CAR RENTAL MANAGEMENT SYSTEM

PROJECT REPORT

Submitted by

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Under the guidance

of

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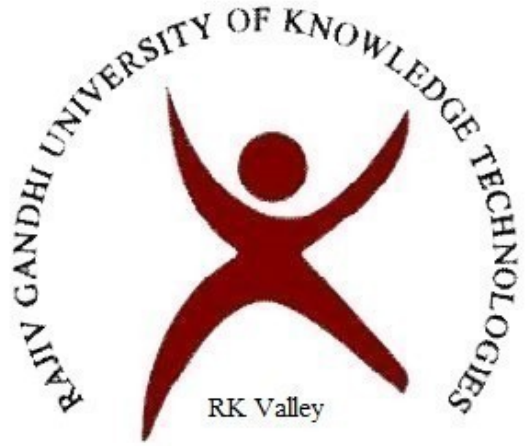

Rajiv Gandhi University of Knowledge and Technologies(RGUKT),
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Declaration

We, hereby declares that this report entitled "**Car Rental Management System**" submitted by us under the guidance and supervision of **K Vinod Kumar** is a bonafide work. We also declare that it has not been submitted previously in part or in full to this university or other university or institution for the award of any degree or diploma.

We will be solely responsible if any kind of plagiarism is found.

Date: 05-05-2023
RGUKT RK Valley

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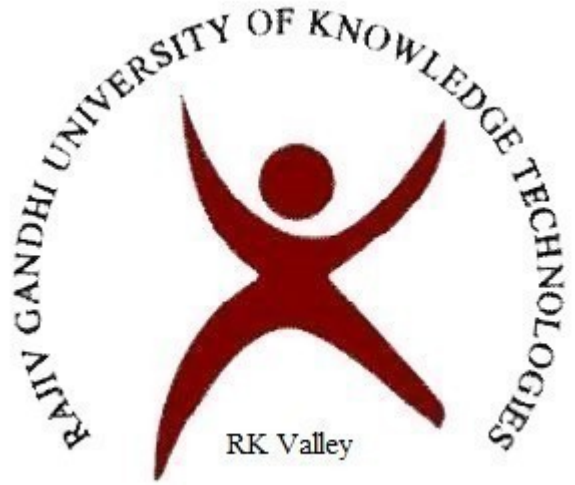

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CERTIFICATE

This is to certify that the project entitled " Car Rental Mangement System" has been submitted to the Department of computer science and enginnering , Rajiv gandhi university of knowledge technologies , Rk valley for the fullfillment of the requirement for the award of the degree of bachelor of technology in "computrer science and engineering" by following students of final year of B Tech.

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ACKNOWLEDGEMENT

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We are also thankful to everyone who supporeted us to complete this project successfully .

Thank you all

Table of Contents

CHAPTER-1

INTRODUCTION TO ONLINE CAR RENTAL SYSTEM

1.1 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.

1.2 Reason for the Project

The advancement in Information Technology and internet penetration 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 E-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 global world instead of limiting their services to their local domain alone, thus increase their return on investment (ROI).
- 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.
- Group bookings: Allows the customer to book space for a group in the case of weddings or corporate meetings (Event management).

CHAPTER-2

CAR RENTAL SERVICES

2.1 How Car Rental Services 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.

2.2 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.

CHAPTER-3

FUNCTIONAL AND NON-FUNCTIONAL REQUIREMENTS

3.1Functional Requirements

Requirement analysis is a software engineering technique that is composed of the various tasks that determine the needs or conditions that are to be met for a new or altered product, taking into consideration the possible conflicting requirements of the various users.

Functional requirements are those requirements that are used to illustrate the internal working nature of the system, the description of the system, and explanation of each subsystem. It consists of what task the system should perform, the processes involved, which data should the system holds and the interfaces with the user. The functional requirements identified are:

a. Customer's registration: The system should allow new users to register online and generate membership card.
b. Online reservation of cars: Customers should be able to use the system to make booking and online reservation.

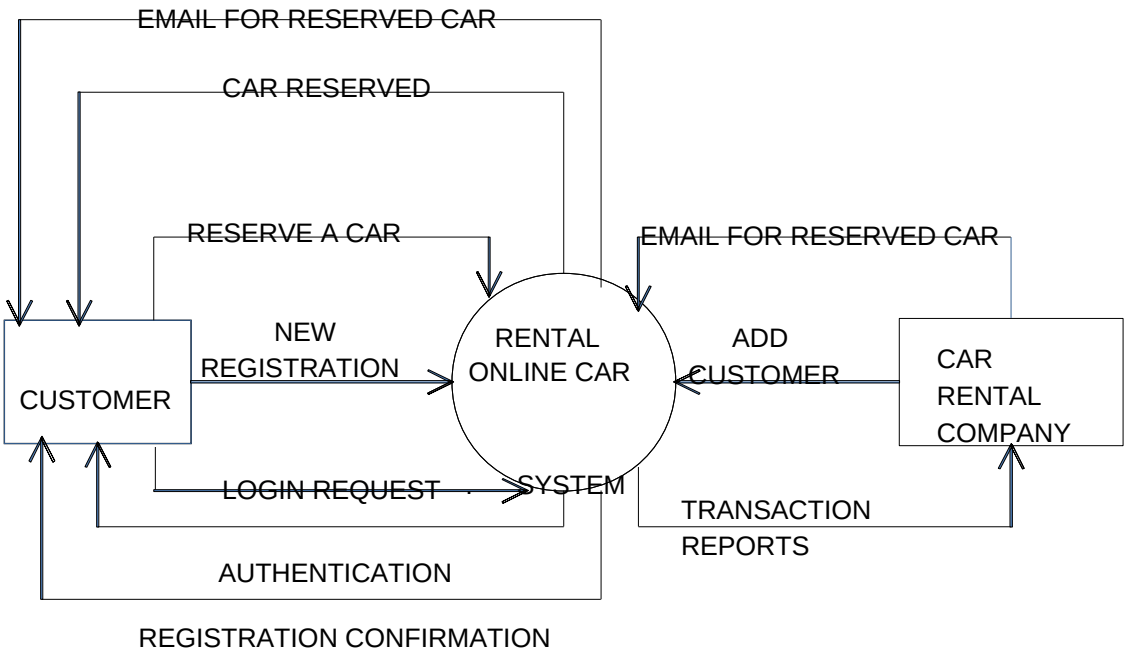
c. Automatic update to database once reservation is made or new customer registered: Whenever there's new reservation or new registration, the system should be able update the database without any additional efforts from the admin.
d. Feedbacks to customers: It should provide means for customers to leave feedback.

3.2Non-Functional Requirements

It describes aspects of the system that are concerned with how the system provides the functional requirements. They are:

a. 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.
b. 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 50 seconds for highly complicated task and 20 to 25 seconds for less complicated task.
c. Error handling: Error should be considerably minimized and an appropriate error message that guides the user to recover from an error should be provided. Validation of user's input is highly essential. Also the standard time taken to recover from an error should be 15 to 20 seconds.
d. Availability: This 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 the business process is not severely affected.

Figur



e 4.1 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
- 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

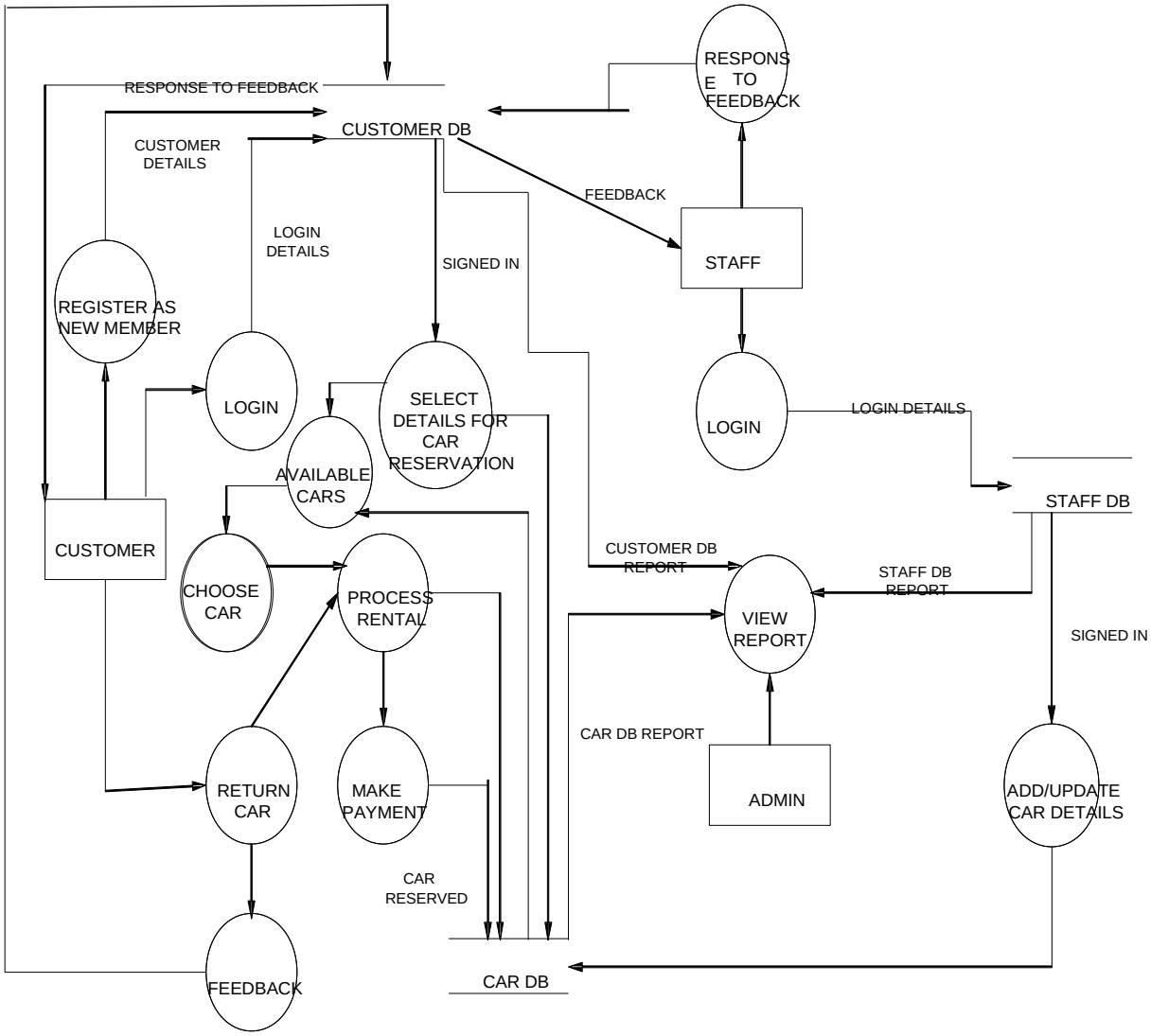


Figure 4.2 Level 1 DFD of Online Car Rental System

CHAPTER-5

USE-CASE DIAGRAMS

5.1 Actor and Use Case Description

Actor and use case description shows 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 send 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 send to the customer once a feedback has been submitted.
Staff	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.
	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

