



**PBL-II Report On**  
**“Car Rental System”**

**Submitted by**

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**Under the Support and Guidance of**  
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In partial fulfillment of  
**Project Based Learning II-(210258)**  
S.E. ENGINEERING DEGREE OF  
SAVITRIBAI PHULE PUNE UNIVERSITY 2022-2023



## CERTIFICATE

This is to certify that the PBL-II project report entitles

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# INTRODUCTION

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, register, view profile and book car.

## 1.1 Reason for the Project

The recent advancement in Information Technology and internet connectivity in Ethiopia has greatly enhanced various business processes and communication between companies (services provider) and their customers of which car rental industry is not left out. This Car Rental System is developed to provide the following services:

- Enhance Business Processes: To be able to use internet technology to project the rental company to the wide customer instead of limiting their services to their local domain alone, thus increase their return customer base.
- Online Vehicle Reservation: A tools through which customers can reserve available cars online prior to their expected pick-up date or time.
- Customer's registration: A registration portal to hold customer's details, monitor their transaction and used same to offer better and improve services to them.

## 1.2 Scope

This project navigates a lot of areas ranging from business concept to computing field, and required to perform several researches to be able to achieve the project objectives. The area covers include:

- Car rental industry: This includes study on how the car rental business is being done, process involved and opportunity that exist for improvement.
- Technologies used for the development of the application.
- General customers as well as the company's staff will be able to use the system effectively.
- Web-platform means that the system will be available for access 24/7 except when there is a temporary server issue which is expected to be minimal

### 1.3 Problem Statement

A car rental is a vehicle that can be used temporarily for a fee during a specified period. Getting a rental car helps people get around despite the fact they do not have access to their own personal vehicle or don't own a vehicle at all. The individual who needs a car must contact a rental car company and contract out for a vehicle. This system increases customer retention and simplify vehicle and staff management.

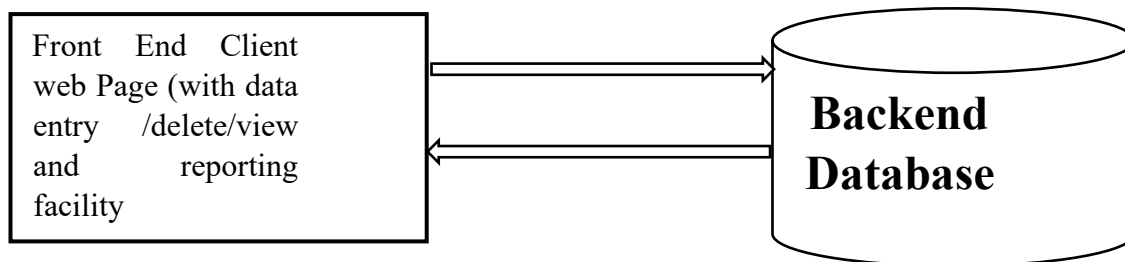
### 1.4 Aims & Objectives

- To produce a web-based system that allow customer to register and reserve car online and for the company to effectively manage their car rental business.
- To ease customer's task whenever they need to rent a car.

## 2.OVERALL DESCRIPTION

### 2.1 Product Perspective

Work A car rental is a vehicle that can be used temporarily for a period of time with a fee. Renting a car assists people to get around even when they do not have access to their own personal vehicle or don't own a vehicle at all. The individual who want to rent a car must first contact the car rental company for the desire vehicle. This can be done online. At this point, this person has to supply some information such as; dates of rental, and type of car. After these details are worked out, the individual renting the car must present a valid Identification Card. Most companies throughout the industry make a profit based of the type of cars that are rented. The rental cars are categorized into economy, compact, compact premium, premium and luxury. And customers are free to choose any car of their choice based on their purse and availability of such car at the time of reservation.



#### ➤ Benefits of Online Car Rental Services

- This online car rental solution is fully functional and flexible.
- It is very easy to use.
- This online car rental system helps in back office administration by streamlining and standardizing the procedures.
- It saves a lot of time, money and labour.
- Eco-friendly: The monitoring of the vehicle activity and the overall business becomes easy and includes the least of paper work.
- The software acts as an office that is open 24/7.

- It increases the efficiency of the management at offering quality services to the customers.
- It provides custom features development and support with the software.

### 2.1.1 Hardware Interface

- Processor: Intel
- RAM: 4 GB
- SDD:~ 20 GB

### Hardware Limitations:

There is no limitation in the operating system in which Car Rental System will work. However, the Car Rental System and the database will work on a server that needs to be always online. Users can access the system with any internet browser

### 2.1.2 Software Interface

- Operating System: Windows 11
- Language Used: PHP
- Database : My SQL
- User Interface Design HTML, CSS,JAVASCRIPT
- Web Browser: FIREFOX, Google Chrome, IE8,OPERA
- Software : XAMPP Server

## 2.2 Product Function

The system will allow access only to authorised user with specific roles (Administrator, Data Entry Operator, Marks Entry Clerk and Co-ordinator). Depending upon the user's role will be able to access only specific modules of the system.

A summary of the major functions that the software will perform:

- (i) A Login facility for enabling only authorised access to the system.
- (ii) User (with role Data Entry Operator) will be able to add/modify/delete information about different Cars that are available in different years.
- (iii) User (with role Data Entry Operator) will be able to add/modify/delete information about different cars that are offered in site. with role Data Entry Operator) will be able to add/modify/delete information
- (iv) the cars opted by different customer in different location user will be able to add/modify/delete information regarding car specification obtained by different customer in different location.
- (vi) User (with role data Entry Clerk will also be able to print bill for a customer
- (vii) User (with role Co-ordinator) will be able to generate Printable reports (as mentioned in section 2.1.2 above).
- (viii) User (with role Administrator) will be able to 'Reset' the system-leading to deletion of all existing information from the backend database.
- (ix) User (with role Administrator) will be able to create/modify/delete new/existing user accounts,

## 2.3 User Characteristics

Educational level: At least they should be comfortable with English language.

Experience: They should be known about cars and their specification.

They must have proper internet connection to operate the site.

Technical Experience: should be comfortable using general purpose web application on a computer.

## 2.3 Assumptions and dependencies

- The cost of rent of any car by car-owner does change after booked the car.
- The type of the car does not change after booking.
- The booking does not cancel after two hours from booking.



## 3. Software System Attribute

### 3.1 Reliability

The system provides a help and support menu in all interfaces for the user to interact with the system. The user can use the system by reading help and support.

### 3.2 Availability

The system should always be available for access at 24 hours, 7 days a week. Also in the occurrence of any major system malfunctioning, the system should be available in 1 to 2 working days, so that business process is not severely affected.

### 3.3 Security

The subsystem should provide a high level of security and integrity of the data held by the system, only authorized personnel of the company can gain access to the company's secured page on the system; and only users with valid password and username can login to view user's page.

### 3.4 Maintainability

If any car requires maintain ace like repair or replacement of any parts, then maintenance manager maintain the data about that. Payment of maintenance are done by the administrator of the application.

### 3.5Portability

This system can be used anywhere in world because it requires only internet connection and a device.it is site based project so it's portability is not a big issue.

- **Performance and Response time:**

The system should have high performance rate when executing user's input and should be able to provide feedback or response within a short time span usually 40 seconds for highly complicated task and 10 to 25 seconds for less complicated task.

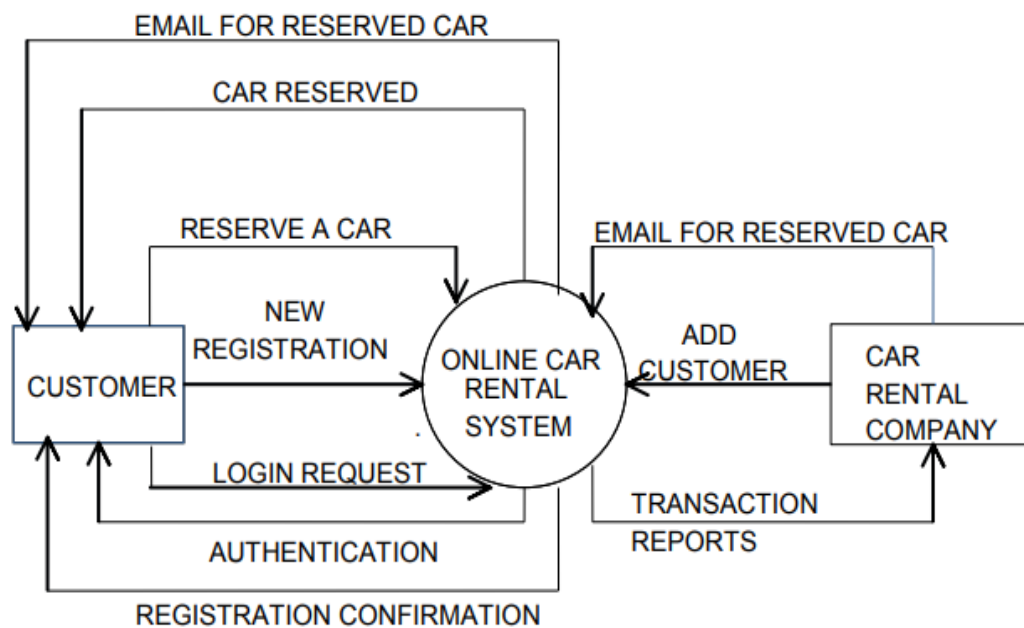
- **Error handling:**

Error should be considerably minimized and an appropriate error message that guides the user to recover from an error should be provided.

