

CO527

Advanced Database Systems

Group Project Report

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## **INTRODUCTION TO ONLINE CAR RENTAL SYSTEM**

This project is designed so as to be used by Car Rental Company specializing in renting cars to customers. It is an online system through which customers can view available cars and drivers, register, view profile and book car.

### **ABSTRACT**

Nowadays, there are online car reservations which give much benefit to user. A rental service is a service in which customers arrive to request the hire of a rental unit. It is more convenient than carrying the cost of owning and maintaining the unit. A car rental system provides services to a customer who rents automobiles for short period of time for a fee including the driver, whether in a few hours or a few days. It is an extended form of a rental shop, often organized with numerous local branches and complemented by a website allowing online reservations. Car rental system primarily serve people who have a car that is temporarily out of reach or out of service, for example travelers who are out of town or owners of damaged or destroyed vehicles who are awaiting repair or insurance compensation. In short, It is a system design specially for large, premium and small car rental business. The car rental system provides complete functionality of listing and booking car.

### **OBJECTIVES**

- 1.To transform the manual process of hiring car to a computerize system
- 2.Pre book cars days before.
- 3.Ease of access to many people

## Requirements

The system will be done according to the requirements of Car Rental System

which is state as below:

### System:

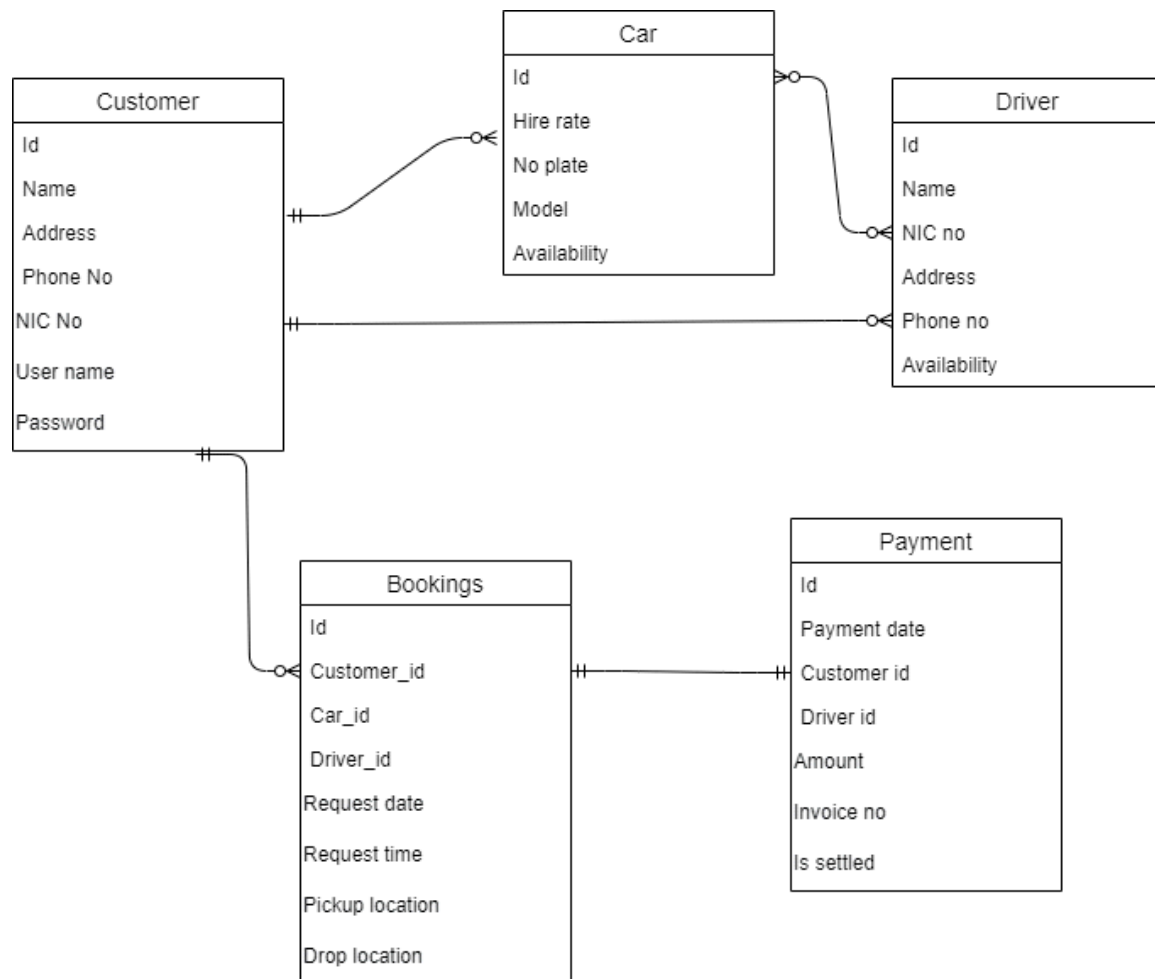
1. Provide car catalogue for users to choose car by their own.
2. Allow admins to search car,driver information from the database based on the respective ID.
3. Allow admin to add a new car.
4. Allow admin to view booking of cars.
5. Allow admin to add a new driver.
6. Multiple admins can log into the system to manipulate tables.