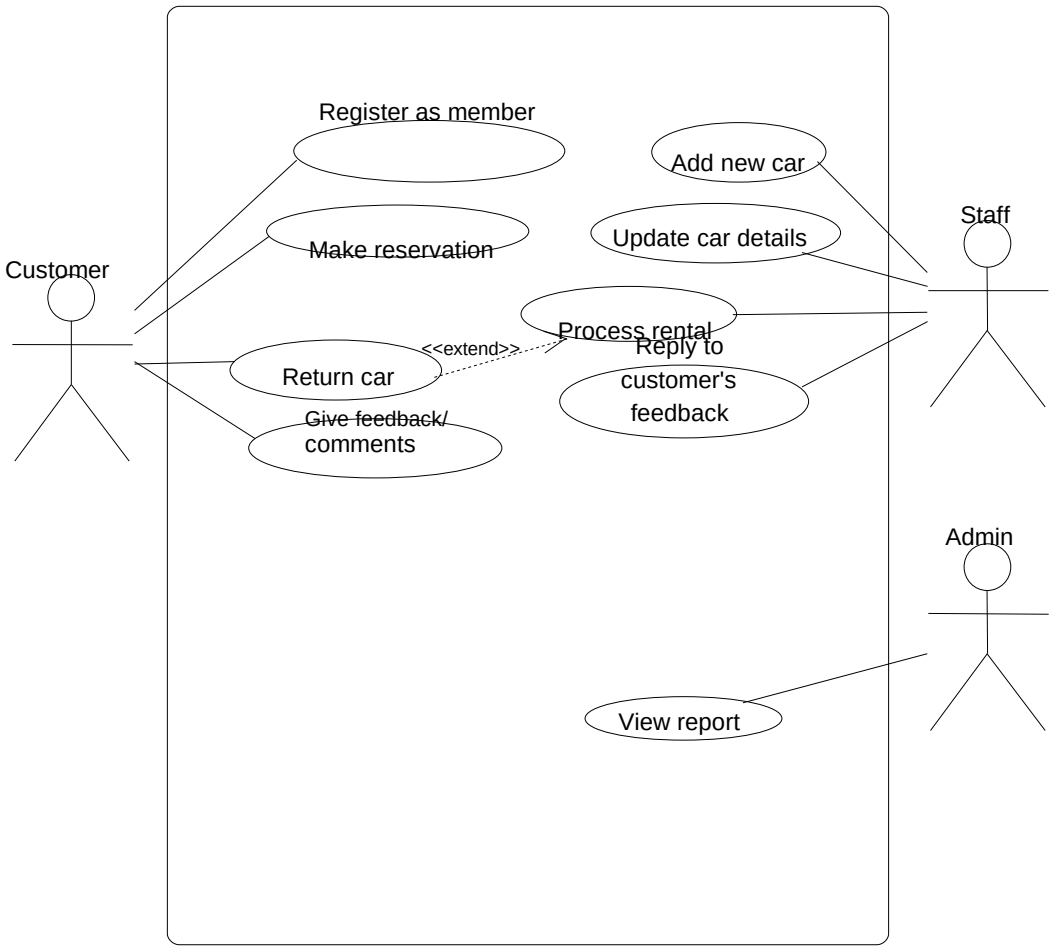


Figure 5.1: E-Car Rental System [use case]

CHAPTER-6

ACTIVITY DIAGRAMS

6.1 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.

