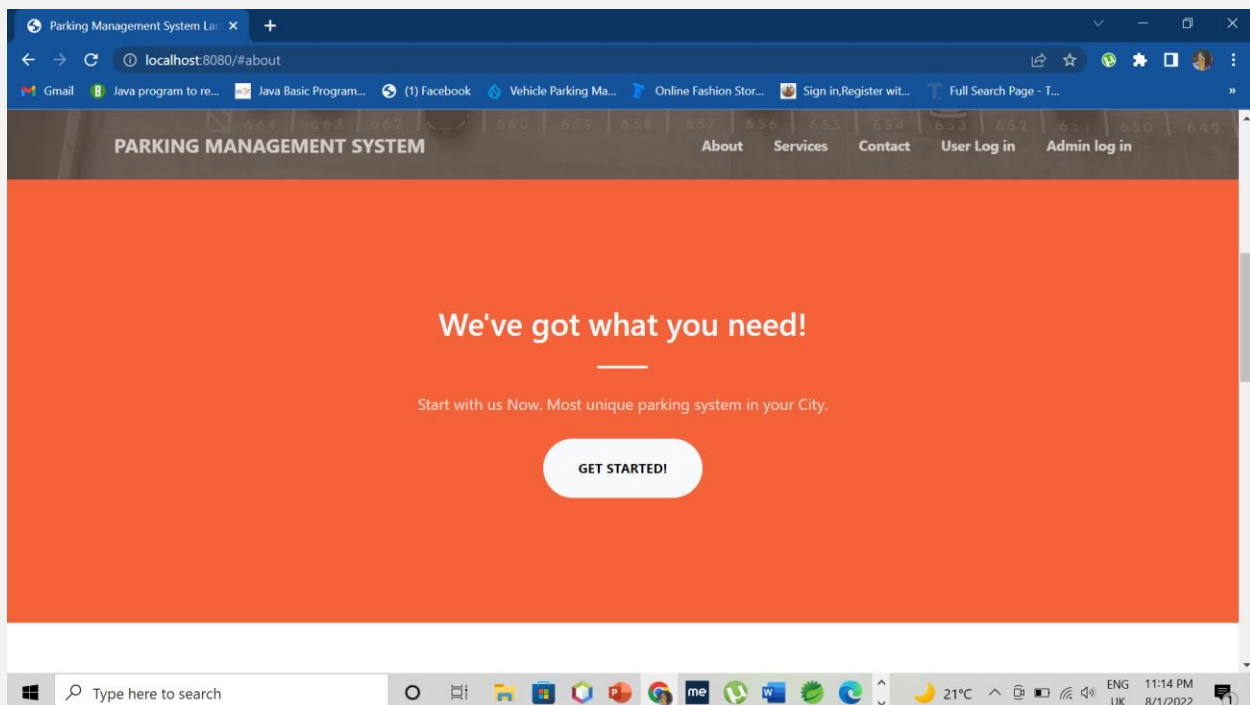
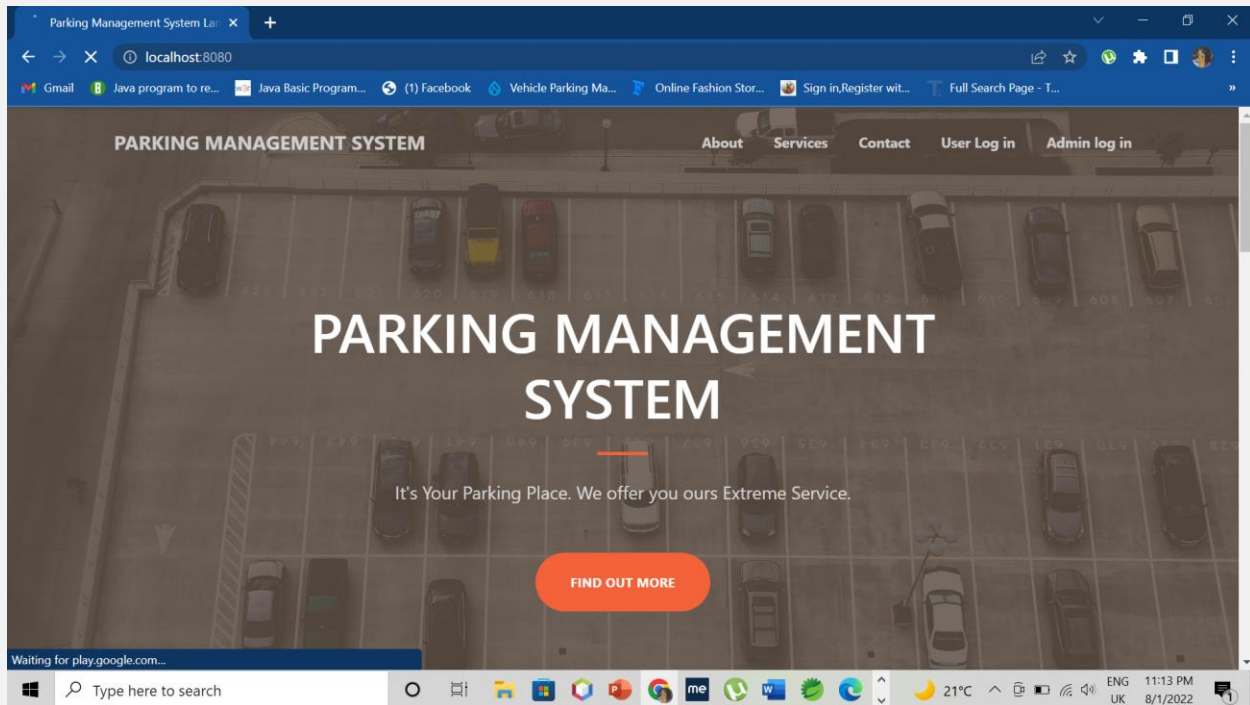
**Red** primary keys