### User:

1. All authorized users can access the system.
2. Allow the user to view information of available car.
3. Allow the user to select a car.
4. Allow the user to view information of available driver.
5. Allow the user to select a driver.
6. Allow the user to book the car.

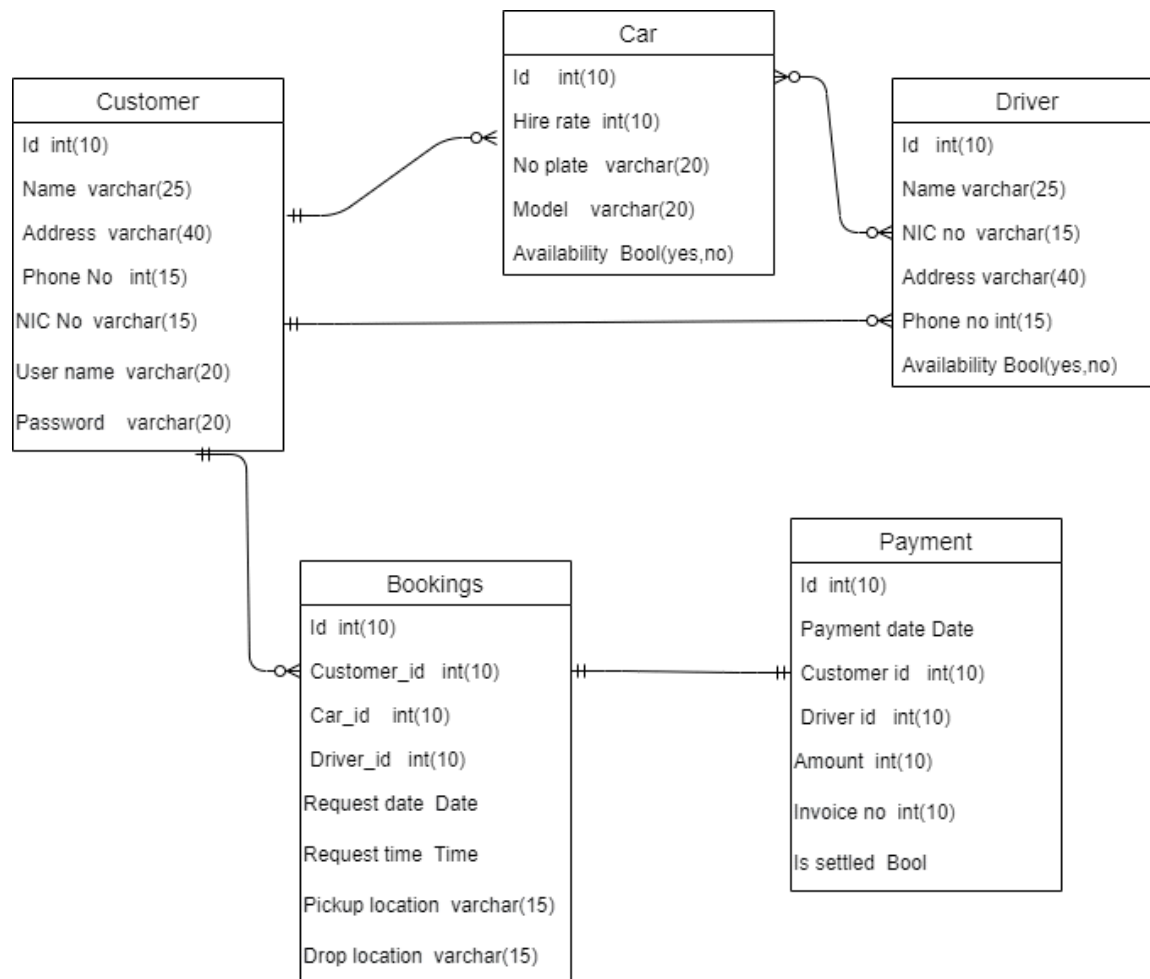
## Conceptual Model ERD of the system

This model is designed from the informations gathered from the requirements of the system