## 4.DESIGN

### 4.1 Data Flow Diagram (DFD)

A Data Flow Diagram (DFD) is a graphical representation that depicts the information flow and the transforms that are applied as data moves from input to output.



**Figure 1 :** Level 0 DFD of Online Car Rental System

In this diagram, Customer and Car Rental Company are the two entity sets.

Functions of Customer:

- New Registration
- Login Request
- Registration Confirmation by the System
- Reserve
- Car Issued by the System
- Email received for Reserved Car

### Functions of Car Rental Company:

- Add Customer
- Send E-Mails for Reserved Car
- View Transaction reports

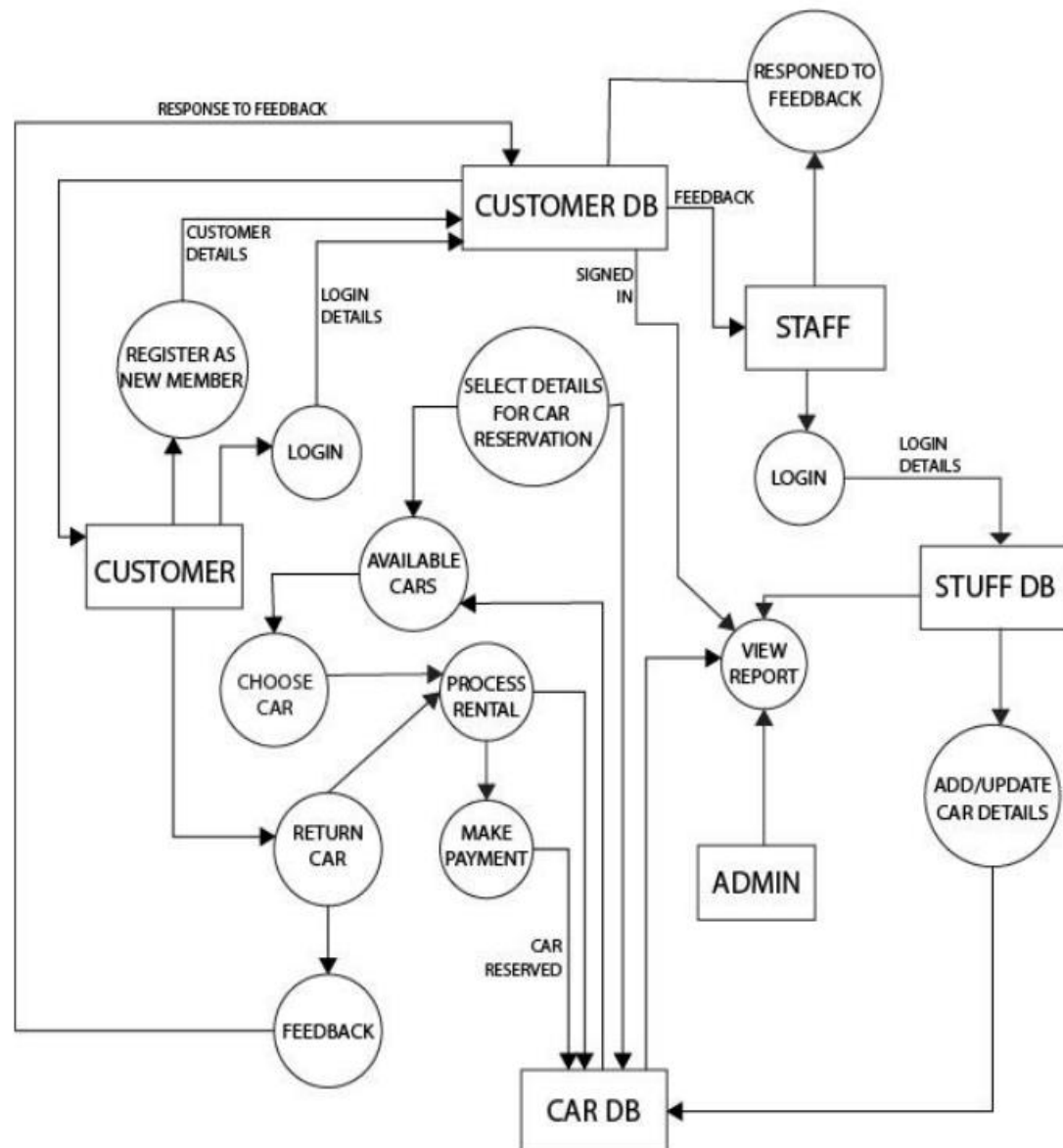


Figure 2 Level 1 DFD of Online Car Rental System

# 1. USE-CASE DIAGRAMS

## 1.1 Actor and Use Case Description :

Actor and use case description show the detail description of interaction between the actors and their use cases. The description enables to have a proper understanding of how actor interacts with the system through their use cases

Actor	Use Case	Use Case Description
Customer	Register as member	This use case describes the activities of the customer to register online and become a member. Customer's details are required as part of the registration. Login detail is automatically sent to the customer after successful registration.
	Make reservation	This use case enable customer to search and make reservation. Non-register customer will be directed to register before their reservation can be confirmed. Notification is automatically sent to the customer after the task is completed.
	Return car	This use case describes the event of customer returning the car borrowed, the use case extends "process rental" use case from the staff actor.
	Give feedback	This use case is used by the customer to provide feedbacks/comment to the company; a confirmation notification will be sent to the customer once a feedback has been submitted.
	Add new car	This use case is used by the staff to add new car to the company's fleet database. Staff will need to login to activate this use case.

Staff	Update car details	This use case is used by the staff to edit and modify car details whenever there is new renewal (insurance, road tax). It allows the company to keep up-to-date record of their fleet.
	Reply to customer's feedback	This use case describes the event by which staff sends reply to customer's earlier feedback. It depends on 'give feedback' use case from the customer.
	Process rental	This use case described the event by which staff updates the system when customer pick up or when returning car.
Admin	Add new staff	This use case describes the event by which Admin add new staff detail to the company's staff database. It is invoked whenever a new staff join the company.
	View report	This use case is used by the Admin to view transaction report.