6.1.1 Member Registration

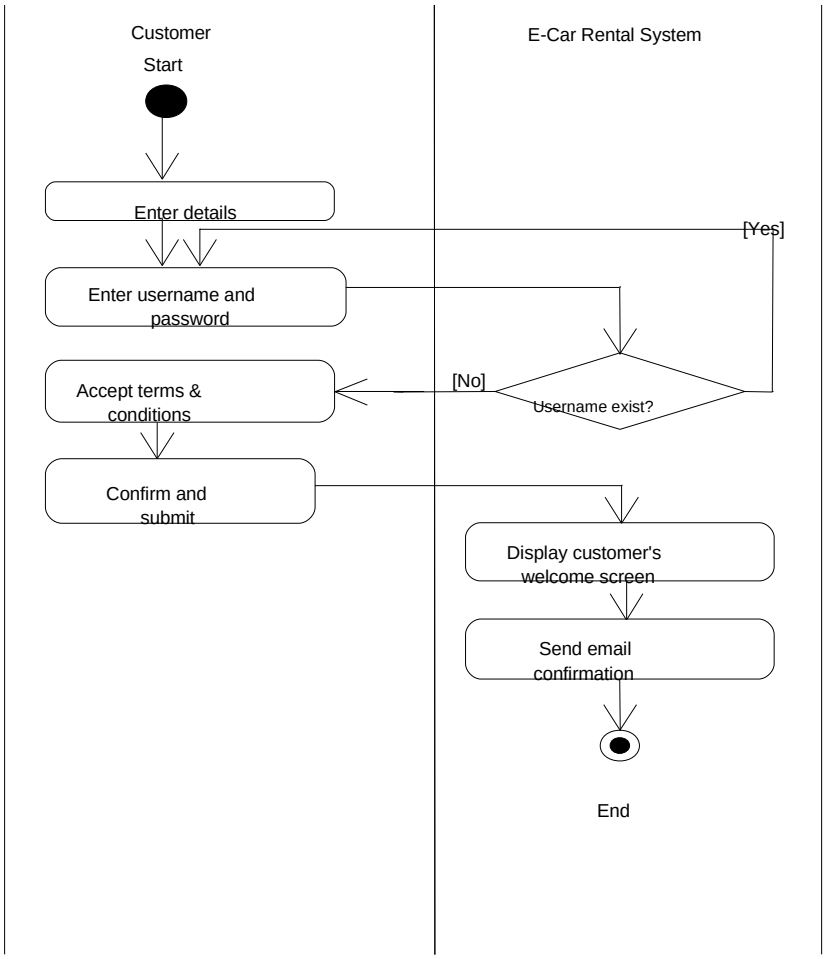


Figure 6.1: Register as member

6.1.2 Profile Modification

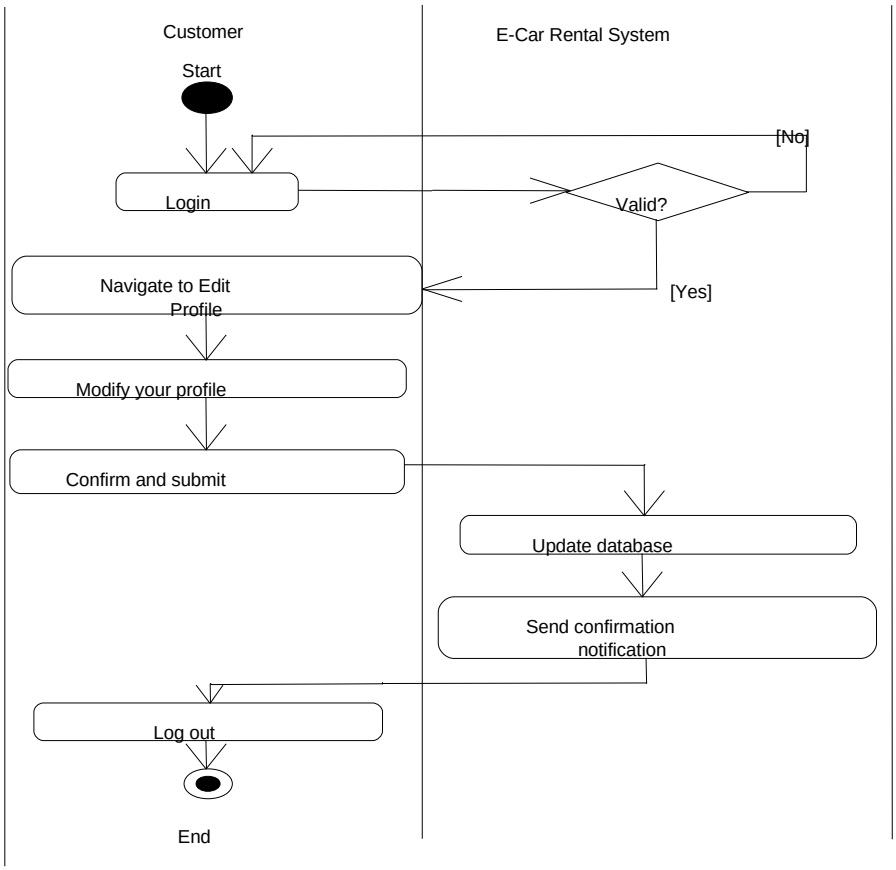


Figure 6.2: Modify profile

6.1.3 Reservation of Car

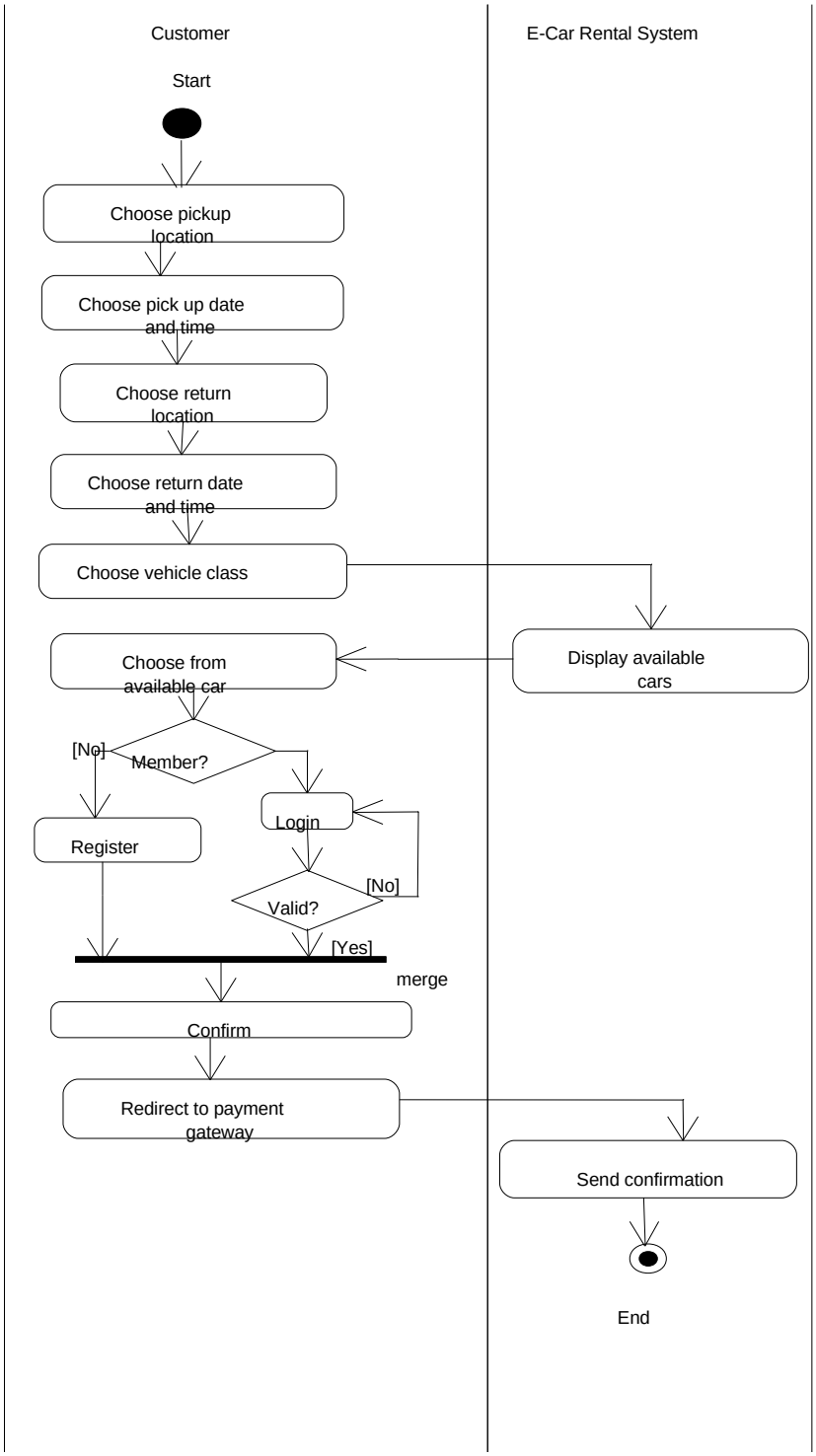


Figure 6.3: Make Reservation

6.1.4 Customer Feedback

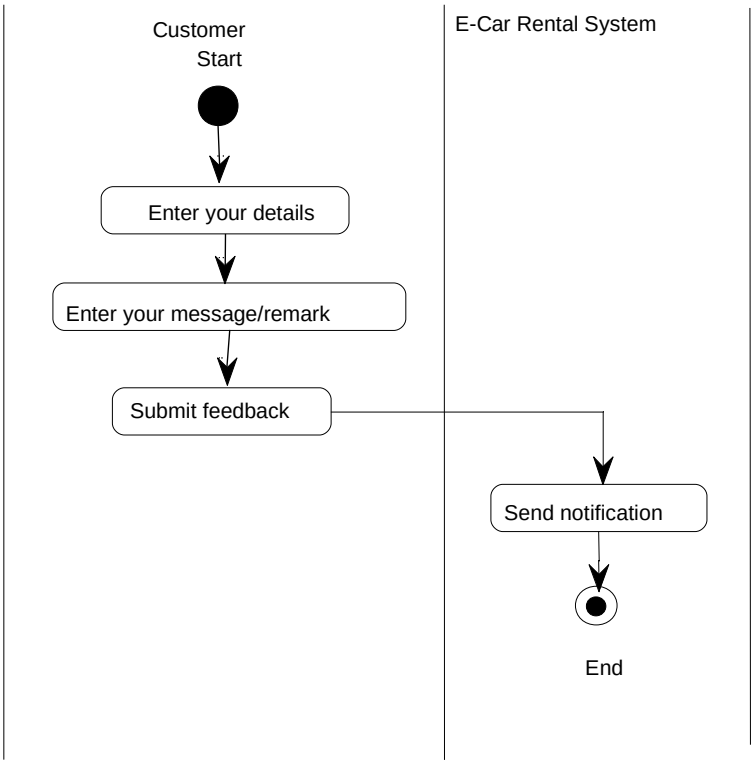