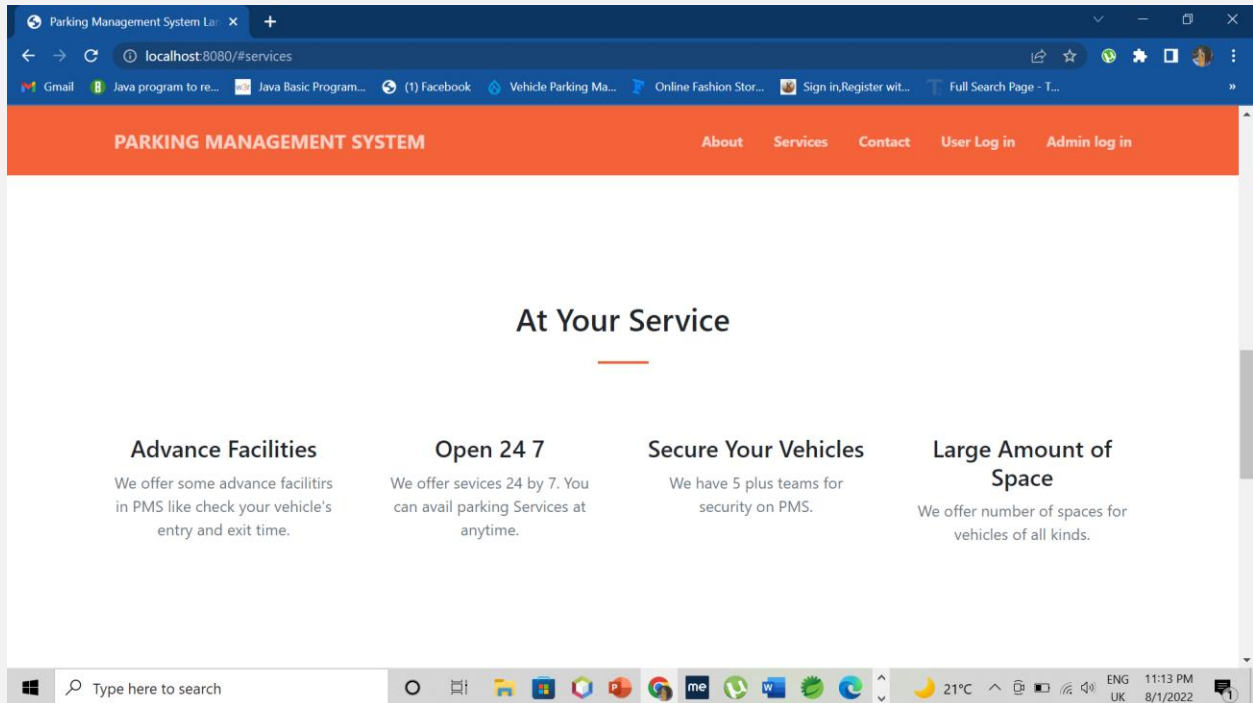
**Blue** foreign keys

# Project Interface

## 1. Landing