Table 1 Actors and Use Case Description

## 1.2 Use Case Diagram

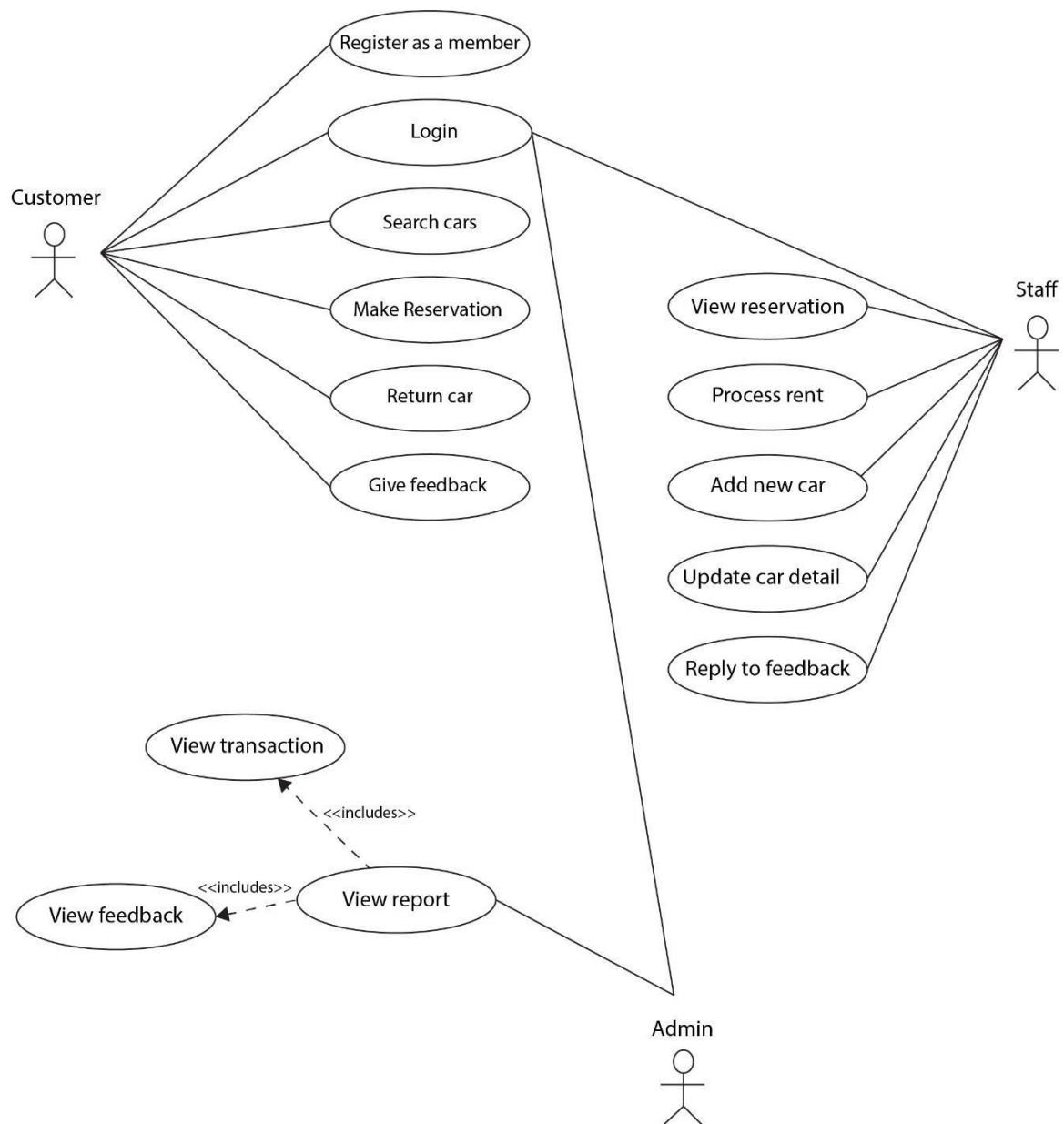


Figure 3 Use case diagram of Car Rental System

## 2.ACTIVITY DIAGRAMS

### 2.1 Activity Diagram

Activity diagrams graphically represent the sequential business and operational workflows of a system. It is a dynamic diagram that shows the activity and the event that causes the object to be in the particular state. The workflows from activity diagram will serve as guide for system navigation in the final design phase of the system.