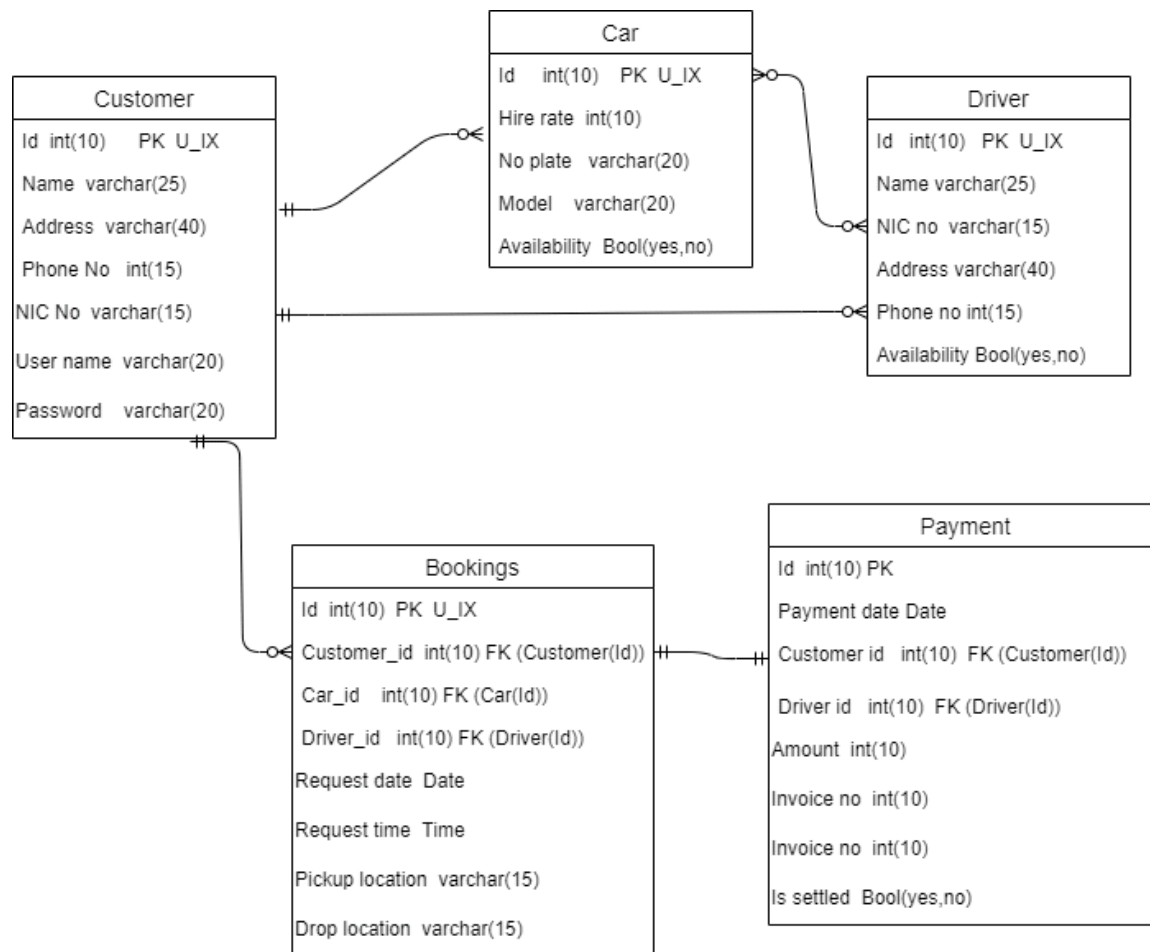
## Logical Model ERD

This model is designed according to the column types of each tables



## Physical Model ERD

Final model as in the database



## Indexes used in Database

Car\_IX an index on car table Id column.

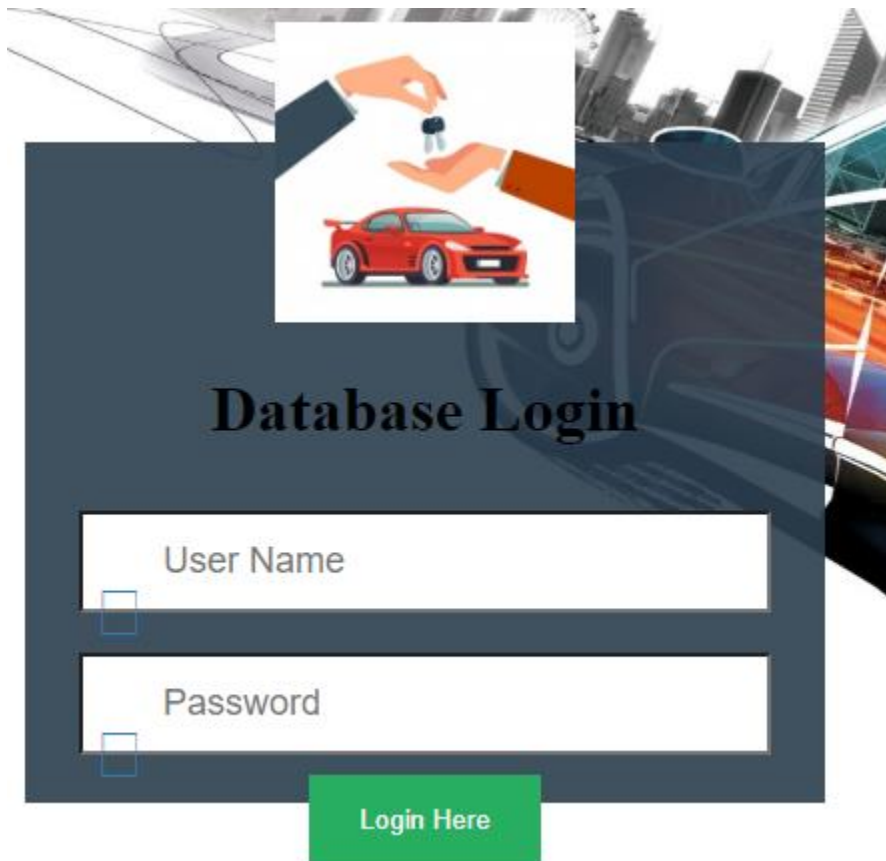
Driver\_IX an index on driver table Id column.

Booking\_IX an index on bookings table Id column.

These indexes are used to make queries execute faster because car,driver are the tables frequently used in this system and bookings has the potential to grow big.