Figure 6.4: Give feedback/comment

6.1.5 Payment of Car Rent

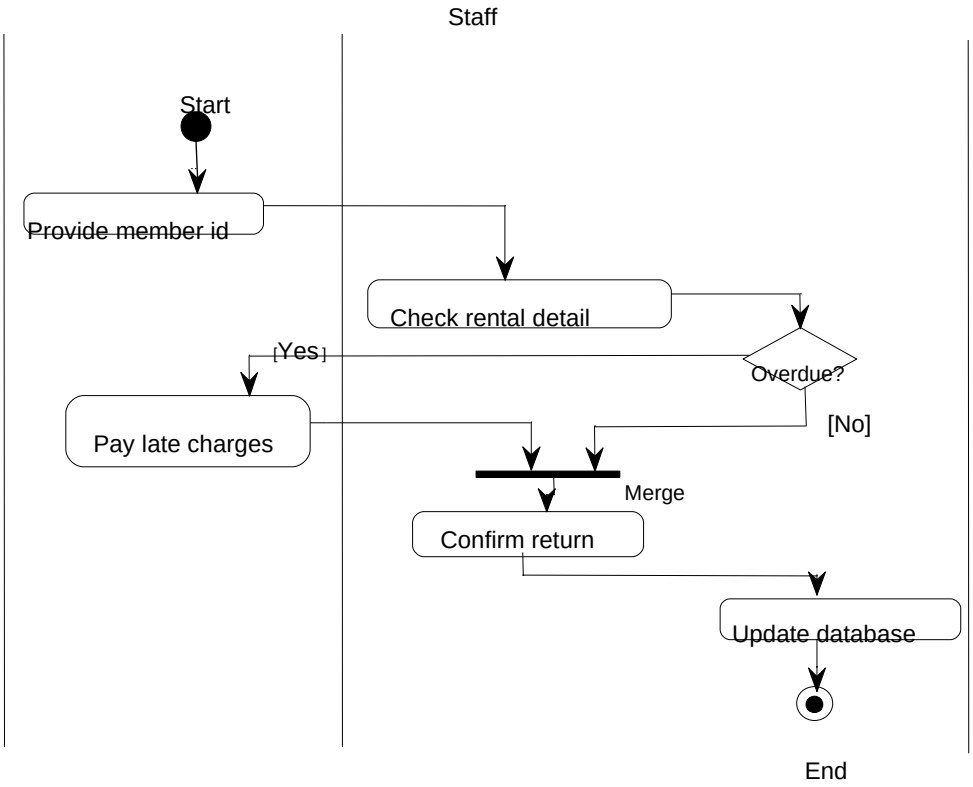


Figure 6.5: Rent a Car

6.1.6 Adding a New Car

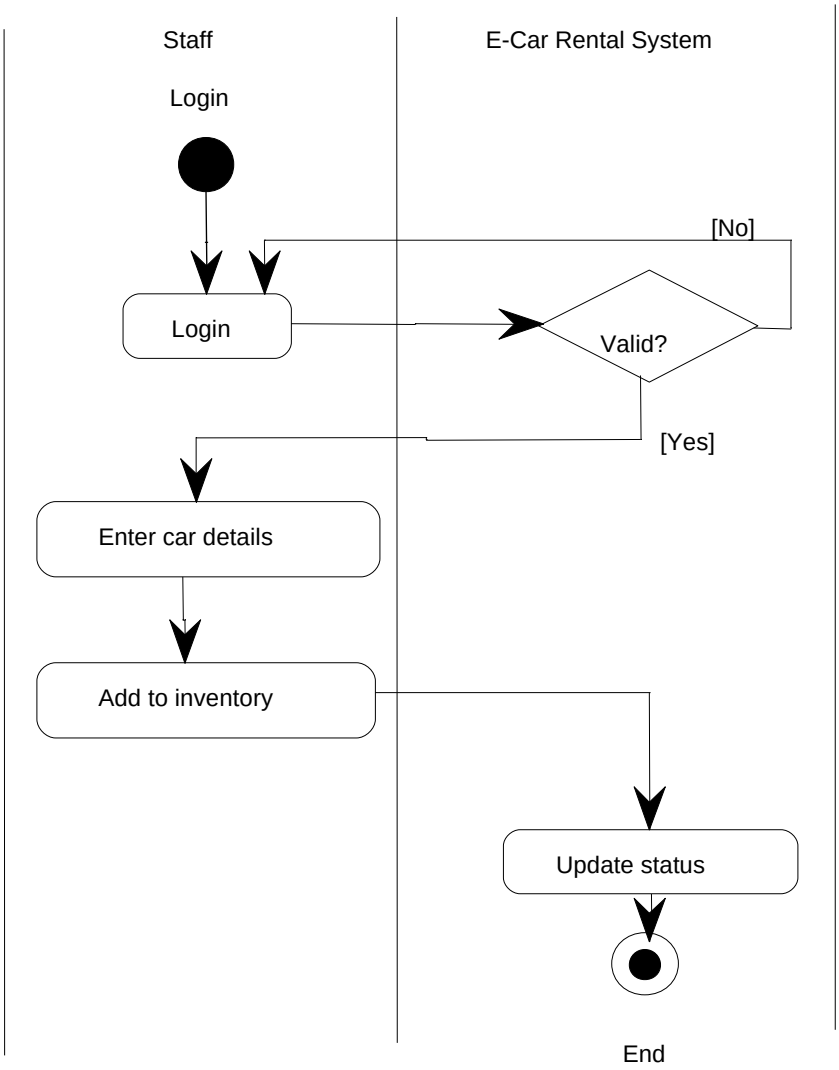


Figure 6.6: Add a New Car

6.1.7 View Report

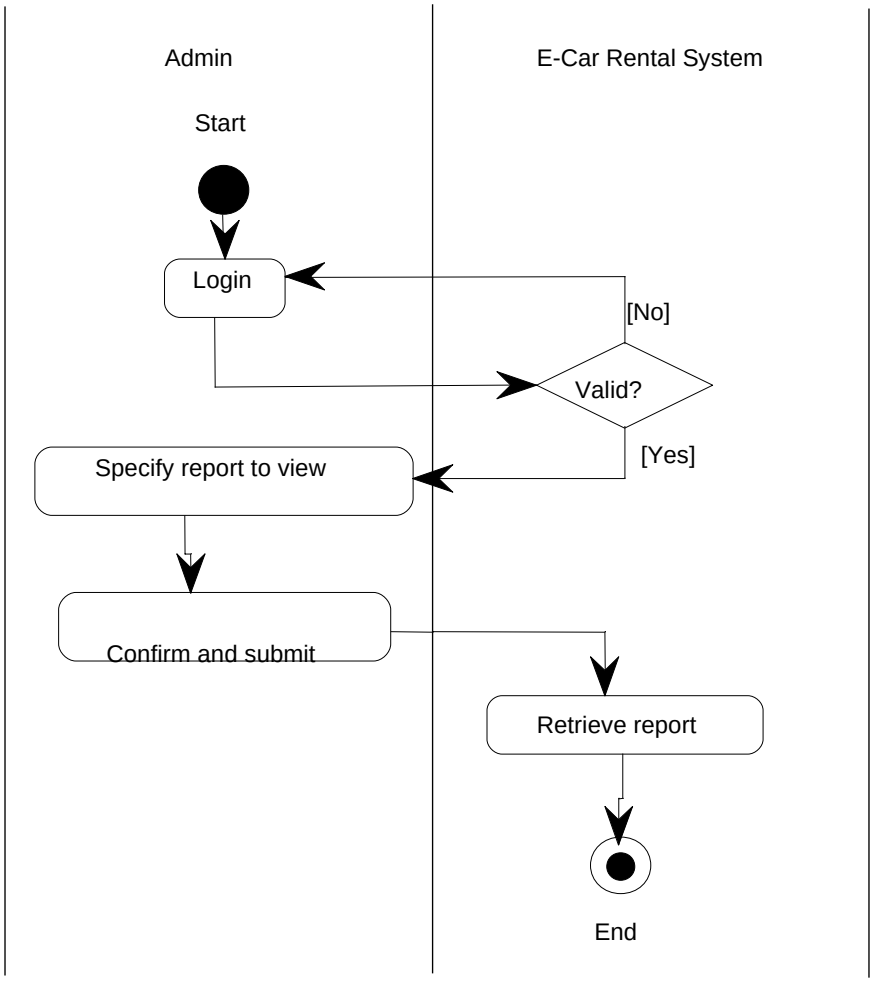


Figure 6.7: View report

CHAPTER-7

SEQUENCE DIAGRAMS