Page

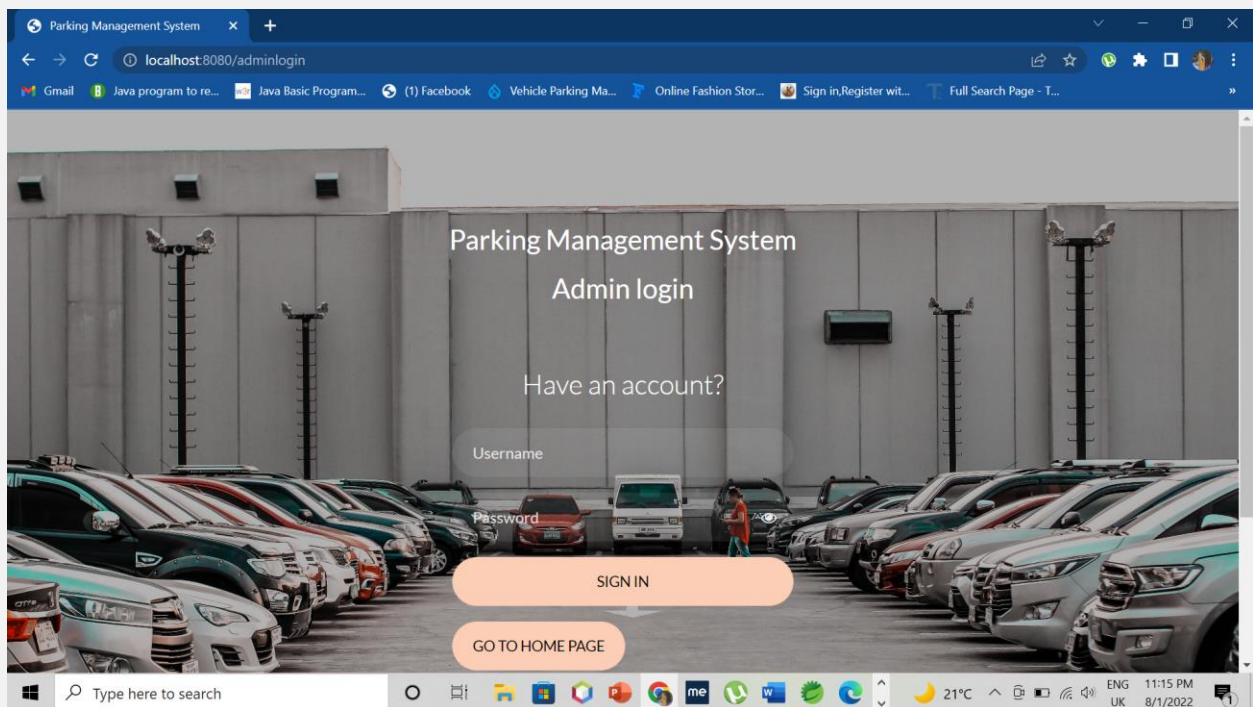
This will show users what we offer in PMS:





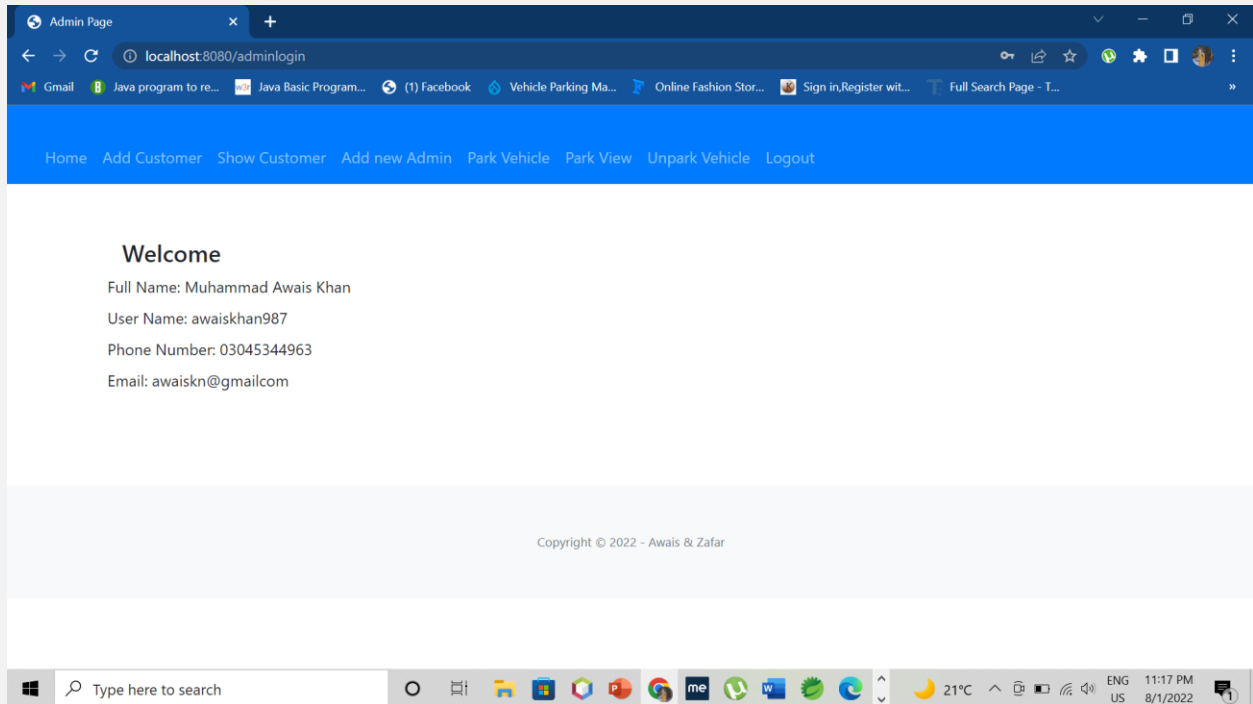
## 2. Login page

Here Admins will be able to Log in:



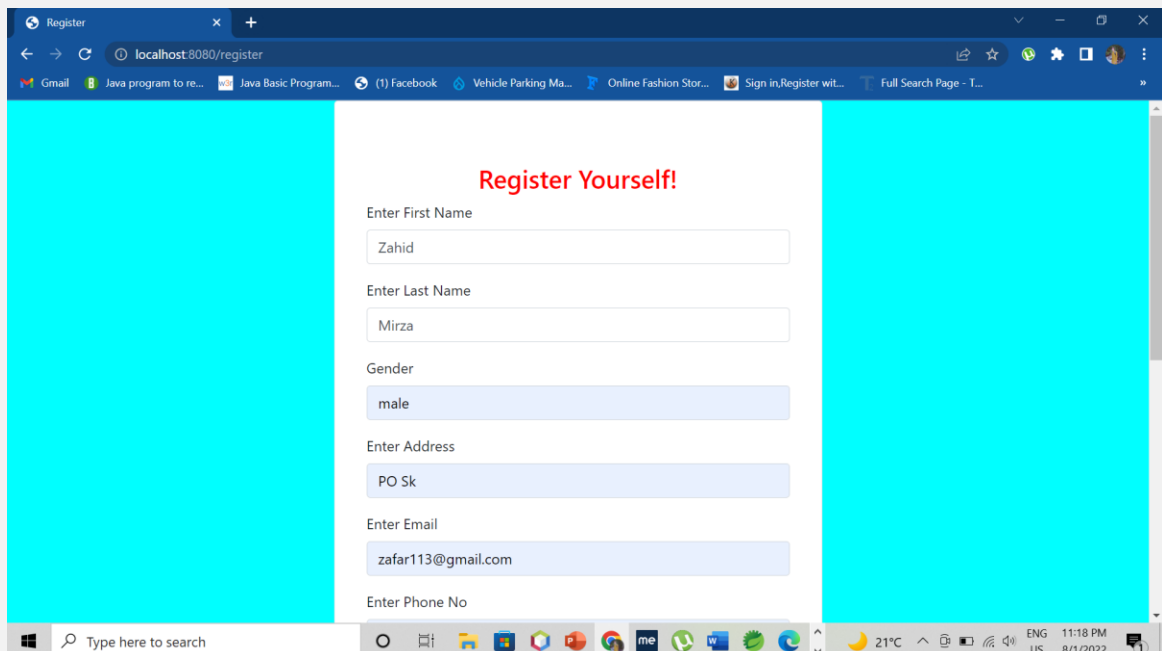
### 3. Admin page

After Admin has Log in we show Admin Details:



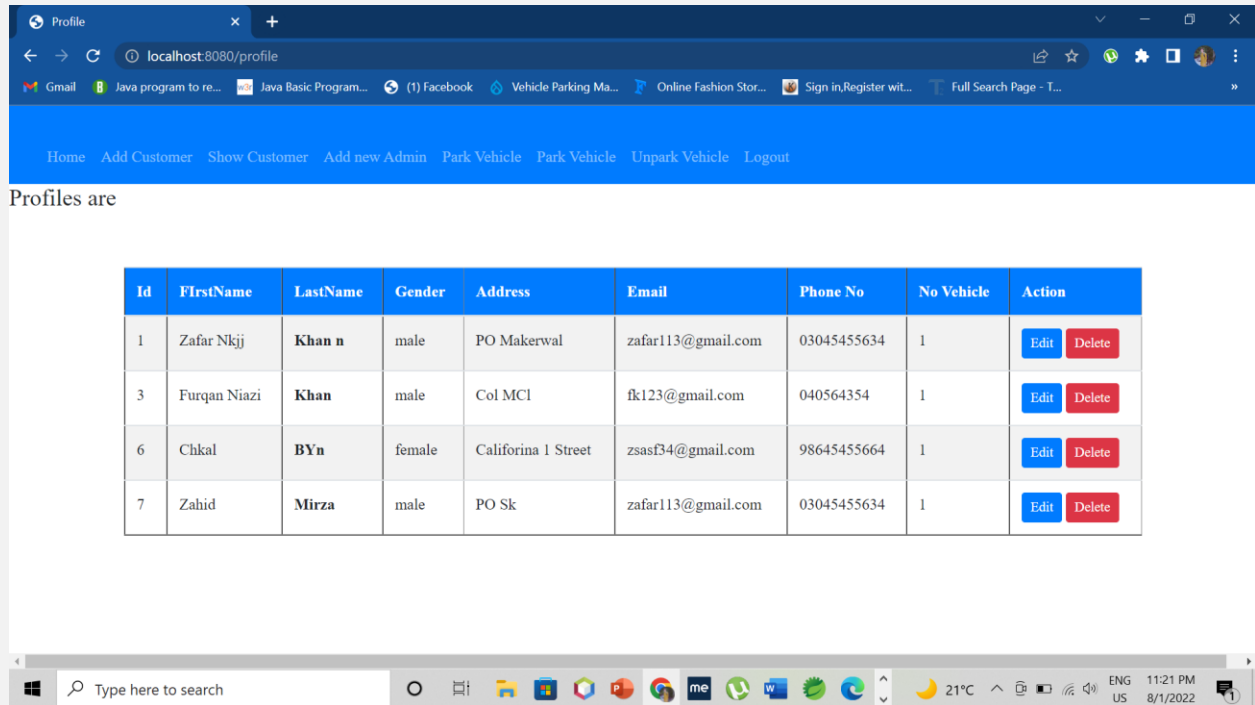
### 4. Add customer

We can add Customers:



## 5. Show Customer

6.