## Multi User access to Database

The system is designed for an organization that has multiple branches so there is a requirement for multiple admins to access the database therefor this system is created as many users can access the database with their login credentials

The image shows a web-based login interface for a database. It features a dark blue background with a faint city skyline and a car. In the center, there's a white box containing the text "Database Login". Below this, there are two input fields: "User Name" and "Password", each with a small blue square icon to its left. At the bottom of the white box, there is a green button with the text "Login Here".

**Database Login**

User Name

Password

Login Here

This is the UI to log into the database as admin at [http://localhost/database\\_login.php](http://localhost/database_login.php)

By log in to this page user can do create,update,delete,insert operations on car,driver,bookings tables

ID	Hire rate	No Plate	Model	Availability
5	1000	CAD 5454	Maruti	available

### View Cars

### View Drivers

### View Bookings

Sample Users created for this database are

user name: user1

password: 1234

user name: user2

password: 1234

user name: user3

password: 1234

apart from admins another user is created to public(customers) access the data base and this user has some constraints than the admins

Public user

user name: customer\_access

password:1234

Constraints

Only Select and Insert operations on Customer table.

Only Select and Update operation on Car table.

Only Select and Update operation on Driver table

Only Insert operation on Bookings table



## Transaction processing

There are multiple users for the database across many branches of the organization, to prevent two or more users modify same data in same time transactions are used in the system. This transaction scripts are embedded in the backend code and transaction will start once the database user start to modify any of the table. This transaction process will lock the working table and once the modification is made sucessfully it will commit the changes or else it will rollback to the previous state.

The sql script used in delete\_driver.php file which will delete the selected driver details on Driver table

```
if(isset($_POST["delete"]))
{
    $sql1="set autocommit=0";
    $sql2="start transaction";
    $sql3="Delete from driver Where id={$_POST["id"]}";
    $sql4="commit";
    $sql5="rollback";

    $res1=$db->query($sql1);
    $res2=$db->query($sql2);
    $res3=$db->query($sql3);

    if($res3)
    {
        echo "<div class='success'>Delete Success..</div>";
        $db->query($sql4);
    }
    else
    {
        echo "<div class='error'>Delete Failed..</div>";
        $db->query($sql5);
    }
}
```

Transactions are used in below php files

add\_car.php , update\_car.php , delete\_car.php , add\_driver.php , update\_driver.php , delete\_driver.php

## User Interface functionalities

### User:

- User must signup first then login to the system with his/her login credentials.
- Then he/she can select available cars and select available drivers,
- Then they must fill the booking form and book the car
- Once a car or driver is booked it will not be available to other customers.

### Database admins:

- Admins must login to the system with provided login credentials
- Then they can create,update,delete,view the tables

## Populated tables

### Car

```
mysql> select * from car;
```

id	hire_rate	no_plate	model	availability
2	2000	CAA 6548	NISSAN	Not available
5	1000	CAD 5454	Maruti	Not available
20	10000	CAA 7584	RR Cullian	available
22	1000	WP KC 3436	Mazda	Not available
23	1000	CP KA 3436	Hundai	available
24	1000	251-1234	Honda	available
25	1500	CP CAA1543	Audi	Not available
26	1500	CP CAA 2843	Toyota Corolla	available
27	1000	EP KC 9936	Toyota	Not available
28	1000	WP CAA 3422	Benz	Not available
29	1000	CP CCB 1543	BMW	Not available
30	1000	NP PA 6534	Suzuki	available
31	1500	WP CAA 6521	Ford	available
32	2000	WP CCA 8697	Tesla	available

14 rows in set (0.06 sec)