7.1 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

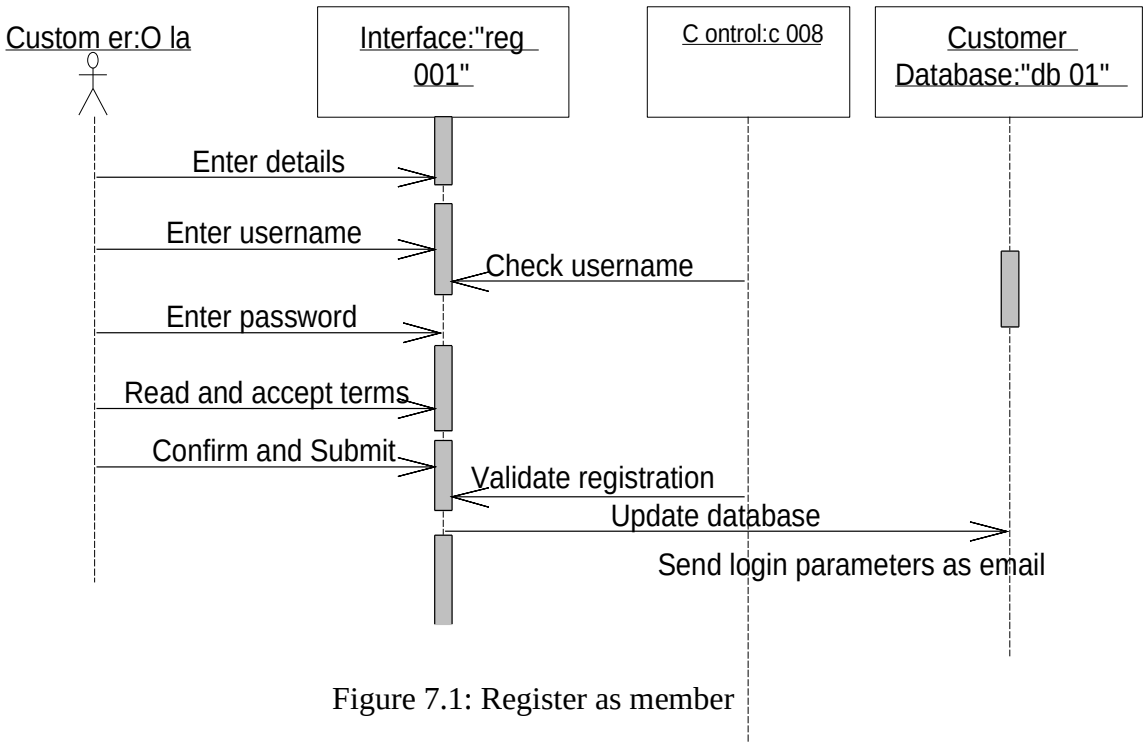


Figure 7.1: Register as member

7.1.2 Reservation of Car

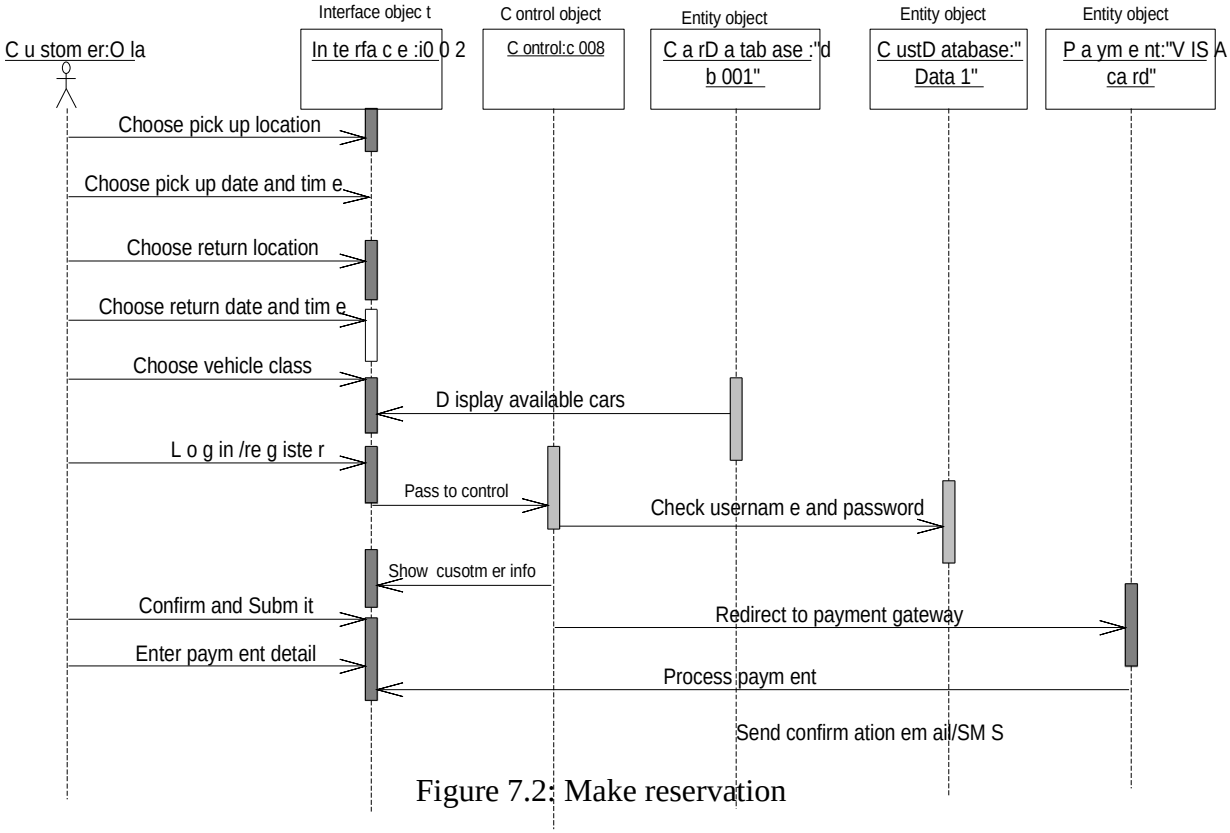


Figure 7.2: Make reservation

7.1.3 Customer Feedback

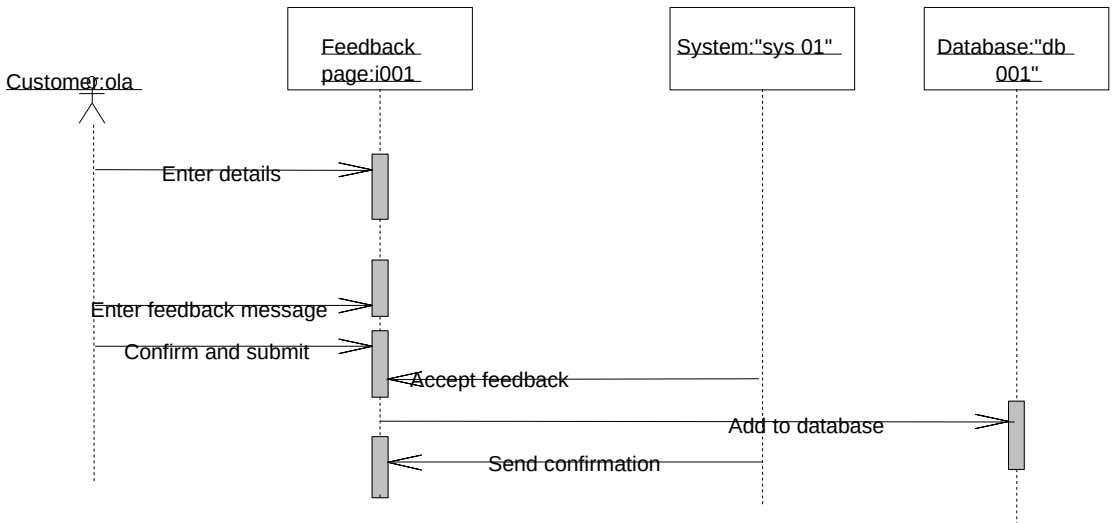
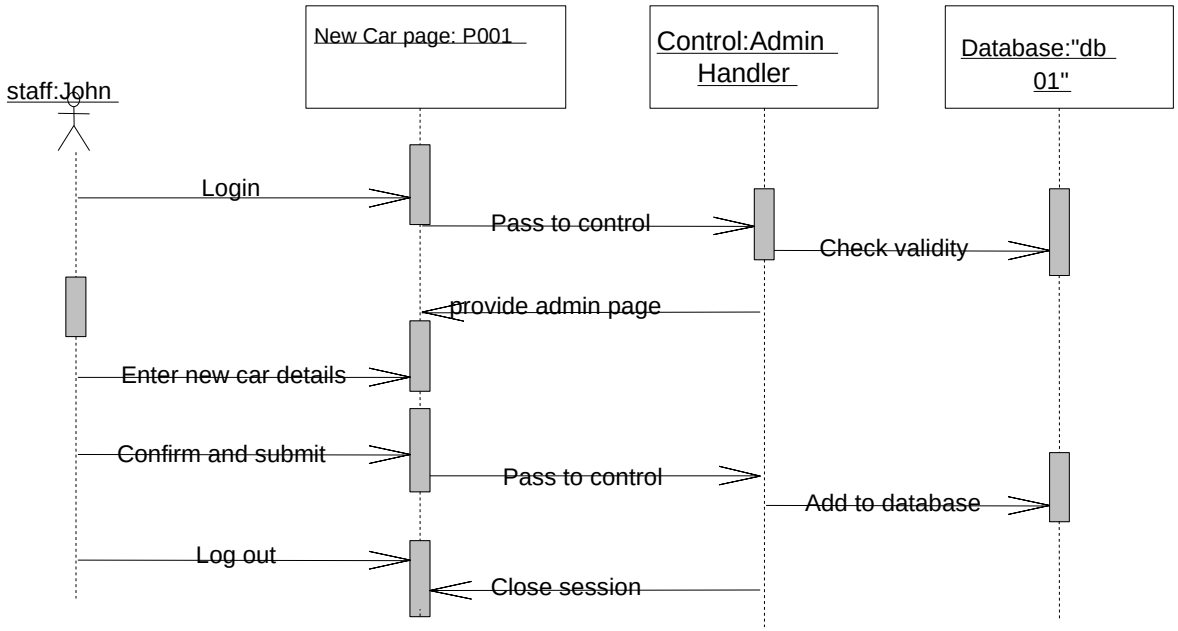