The screenshot shows a web browser window with the URL `localhost:8080/profile`. The browser's address bar and tabs are visible. Below the browser window, a blue navigation bar contains the following links: Home, Add Customer, Show Customer, Add new Admin, Park Vehicle, Park Vehicle, Unpark Vehicle, and Logout. The main content area displays the text "Profiles are" followed by a table of customer profiles.

| Id | First Name   | Last Name | Gender | Address             | Email              | Phone No    | No Vehicle | Action                                      |
|----|--------------|-----------|--------|---------------------|--------------------|-------------|------------|---|
| 1  | Zafar Nkjj   | Khan n    | male   | PO Makerwal         | zafar113@gmail.com | 03045455634 | 1          | <a href="#">Edit</a> <a href="#">Delete</a> |
| 3  | Furqan Niazi | Khan      | male   | Col MCI             | fk123@gmail.com    | 040564354   | 1          | <a href="#">Edit</a> <a href="#">Delete</a> |
| 6  | Chkal        | BYn       | female | Califorina 1 Street | zsasf34@gmail.com  | 98645455664 | 1          | <a href="#">Edit</a> <a href="#">Delete</a> |
| 7  | Zahid        | Mirza     | male   | PO Sk               | zafar113@gmail.com | 03045455634 | 1          | <a href="#">Edit</a> <a href="#">Delete</a> |

At the bottom of the screenshot, a Windows taskbar is visible with a search bar, several application icons, and system information including the date (8/1/2022) and time (11:21 PM).

## 7. Edit Customer

On Clicking edit We can edit Customer:

**Edit User**

First Name  
Zafar Nkjj

Last Name  
Khan n

Gender  
male

Address  
PO Makerwal

Phone  
03045455634

Email  
zafar113@gmail.com

City

No of Vehicles  
1

## 8. Delete Customer

On clicking delete we can delete A customer:

Home Add Customer Show Customer Add new Admin Park Vehicle Park Vehicle Unpark Vehicle Logout

Profiles are

| Id | FIrstName    | LastName | Gender | Address             | Email              | Phone No    | No Vehicle | Action      |
|----|--------------|----------|--------|---------------------|--------------------|-------------|------------|-------------|
| 1  | Zafar Nkjj   | Khan n   | male   | PO Makerwal         | zafar113@gmail.com | 03045455634 | 1          | Edit Delete |
| 3  | Furqan Niazi | Khan     | male   | Col MCl             | fk123@gmail.com    | 040564354   | 1          | Edit Delete |
| 6  | Chkal        | BYn      | female | Califorina 1 Street | zsast34@gmail.com  | 98645455664 | 1          | Edit Delete |
| 7  | Zahid        | Mirza    | male   | PO Sk               | zafar113@gmail.com | 03045455634 | 1          | Edit Delete |

localhost:8080/profile/6

Profiles are

| Id | First Name   | Last Name | Gender | Address             | Email              | Phone No    | No Vehicle | Action                                      |
|----|--------------|-----------|--------|---------------------|--------------------|-------------|------------|---|
| 3  | Furqan Niazi | Khan      | male   | Col MC1             | fk123@gmail.com    | 040564354   | 1          | <a href="#">Edit</a> <a href="#">Delete</a> |
| 6  | Chkal        | BYn       | female | Califorina 1 Street | zsasf34@gmail.com  | 98645455664 | 1          | <a href="#">Edit</a> <a href="#">Delete</a> |
| 7  | Zahid        | Mirza     | male   | PO Sk               | zafar113@gmail.com | 03045455634 | 1          | <a href="#">Edit</a> <a href="#">Delete</a> |

## 9. Parking Vehicle

Here We will park Vehicle:

**Park Vehicle**

Parking No.  
ASD-56

Vehicle Type  
long

Vehicle Number  
ICT-344

Entry Date  
08/09/2022

Entry Time  
01:27 PM

[Submit](#)



## 10. Unpark Vehicle

Un Parked Page

localhost:8080/outVehicle

Home Add Customer Show Customer Add new Admin Park Vehicle Park View Unpark Vehicle Logout