### Customer

```
mysql> select * from customer;
```

id	name	address	P_no	NIC_no	username	password
1	Vinayak	No 54, Corner Street, Batticaloa	776903585	753791981v	abcd	1234
2	david	No 65, central road, colombo	778689544	853780879v	david	1234
3	John	No 85, central road, colombo	758684544	953710179v	john	1234
4	Wickrama	No 7/4, Temple Road, Colombo	756432345	976543888v	Wickrama	wic1234
5	Lahoora	No 54, Akurana, Kandy	778732345	996973088v	lahoora	lahoo12
6	Sahara	No 93, Grandpass Lane, Colombo	770931545	896072098v	sahara07	abcd123
7	Kholi	No 65, Kovil Road, Vavuniya	774938945	908853568v	kholi07	kholiabcd
8	Williamson	No 7/4, Temple Road, Kandy	774127634	911859568v	williamson12	11234567

8 rows in set (0.00 sec)

## Driver

```
mysql> select * from driver;
```

id	name	NIC_no	address	P_No	available
1	David	882678895v	NO 34,Main Street,Batticaloa	775892474	Not available
2	Ram	78365422v	No12,Trinco road,Batticaloa	775124128	available
4	Dev	9258964755v	No 65, central road,colombo	758992322	Not available
6	John	9258960745v	No 85, central road,colombo	758992322	available
7	Jero	901726877v	No 13,Jaffna Road,Kandy	776542383	Not available
8	Suthan	875439122v	No 54,Peradeniya,Kandy	777092536	Not available
9	Kaleel	786548677v	No 93,Main Stret,Ampara	779842309	available
10	Cans	890873912v	No 73/74, Temple Road,Colombo	714598765	Not available
11	Jackie	874365098v	No 7/4,Postoffice road,Kilinochi	714096765	available
12	Karan	763490233v	No 95,Bank Road,Batticalo	79845734	available

```
10 rows in set (0.00 sec)
```

## Bookings

```
mysql> select * from bookings;
```

id	customer_id	car_id	driver_id	req_date	req_time	pickup_loc	drop_loc
21	3	2	2	2020-06-18	06:50:00	Main street	Trinco road
22	3	5	1	2020-06-26	01:54:00	Main street	Trinco road
20	3	2	2	2020-06-18	06:50:00	Main street	Trinco road
23	3	5	4	2020-06-24	17:50:00	Central park	Municipal coun
24	2	2	4	2020-06-30	21:38:00	Central park	Municipal coun
26	7	25	6	2020-06-23	08:17:00	Kovil Road	BOC Bank
27	6	28	10	2020-06-27	16:19:00	Main Street	Children Park
28	5	22	7	2020-06-24	08:21:00	Kali Kovil	Post office

```
8 rows in set (0.00 sec)
```

## **Summary**

The web based car rental system has offered an advantage to both customers as well as the organizations to efficiently and effectively manage the business and satisfies customer's need at the click of a button. This system has managed to complete the requirements for a certain extend with the effective use of the database management.

## **Technologies used in the system**

Php version 5.6.25

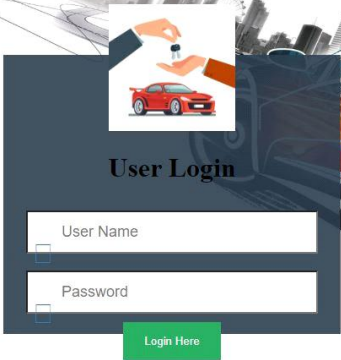
MySql version 5.7.14

Apache server version 2.4.23

## User Interface screen shots for Customers

Car Rental System Database Login Login Signup

# CAR RENTAL SYSTEM




**User Login**

User Name

Password

[Login Here](#)



User Login page

Car Rental System Home Log out

**Vehicle No: CAD 5454**

Vehicle model:Maruti

Hire rate  
1000


[Next :Select driver](#)