#### 2.1.1 Member Registration

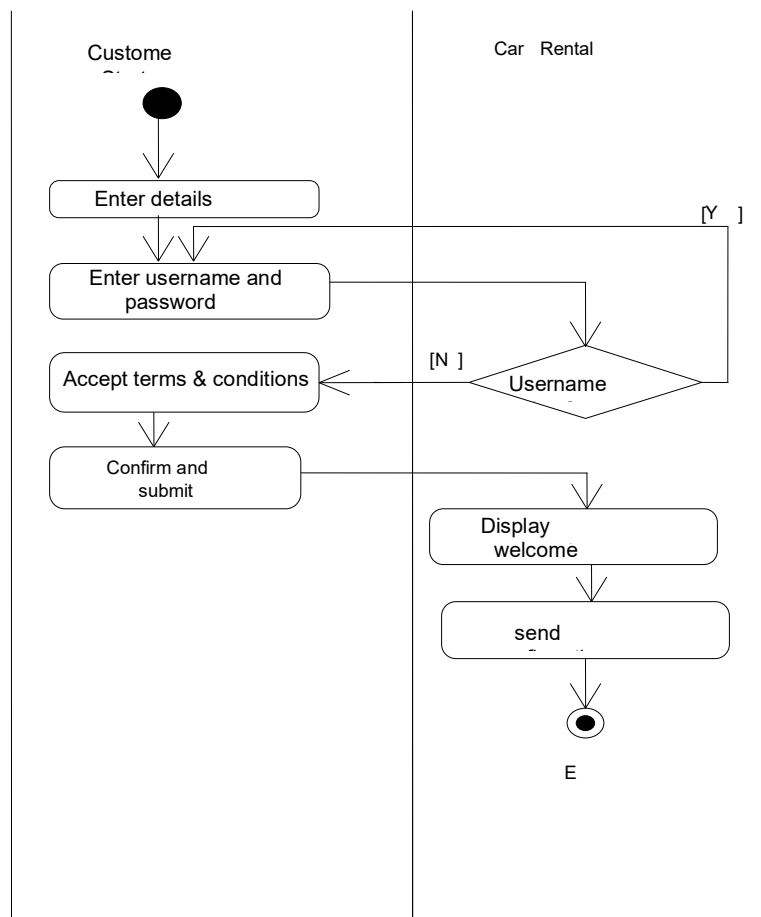


Figure 4 Register as member activity diagram

## 6.1.2 Reservation of Car

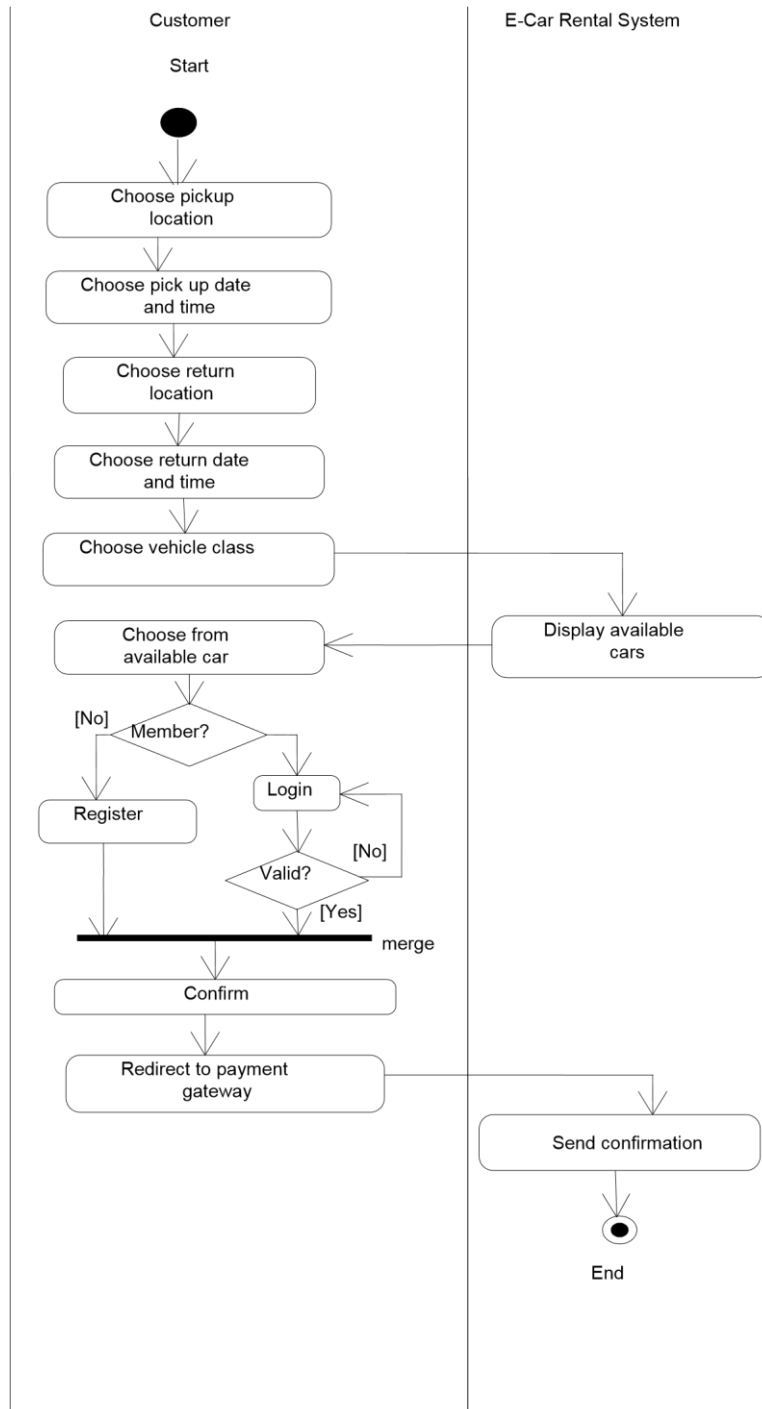


Figure 5 Make Reservation activity diagram



## 6.1.3 Payment of Car Rent

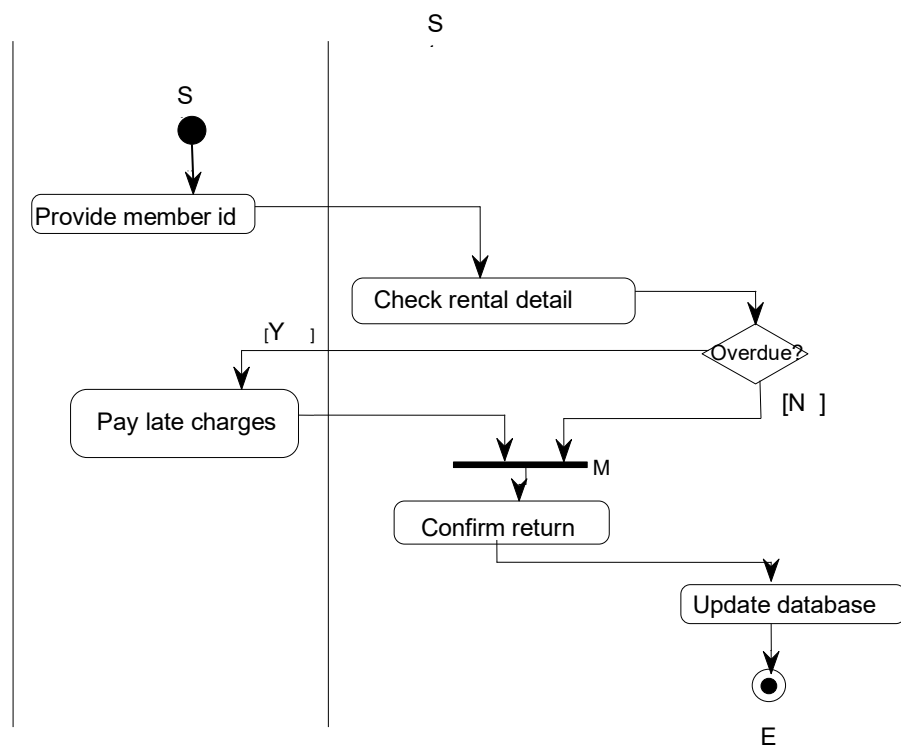


Figure 6

Rent a Car activity diagram

## 2.1.4 Adding a New Car

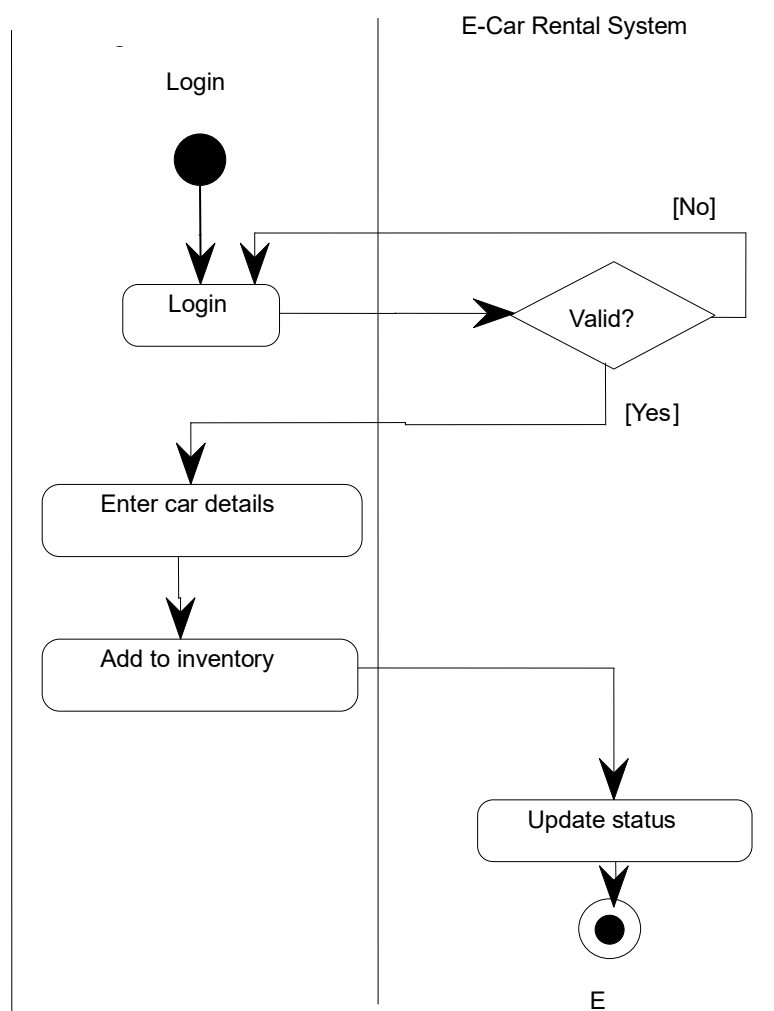


Figure 7 Add a New Car activity diagram

## 2.1.5 View Report

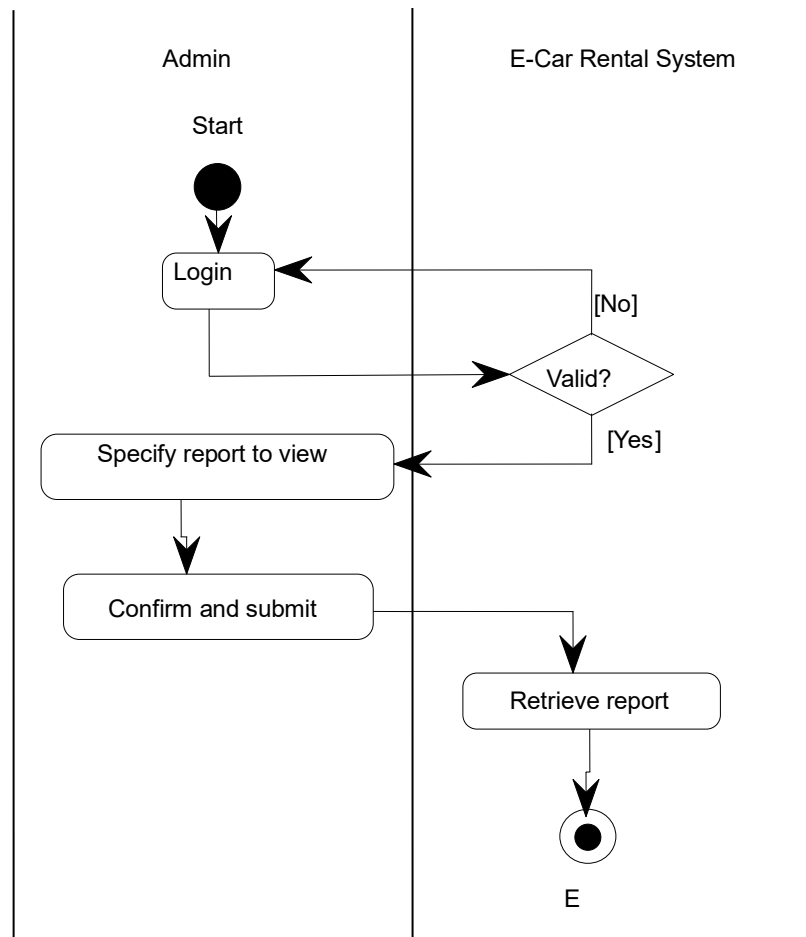


Figure 8 View report activity diagram

## 3.SEQUENCE DIAGRAMS

### 3.1 Sequence Diagram

Sequence diagrams are used to demonstrate the behavior of objects in a use case by describing the objects and the messages they pass. It provides a graphical representation of object interactions over time. Sequence diagrams show an actor, the objects and components they interact with in the execution of a use case. One sequence diagram represents a single Use Case 'scenario' or events. Sequence diagrams show the flow of messages from one object to another, and as such correspond to the methods and events supported by an object.