Vehicles are

| Id | Parking id | Vehicle Number | Vehicle Type | Entry Date | Entry Time | Exit Date  | Exit Time | Charges | Action |
|----|------------|----------------|--------------|------------|------------|------------|-----------|---------|--------|
| 1  | sp-235     | Gh-344         | long         | 2022-07-12 | 23:03      | 2022-07-06 | 20:06     | 20.0    |        |
| 2  | sp-235     | Gh-344         | long         | 2022-07-12 | 23:03      | 2022-07-22 | 22:14     | 20.0    |        |
| 3  | sd-44      | xc-343         | short        | 2022-07-01 | 20:14      |            |           | 0.0     | Unpark |
| 4  | ASD-56     | ICT-344        | long         | 2022-08-09 | 13:27      |            |           | 0.0     | Unpark |

Copyright © 2022 - Awais & Zafar

Un Parked Page

localhost:8080/outVehicle

Home Add Customer Show Customer Add new Admin Park Vehicle Park View Unpark Vehicle Logout

Vehicle Unparked Successfully..

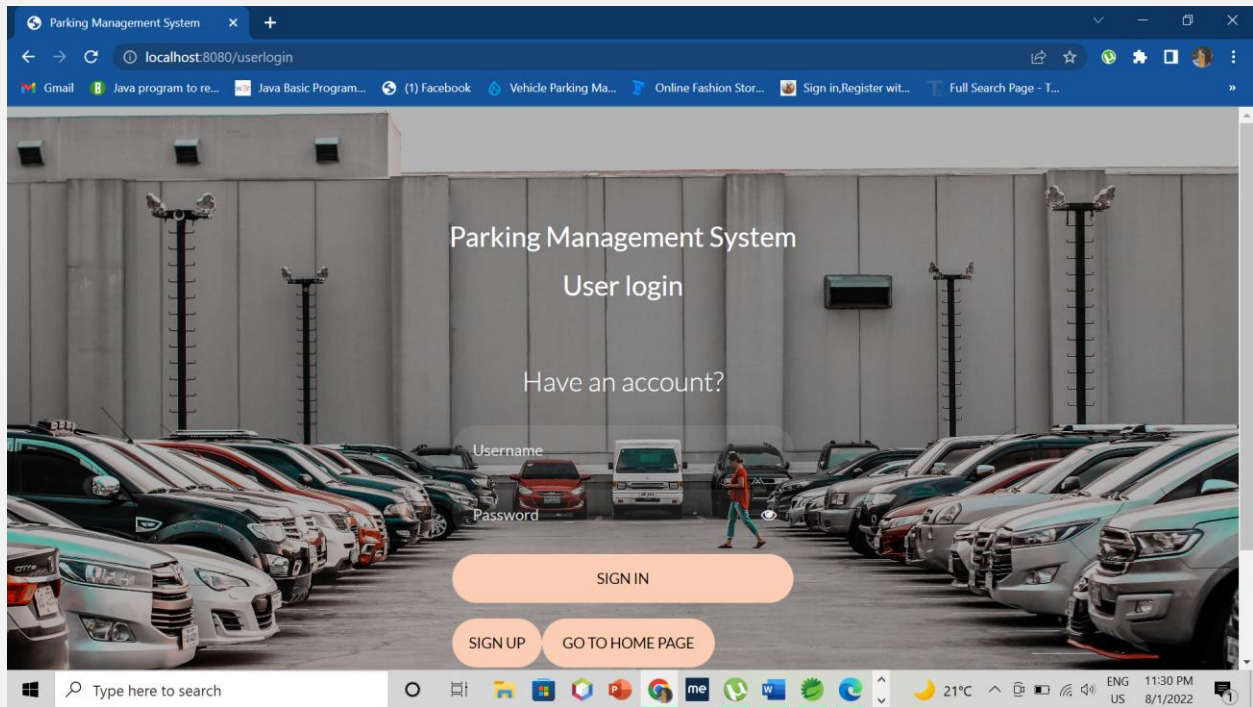
Vehicles are

| Id | Parking id | Vehicle Number | Vehicle Type | Entry Date | Entry Time | Exit Date | Exit Time | Charges | Action |
|----|------------|----------------|--------------|------------|------------|-----------|-----------|---------|--------|
|----|------------|----------------|--------------|------------|------------|-----------|-----------|---------|--------|

Copyright © 2022 - Awais & Zafar

## 11. Logout

This will take back to login page:



**The End!**