Figure 7.3: Give feedback

7.1.4 Adding a New Car

Fi



gure 7.4: Add new car

7.1.5 Feedback Response

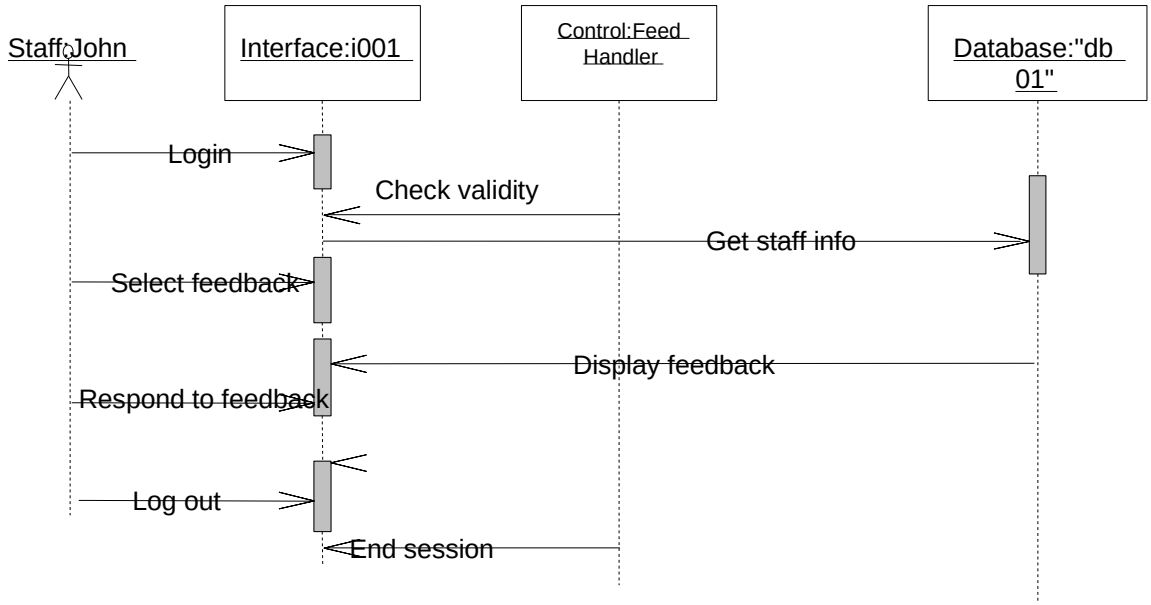


Figure 7.5: Respond to feedback

7.1.6 Return Car and Check Rental Details

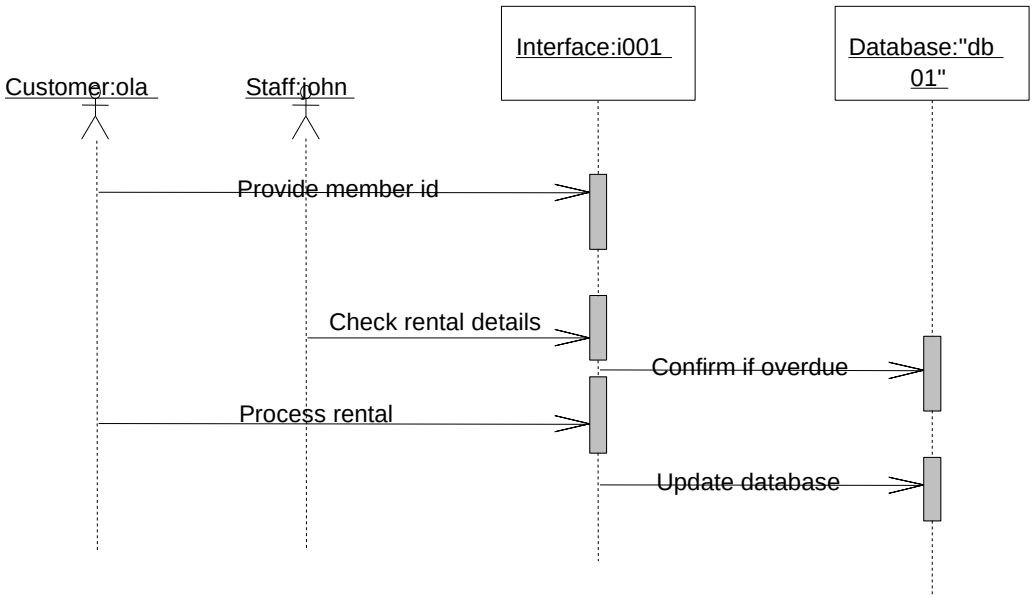


Figure 7.6: Return car

7.1.7 View Report

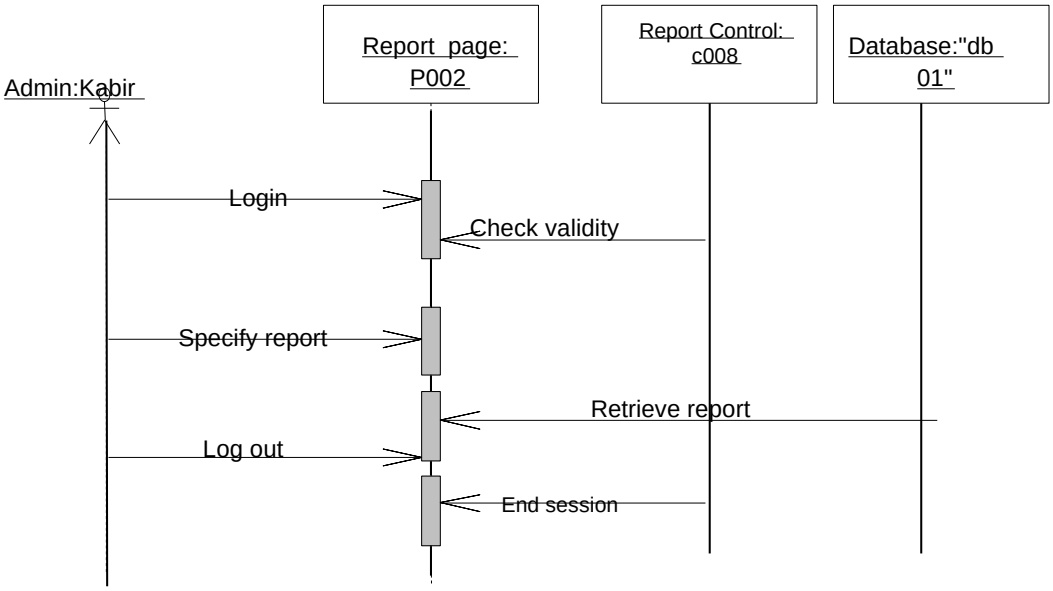


Figure 7.7: View report

CHAPTER-8

CLASS DIAGRAM

8.1 Class Diagram

The class diagram is the main building block, a number of classes are identified and grouped together in a class diagram which helps to determine the statically relations between those objects .

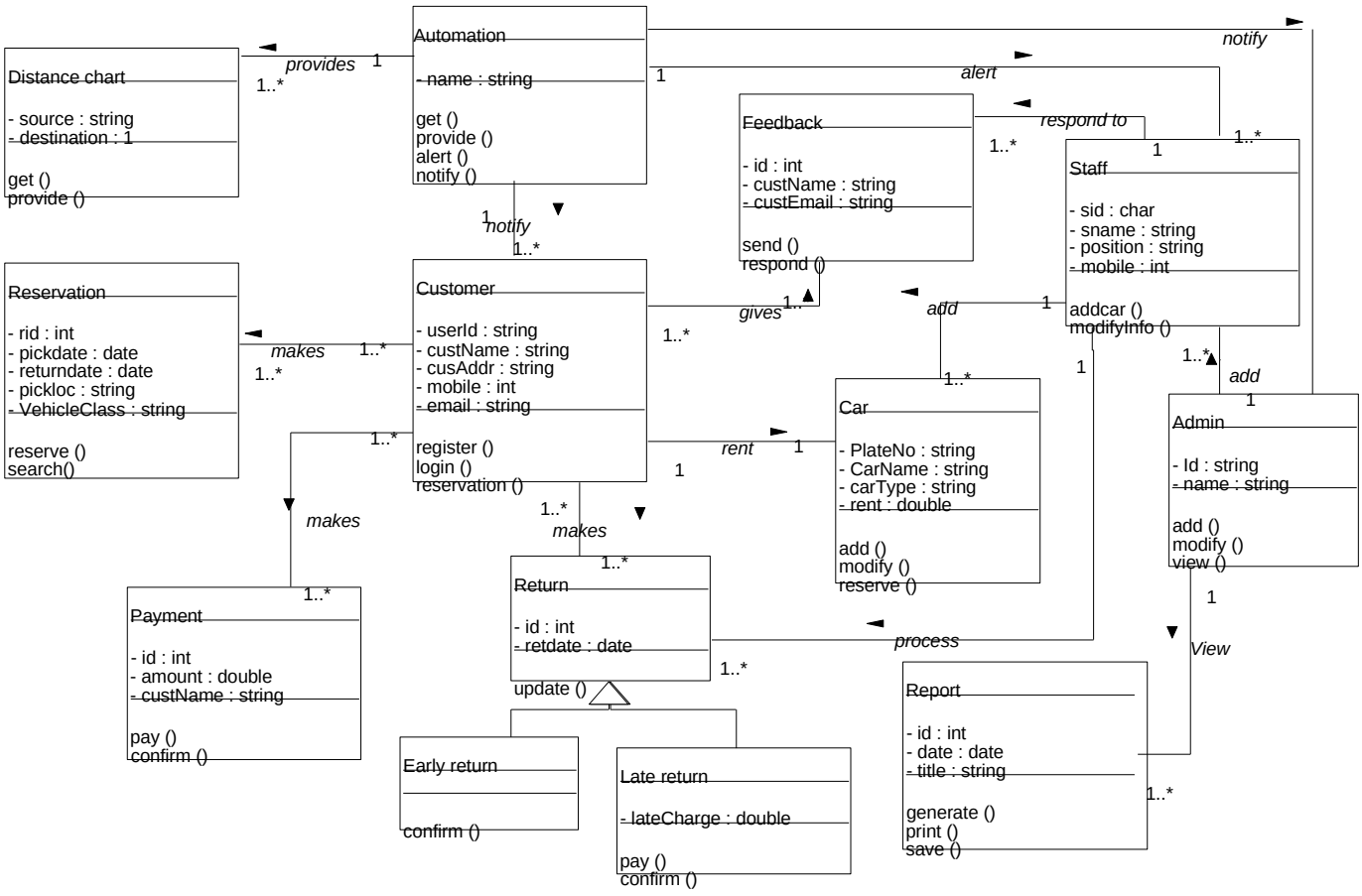


Figure 8.1 Class Diagram of Online Car Rental System

CHAPTER-9 TOOLS

FRONT-END

HTML

Hypertext Markup Language (HTML) is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologoes such as Cascading Style Sheets(CSS) and scripting languages such as JavaScript.

CSS

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation document written in a Markup Language like HTML,CSS is a cornerstone technology of the World Wide Web alongside HTML and CSS.

MySql

MySQL is an open-source relational database management system (RDBMS) based on Structured Query Language (SQL).Its name is a combination of "My", the name of co-founder Michael Widenius's daughter, and "SQL", the abbreviation for Structured Query

Javascript

JavaScript is a client scripting language which is used for creating web pages. It is a standalone language developed in Netscape. It is used when a webpage is to be made dynamic and add special effects on pages like rollover, roll out and graphics.

CHAPTER 10 : TESTING

Tests help the developer to verify that the logic of a piece of the program is correct. Having test coverage of your code helps developers to build new features without phaving to erform lots of manual testing.

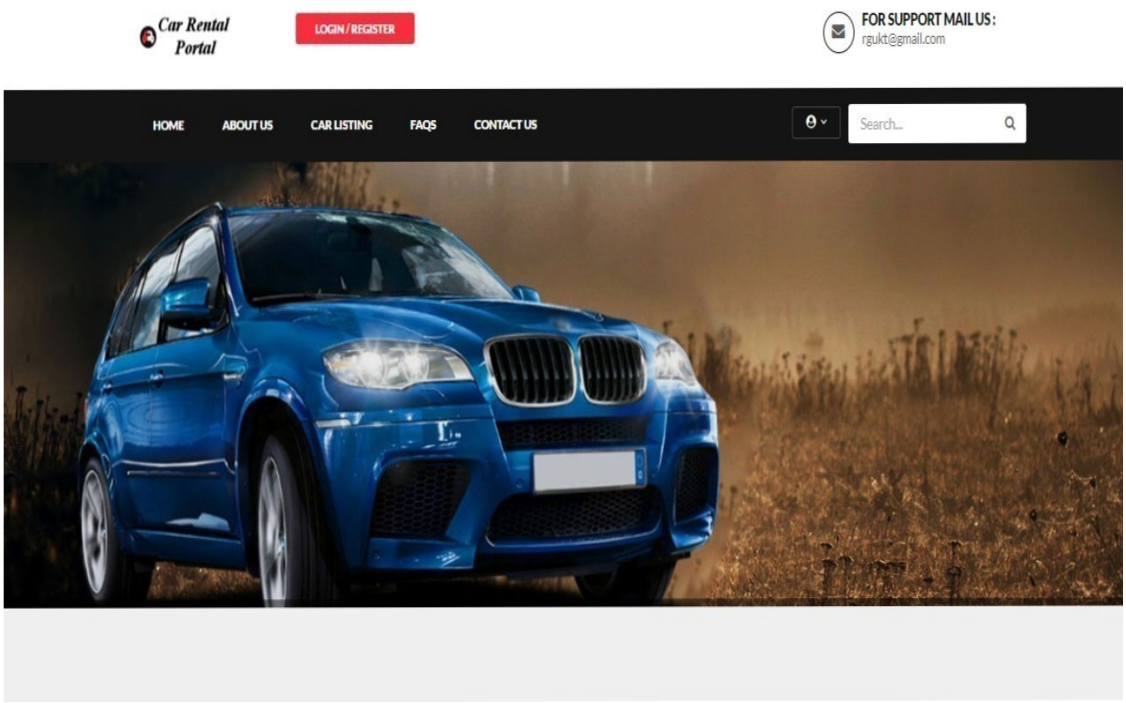
Unit Testing:

A unit test is a piece of code written by a developer that executes a specific functionality in the code to be tested and asserts a certain behavior or state.
The percentage of code that is tested by unit tests is typically called test coverage.
A unit test targets a small unit of code, e.g., a method or a class.