#### 7.1.1 Member Registration

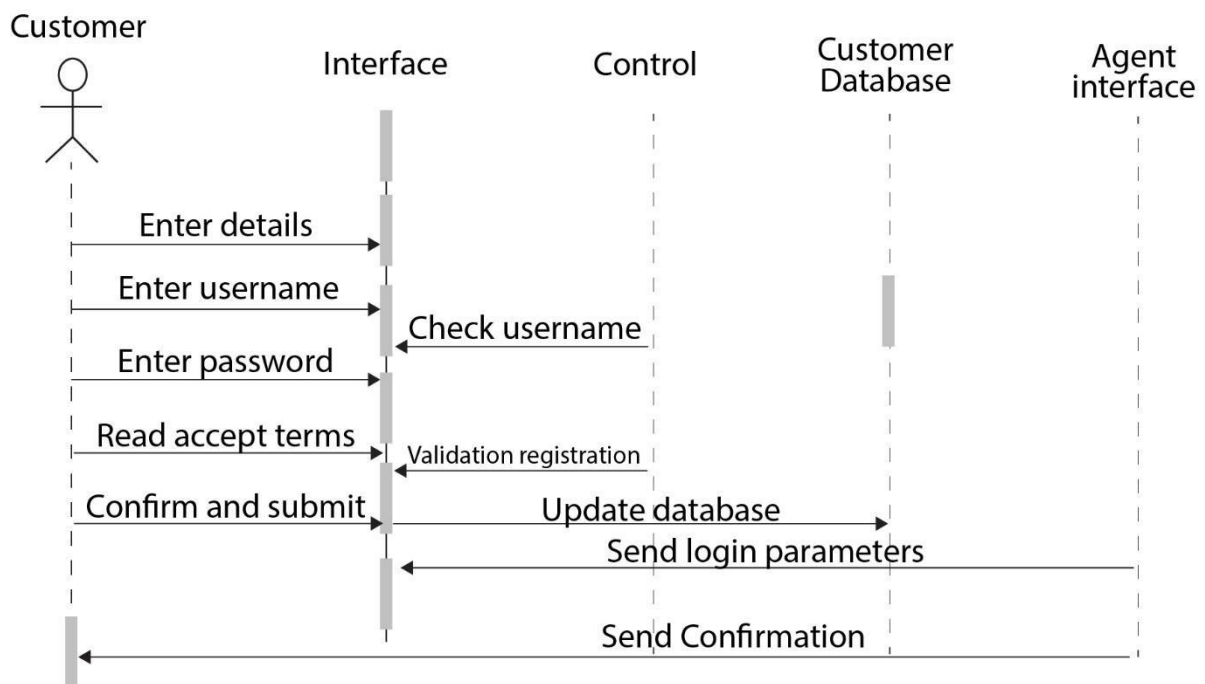


Figure 9 Register as member sequence diagram

### 7.1.2 Reservation of Car

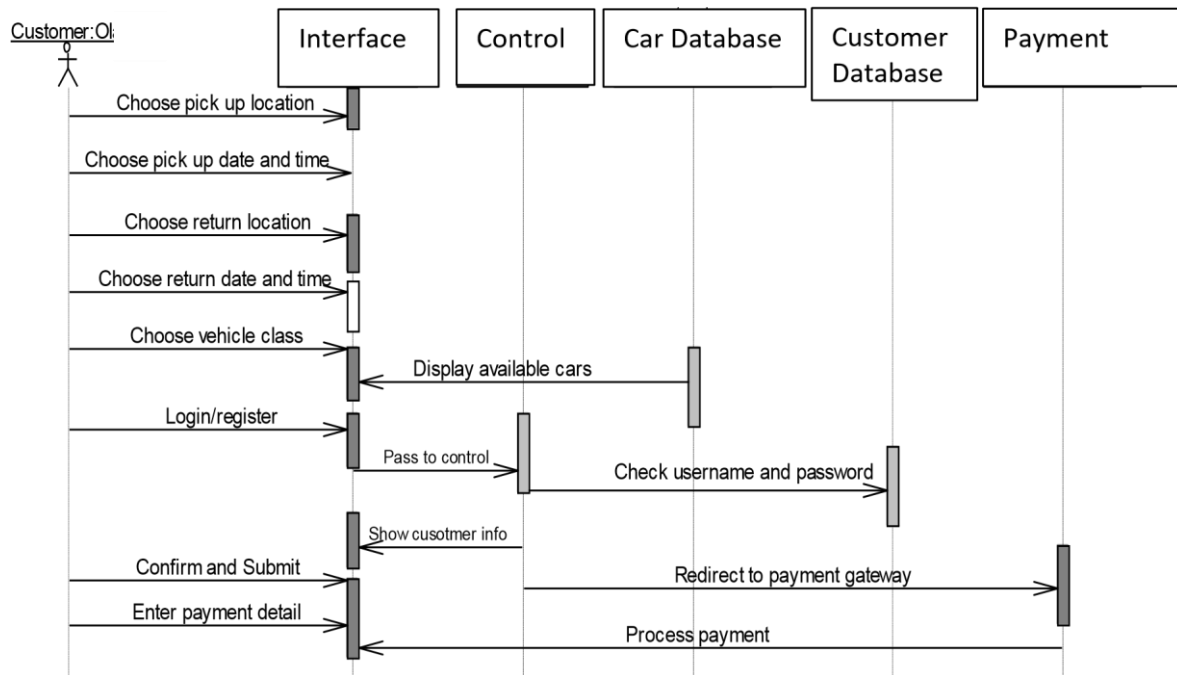


Figure 10 Make reservation sequence diagram

### 7.1.3 Adding a New Car

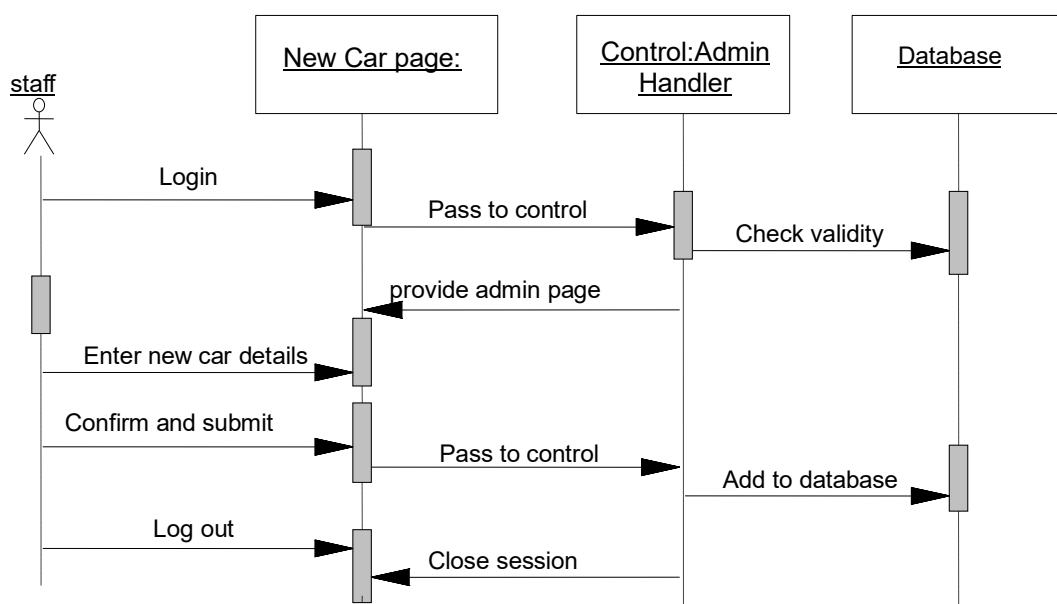


Figure 11 Add new car sequence diagram

## 7.1.4 Feedback Response

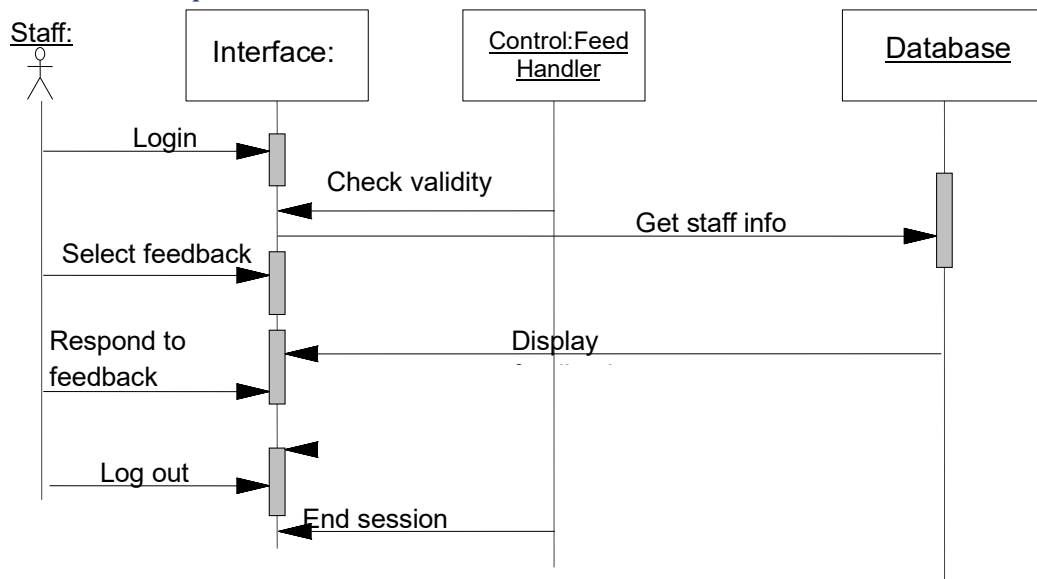


Figure 12 Respond to feedback sequence diagram

## 7.1.5 Return Car and Check Rental Details

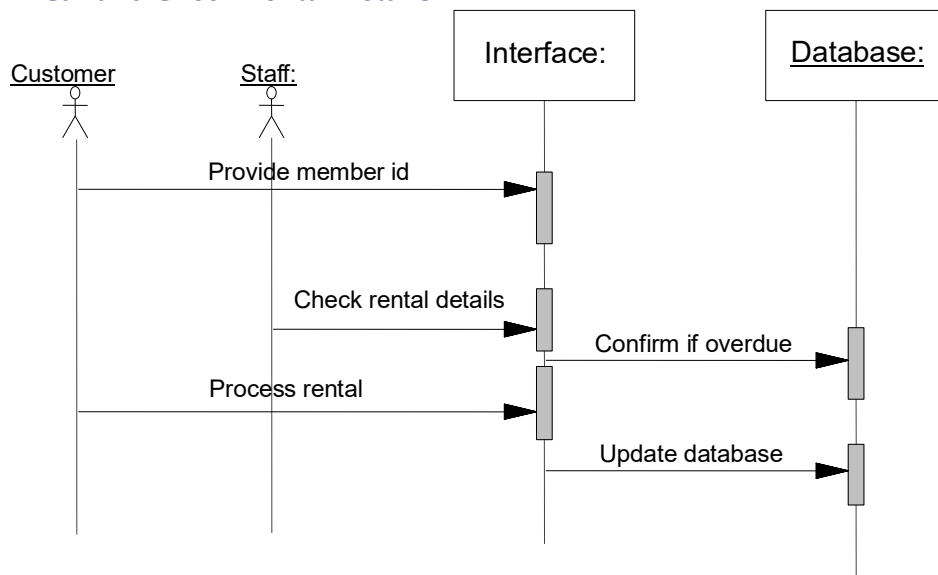


Figure 13 Return car sequence diagram

## 4 User Interfaces

The application will have a user-friendly and menu based interface. Following screens will be provided:

- (i) A login screen for entering the username, password and registration system(Administrator, data Entry Operator, Marks Entry Clerk, Co-ordinator) will be provided. Access to different screens will be based upon the role of the user.
- (ii) There will be a screen for capturing and displaying information regarding what all cars.
- (iii) There will be a screen for capturing and displaying information regarding various booking and returning cars in different years.
- (iv) There will be a screen for capturing and displaying information regarding which customers and employees both are able to login on the site
- (v) There will be a screen that will capture information regarding to all types of cars and their specification with Images.
- (vi) There will be a screen that will capture information regarding to garage for checking customer journey on our web site.
- (vii) There will be a screen that will capture information regarding which customer know, how many cars are available for best prices.
- (viii) There will be a screen that will capture information regarding which how many are yet to return.

## 5.CODING :

```
<!DOCTYPE html>

<html lang="en">

<head>

    <!-- <link rel="apple-touch-icon" sizes="180x180" href="/apple-touch-icon.png">

    <link rel="icon" type="image/png" sizes="32x32" href="/favicon-32x32.png">

    <link rel="icon" type="image/png" sizes="16x16" href="/favicon-16x16.png">

    <link rel="manifest" href="/site.webmanifest">

    <meta charset="UTF-8"> -->

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Cargo car rental: Best Car rental site in Pune</title>

    <meta name="description" content="It's Car Rental Site to Book a car in pune">

    <link rel="shortcut icon" href="img/favicon_io/favicon.ico" type="image/x-icon">

    <link rel="stylesheet" href="style.css">

    <link rel="stylesheet" href="utility.css">

    <!-- <link rel="stylesheet" href="" -->

    <!-- <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha3/dist/css/bootstrap.min.css"> -->

</head>

<body>

    <header>

        <nav>

            <div class="head">

            </div>

            <div class="search">

                <input type="text" name="" id="" placeholder="Search here">

            </div>

            <button class="btn">