**Vehicle No: CAA 7584**

Vehicle model:RR Cullian

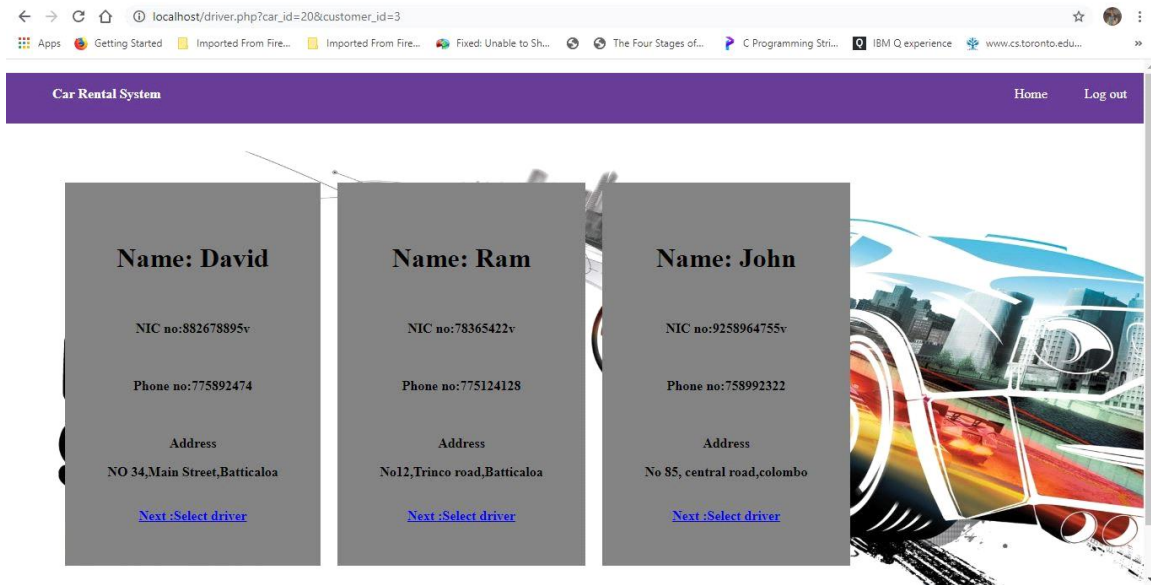
Hire rate  
10000

[Next :Select driver](#)

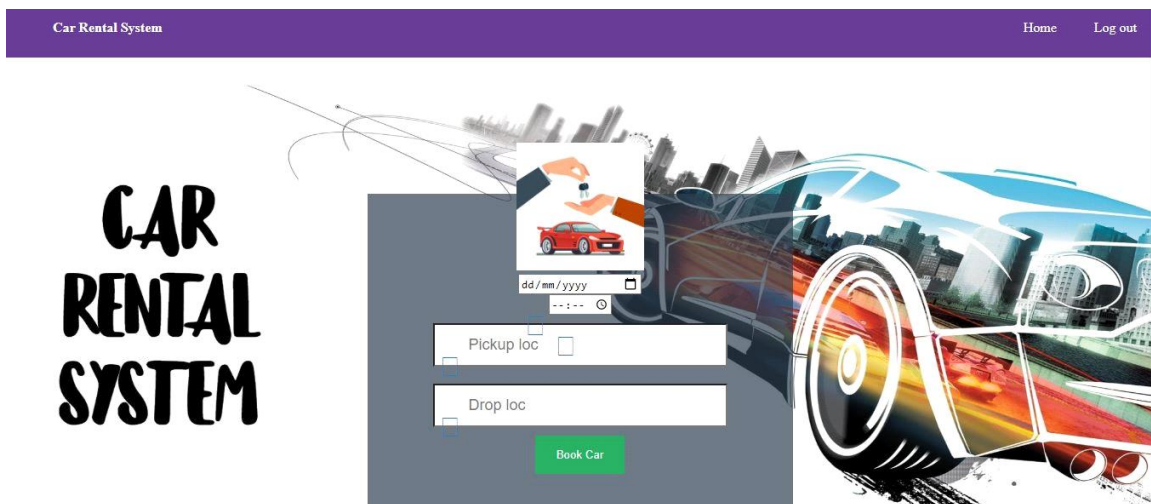


Home page displaying available cars





Display available drivers



Booking form