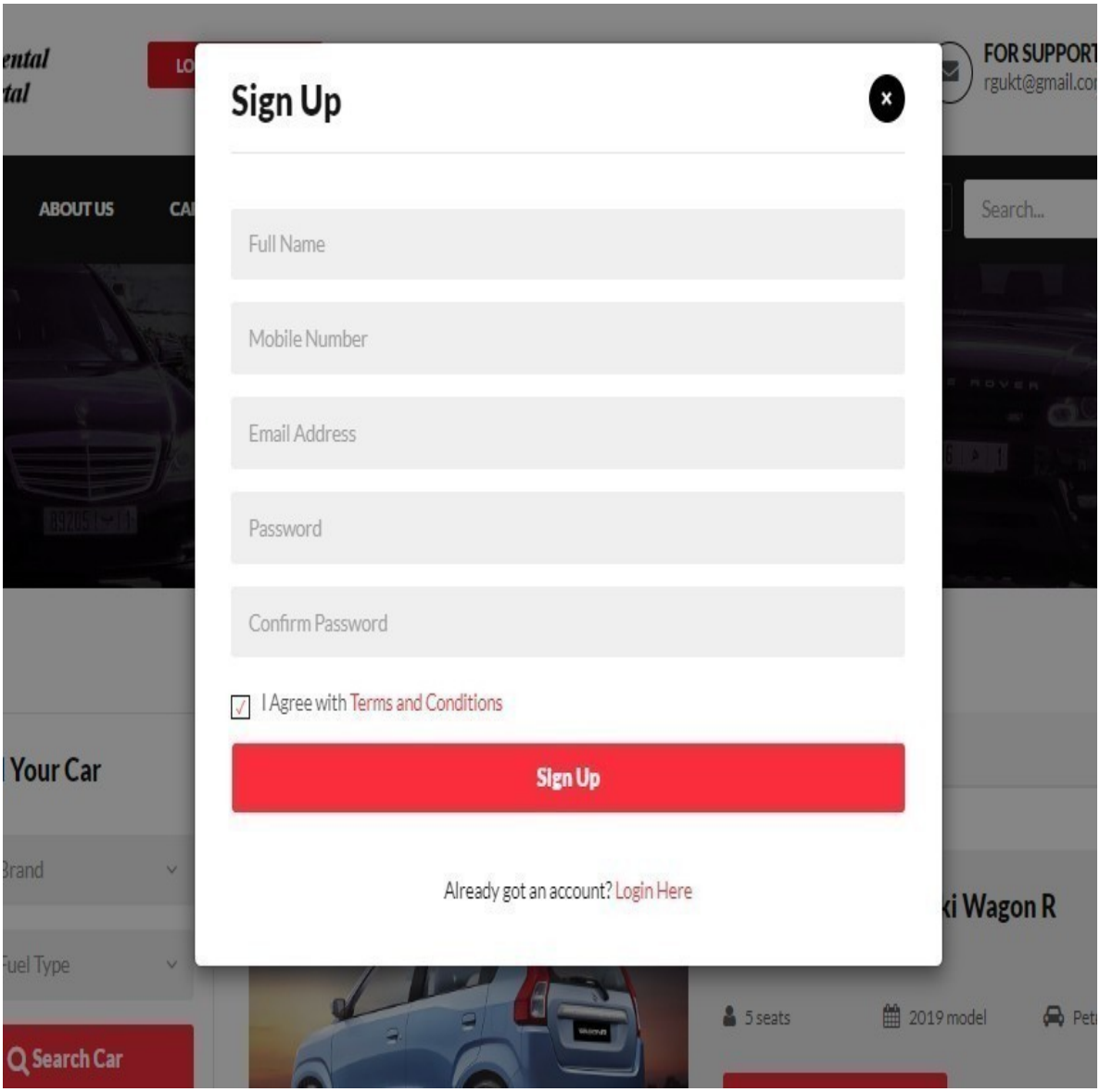
Integration Testing:

Integration testing is an approach where modules are developed, and testing of modules always starts at the finest level of the programming hierarchy and continues towards the lower levels. It’s the extension of unit testing. Integration testing takes a smaller unit of unit testing and tests their behavior as a whole.
Advantages:
1. Code Coverage is higher and easy to track.
2. Majorly helps to build real-time use cases during the end to end testing.
3. Easy to integrate

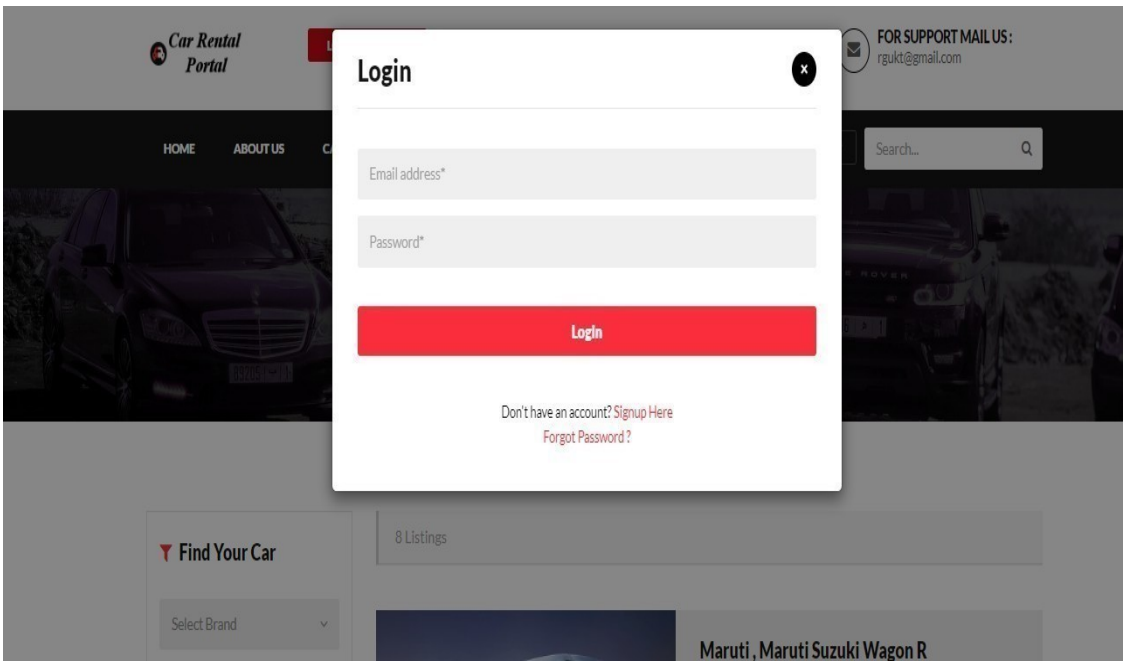
Chapter-11 Over view of a project



Registration of a User



Login of a User



User Bookings

ajith

Profile Settings
Update Password
My Booking
Post a Testimonial
My Testimonials
Sign Out