                Search
```



```
</button>

<div class="login">

  <a href="login.html">Login</a>

</div>

<div class="register">

  <a href="register.html">Register</a>

</div>

</nav>

<!-- <div class="login">

  <a href="login.html">Login</a>

</div> -->

<!-- <div class="search">

  <input type="text" name="" id="">

</div> -->

</header>

<main>

<section>

  <div class="slider">

    <div class="btn2">

      <button onclick="back()">

        <ion-icon name="chevron-back-circle-outline"></ion-icon>

      </button>

      <button onclick="next()"><ion-icon name="chevron-forward-circle-outline"></ion-icon></button>

    </div>

  </div>

  <div class="btn3">

    <h3>Daily Rentals</h3>

  </div>

  <div class="container">

    <div class="box2">

      <h3>Your safety is our priority</h3>
```

```
<div class="city">

    <h5>Select your City</h5>

    <select name="Area Name" id="city-name">

        <option value="Hadapsar">Hadapsar</option>

        <option value="Pimpri-Chichwad">Pimpri-Chichwad</option>

        <option value="Shivaji nagar">Shivaji Nagar</option>

        <option value="">Katraj</option>

        <option value="Swargate">Swargate</option>

        <option value="Bhosari">Bhosari</option>

        <option value="Wagholi">Wagholi</option>

    </select>

</div>

<div class="departure">

    <h5>

        when do you need a car?

    </h5>

    <h6>Pickup Time</h6>

</div>

<div class="timing">

    <input type="date" name="" id="start" required>

    <input type="time" name="" id="begin" required placeholder="HH:MM:SS">

    <ion-icon name="time-outline"></ion-icon>

</div>

<div class="departure">

    <h5>

        Till when do you need a it?

    </h5>

    <h6>Dropoff Time</h6>

</div>

<div class="timing2">

    <input type="date" name="" id="" required>

    <input type="time" required>

    <ion-icon name="time-outline"></ion-icon>

</div>

<div class="search2">
```

```
<button><a href="search.html">Search Cars</a>

</button>

</div>

</div>

</div>

</div>

</section>

<div class="box3">

  <h3>WHY CHOOSE CARGO CAR RENTAL</h3>

</div>

<div class="whyimg">

</div>

<div class="company">

  <h3>FEATURED IN</h3>

  <H5>A glimpse of how we are changing the Indian Car Rental Industry, one car at a time</H5>

</div>

<div class="company-slide">

  <div class="company-slider">

  </div>

</div>

<div class="review">

  <ion-icon name="logo-electron"></ion-icon>

  <h3>Testimonials</h3>
```

<h4>Here is what our users are saying</h4>

<div class="review-slider">

<div class="wrapper">











</div>

</div>

</div>

<div class="fandq">

<h3>FAQ's</h3>

<h4>--What Is Cargo Car Rental Service</h4>

<p>

Cargo Car Rental is a self-drive brand owned by ORIX, Japan's second-largest self-drive car rental company currently managing more than 63,000 cars in Japan. With MyChoize, we aim to render Indian users with the best car rental service, providing the best of Japanese services and technology at Indian prices.

</p>

<p>

Cargo Car Rental self-drive cars offer:

</p>

<ul>

<li>Anywhere Delivery</li>

<li>Privacy & Freedom</li>

<li>Limited Liability</li>

<li>Unlimited Kilometers</li>

<li>Clean & Well-Maintained Fleet</li>

<li>Easy & Quick Online Booking</li>

<li>Unbeatable Rates</li>

</ul>

</div>

```
</main>

<footer>

<div>

<nav>

<ul>

<li> <a href="about2.html">About us</a></li>

<li> <a href="Contact.html">Contact us</a> </li>

<li><a href="terms.html">Terms and Condition</a></li>

<li><a href="privacy.html">Privacy policy</a></li>

</ul>

</nav>

</div>

<div class="foot">

<p>

    Powered by the PSB Creation

</p>

</div>

</footer>

<script type="module" src="https://unpkg.com/ionicons@7.1.0/dist/ionicons/ionicons.esm.js"></script>

<script nomodule src="https://unpkg.com/ionicons@7.1.0/dist/ionicons/ionicons.js"></script>

<script>

    var mainimg = document.querySelector(".op");

    var sliderimg = ["sliderimg/bg0.jpg", "sliderimg/bg1.jpg", "sliderimg/bg2.jpg", "sliderimg/bg3.jpg", "sliderimg/bg4.jpg", "sliderimg/bg5.jpg"]

    var num = 0;

    function next() {

        num++;

        if (num >= sliderimg.length) {

            num = 0;

            mainimg.src = sliderimg[num]
```

```
    }

    else {

        mainimg.src = sliderimg[num]

    }

};

function back() {

    num--;

    if (num < 0) {

        num = sliderimg.length - 1;

        mainimg.src = sliderimg[num]

    }

    else {

        mainimg.src = sliderimg[num]

    }

}

</script>

<script src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.11.7/dist/umd/popper.min.js"

    integrity="sha384-zYPOMqeu1DAVkhilqWBUTcbYfZ8osu1Nd6Z89ify25QV9guujx43ITvfi12/QExE"

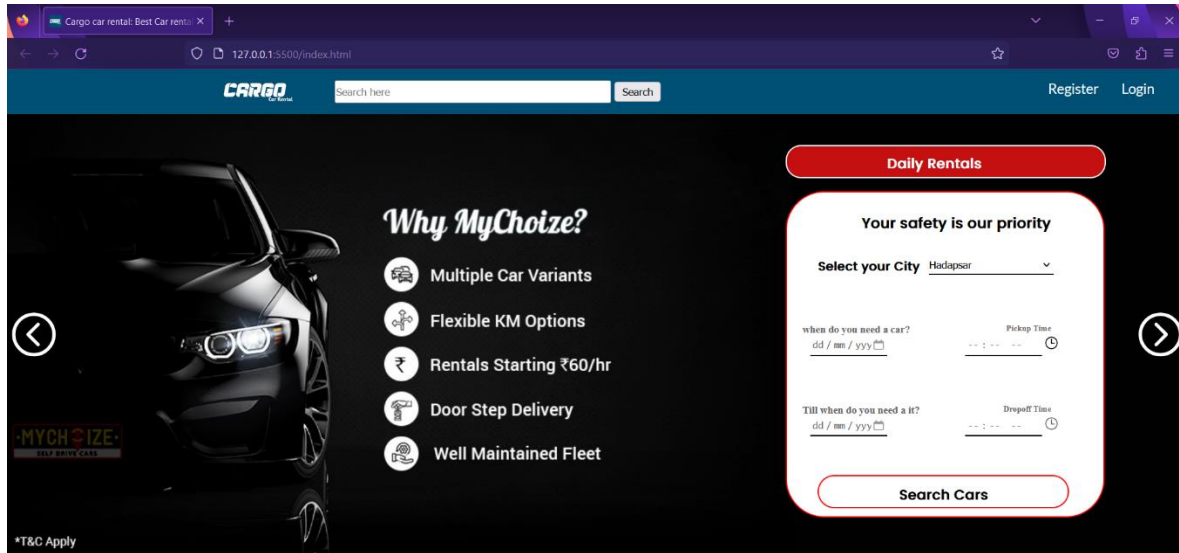
    crossorigin="anonymous"></script>

</body>

</html>
```

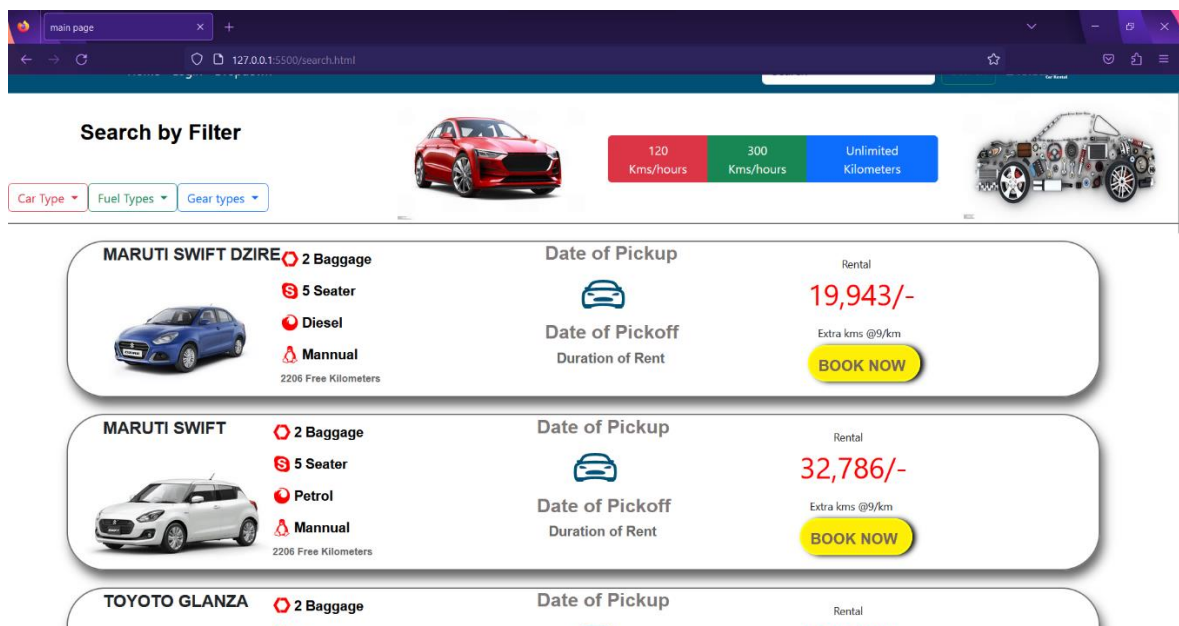
## 6.RESULT / OUTPUT :

### 6.1 Home page

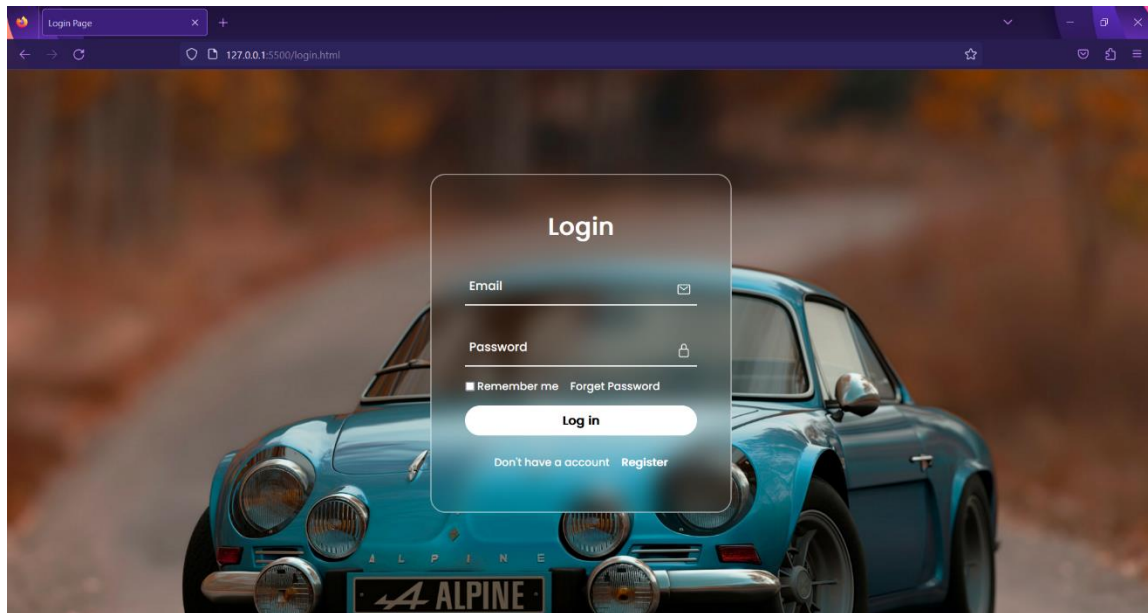


WHY CHOOSE CARGO CAR RENTAL

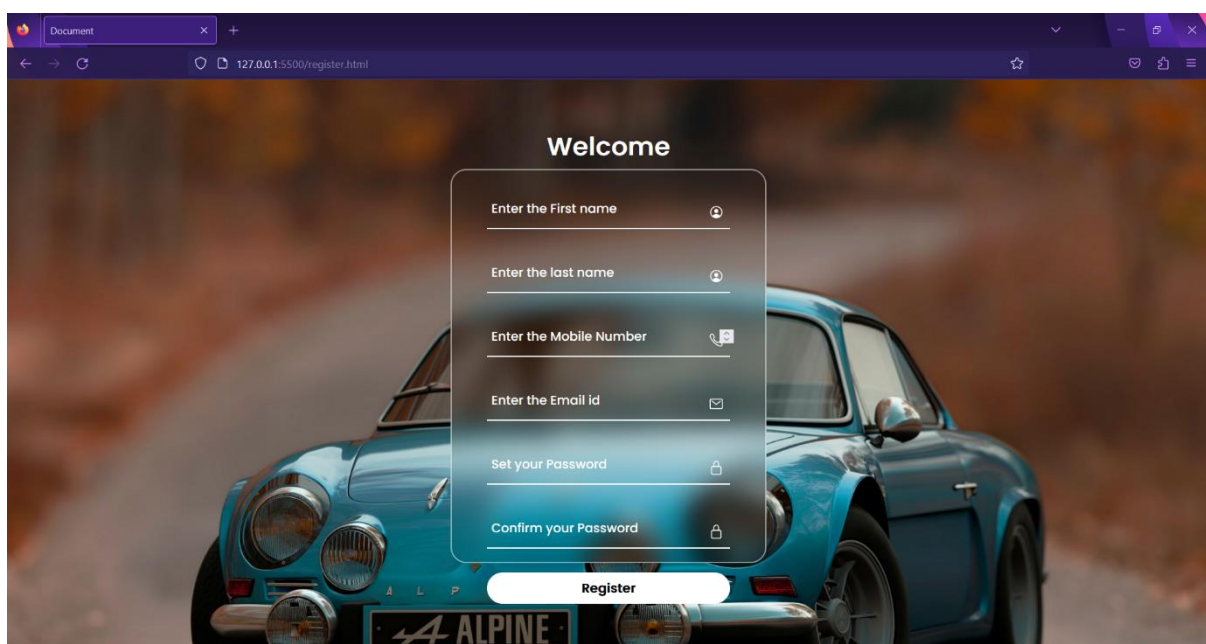
### 6.1.1 Cars With Specification



## 6.2 User Login Panel




## 6.3 Register Panel





## 6.5 Booking Interface





**2 Baggage**

**5 Seater**

**Diesel**

**Mannual**

**Package Type** 300km/day

**Free kms for rental** 8500kms

**Extra km charges** @9/km

**PAYABLE AMOUNT**

**82,708.16/-**

Color

Image

**Owner's Detail**

Name: Om Banke

Contact no. 9867543678

ADDRESS TO PICKUP : Swanand Niwas ,Manjari,Pune 410505



### FAQ's

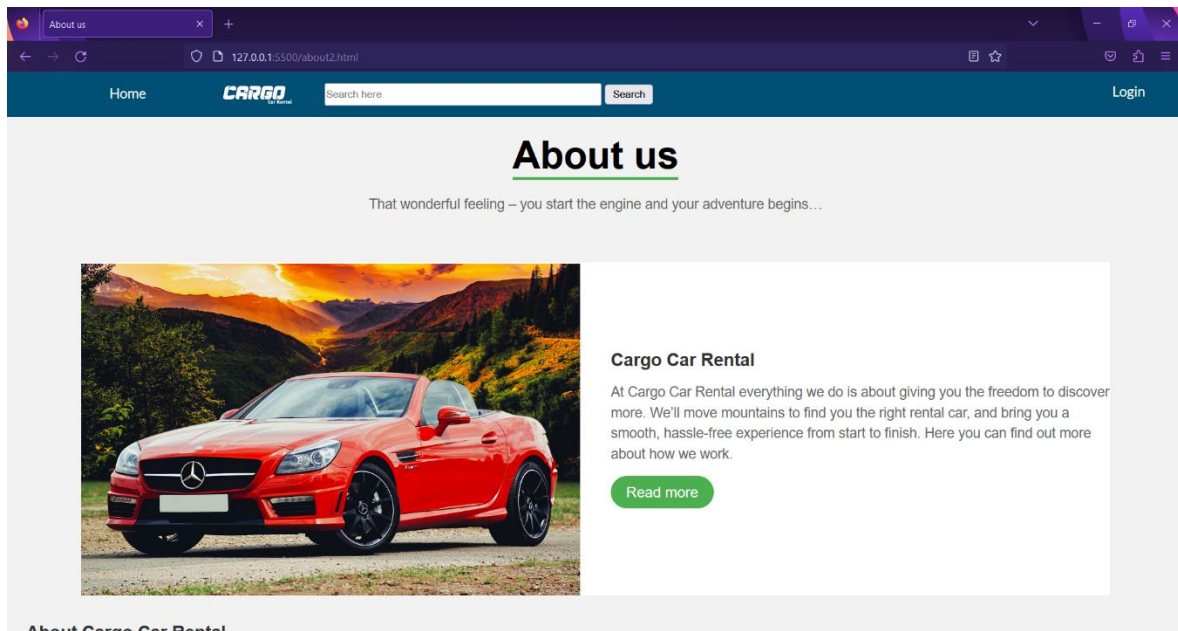
#### --What Is Cargo Car Rental Service

Cargo Car Rental is a self-drive brand owned by ORIX, Japan's second-largest self-drive car rental company currently managing more than 63,000 cars in Japan. With MyChoize, we aim to render Indian users with the best car rental service, providing the best of Japanese services and technology at Indian prices.

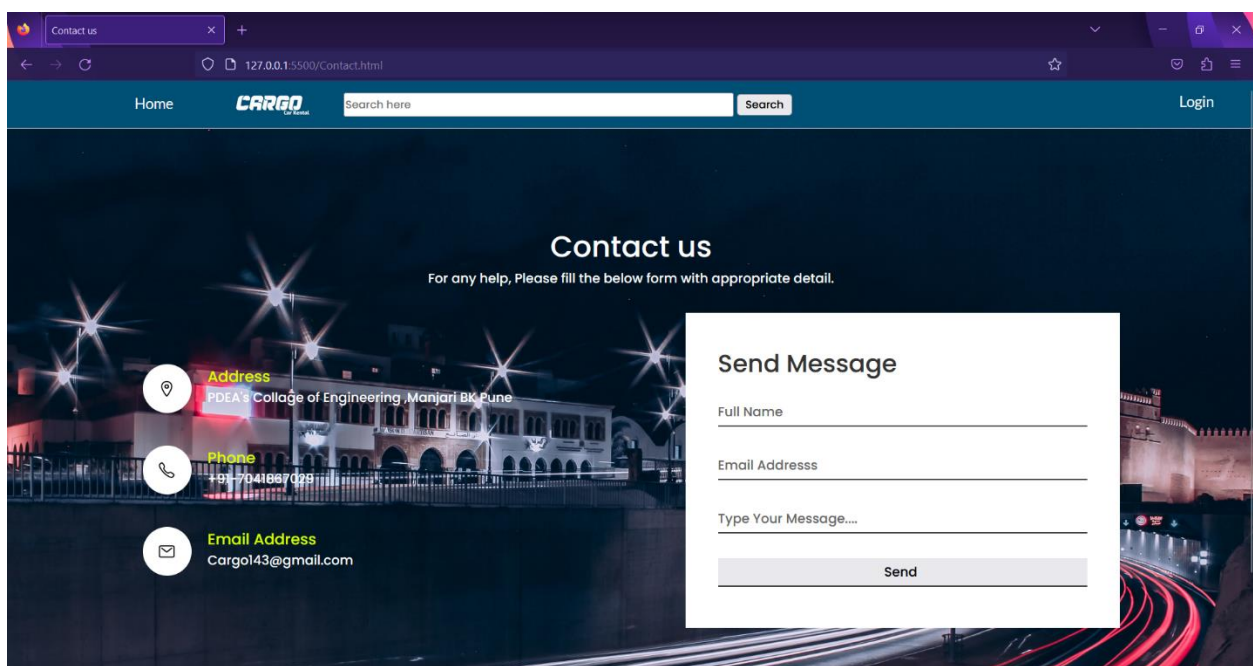
Cargo Car Rental self-drive cars offer:

- Anywhere Delivery
- Privacy & Freedom
- Limited Liability
- Unlimited Kilometers
- Clean & Well-Maintained Fleet
- Easy & Quick Online Booking
- Unbeatable Rates

## 6.5 About us



## 6.5 Contact Us



## 7.CONCLUSION

Car rental business has emerged with a new goody compared to the past experience where every activity concerning car rental business is limited to a physical location only. Even though the physical location has not been totally eradicated; the nature of functions and how these functions are achieved has been reshaped by the power of internet. Nowadays, customers can reserve cars online, rent car online, and have the car brought to their doorstep once the customer is a registered member or go to the office to pick the car.

The web-based car rental system has offered an advantage to both customers as well as Car Rental Company to manage the business and satisfies customers' need at the click of a button efficiently and effectively.

## 8.REFERENCES

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