MY BOOIKNGS

Booking No #615694145

BMW , BMW 5 Series

Confirmed

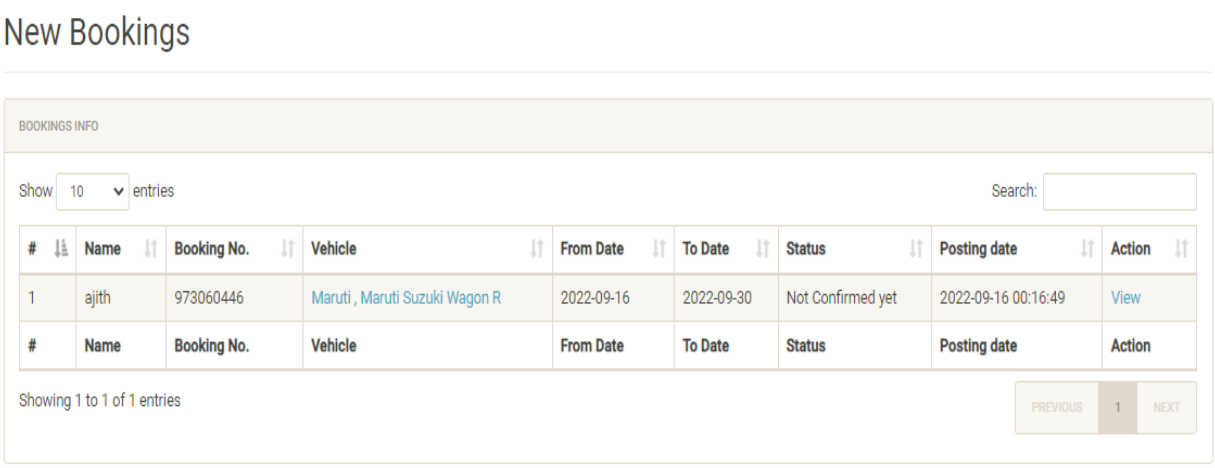
From 2022-09-27 To 2022-09-30

Message: jihi

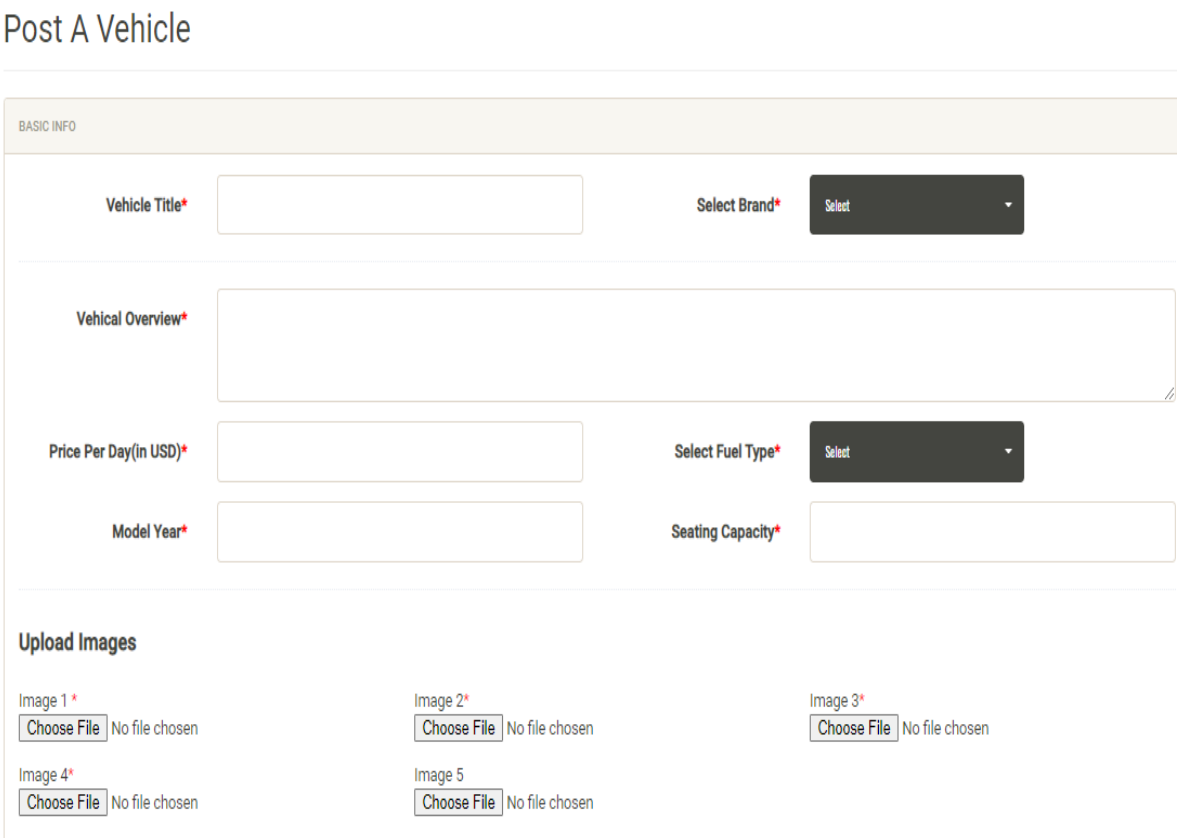
Invoice

Car Name	From Date	To Date	Total Days	Rent / Day
BMW 5 Series, BMW	2022-09-27	2022-09-30	3	1000
Grand Total				3000

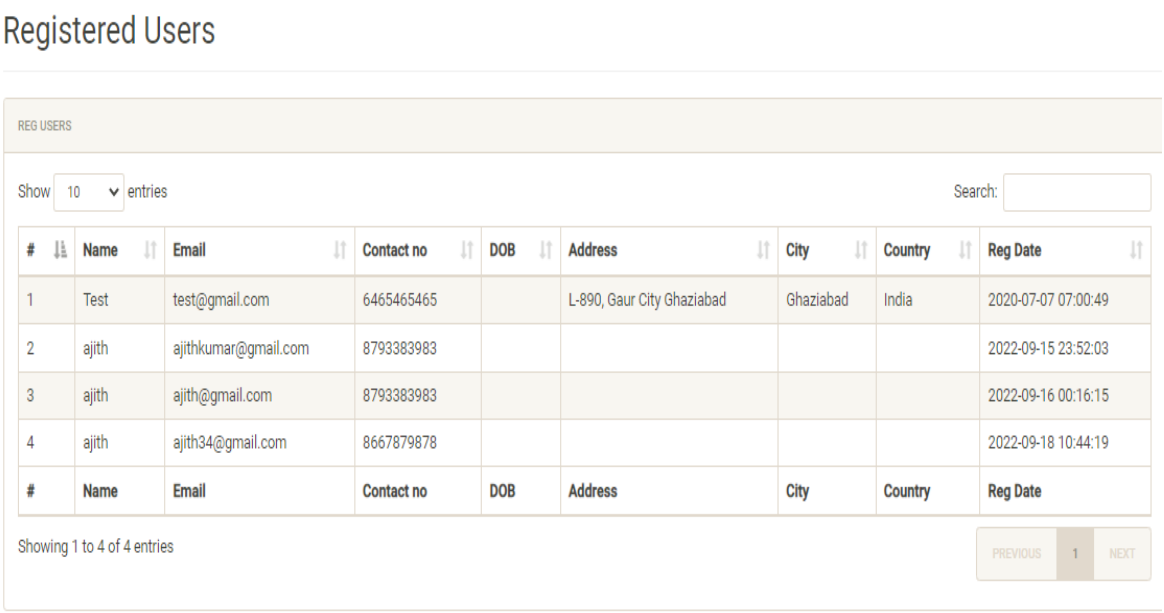
New Bookings



Posting a new Car



Registered Users in Admin Page



Registered Users

REG USERS

Show 10 entries

Search:

#	Name	Email	Contact no	DOB	Address	City	Country	Reg Date
1	Test	test@gmail.com	6465465465		L-890, Gaur City Ghaziabad	Ghaziabad	India	2020-07-07 07:00:49
2	ajith	ajithkumar@gmail.com	8793383983					2022-09-15 23:52:03
3	ajith	ajith@gmail.com	8793383983					2022-09-16 00:16:15
4	ajith	ajith34@gmail.com	8667879878					2022-09-18 10:44:19
#	Name	Email	Contact no	DOB	Address	City	Country	Reg Date

Showing 1 to 4 of 4 entries

PREVIOUS 1 NEXT

CPATER-12 CODE

```
SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
SET AUTOCOMMIT = 0;
START TRANSACTION;
SET time_zone = "+00:00";


/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT
*/;
/*!40101 SET
@OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION
*/;
/*!40101 SET NAMES utf8mb

CREATE TABLE `admin` (
  `id` int(11) NOT NULL,
  `UserName` varchar(100) NOT NULL,
  `Password` varchar(100) NOT NULL,
  `updationDate` timestamp NOT
CREATE TABLE `tblvehicles` (
  `id` int(11) NOT NULL,
  `VehiclesTitle` varchar(150) DEFAULT NULL,
  `VehiclesBrand` int(11) DEFAULT NULL,
  `VehiclesOverview` longtext DEFAULT NULL,
  `PricePerDay` int(11) DEFAULT NULL,
  `FuelType` varchar(100) DEFAULT NULL,
  `ModelYear` int(6) DEFAULT NULL,
  `SeatingCapacity` int(11) DEFAULT NULL,
  `Vimage1` varchar(120) DEFAULT NULL,
  `Vimage2` varchar(120) DEFAULT NULL,
  `Vimage3` varchar(120) DEFAULT NULL,
  `Vimage4` varchar(120) DEFAULT NULL,
  `Vimage5` varchar(120) DEFAULT NULL,
  `AirConditioner` int(11) DEFAULT NULL,
  `PowerDoorLocks` int(11) DEFAULT NULL,
  `AntiLockBrakingSystem` int(11) DEFAULT NULL,
  `BrakeAssist` int(11) DEFAULT NULL,
  `PowerSteering` int(11) DEFAULT NULL,
  `DriverAirbag` int(11) DEFAULT NULL,
  `PassengerAirbag` int(11) DEFAULT NULL,
  `PowerWindows` int(11) DEFAULT NULL,
  `CDPlayer` int(11) DEFAULT NULL,
  `CentralLocking` int(11) DEFAULT NULL,
  `CrashSensor` int(11) DEFAULT NULL,
  `LeatherSeats` int(11) DEFAULT NULL,
  `RegDate` timestamp NOT NULL DEFAULT current_timestamp(),
  `UpdationDate` timestamp NULL DEFAULT NULL ON UPDATE current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```
ALTER TABLE `admin`
  ADD PRIMARY KEY (`id`);

--
-- Indexes for table `tblbooking`
--
ALTER TABLE `tblbooking`
  ADD PRIMARY KEY (`id`);

--
-- Indexes for table `tblbrands`
--
ALTER TABLE `tblbrands`
  ADD PRIMARY KEY (`id`);

--
-- Indexes for table `tblcontactusinfo`
--
ALTER TABLE `tblcontactusinfo`
  ADD PRIMARY KEY (`id`);

--
-- Indexes for table `tblcontactusquery`
--
ALTER TABLE `tblcontactusquery`
  ADD PRIMARY KEY (`id`);

--
-- Indexes for table `tblpages`
--
ALTER TABLE `tblpages`
  ADD PRIMARY KEY (`id`);

--
-- Indexes for table `tblsubscribers`
--
ALTER TABLE `tblsubscribers`
  ADD PRIMARY KEY (`id`);

--
-- Indexes for table `tbltestimonial`
--
ALTER TABLE `tbltestimonial`
  ADD PRIMARY KEY (`id`);

--
-- Indexes for table `tblusers`
--
ALTER TABLE `tblusers`
  ADD PRIMARY KEY (`id`),
  ADD KEY `EmailId` (`EmailId`);
```

```
CREATE TABLE `tblsubscribers` (
  `id` int(11) NOT NULL,
  `SubscriberEmail` varchar(120) DEFAULT NULL,
  `PostingDate` timestamp NULL DEFAULT current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=la

INSERT INTO `tblsubscribers` (`id`, `SubscriberEmail`, `PostingDate`) VALUES
(4, 'harish@gmail.com', '2020-07-07 09:26:21'),
(5, 'kunal@gmail.com', '2020-07-07 09:35:07');--

CREATE TABLE `tbltestimonial` (
  `id` int(11) NOT NULL,
  `UserEmail` varchar(100) NOT NULL,
  `Testimonial` mediumtext NOT NULL,
  `PostingDate` timestamp NOT NULL DEFAULT current_timestamp(),
  `status` int(11) DEFAULT NULL
) ENGINE=InnoDB DEFAULT CHARSET=la

INSERT INTO `tbltestimonial` (`id`, `UserEmail`, `Testimonial`, `PostingDate`,
`status`) VALUES
(1, 'test@gmail.com', 'I am satisfied with their service great job', '2020-07-07 14:30:12',

CREATE TABLE `tblusers` (
  `id` int(11) NOT NULL,
  `FullName` varchar(120) DEFAULT NULL,
  `EmailId` varchar(100) DEFAULT NULL,
  `Password` varchar(100) DEFAULT NULL,
  `ContactNo` char(11) DEFAULT NULL,
  `dob` varchar(100) DEFAULT NULL,
  `Address` varchar(255) DEFAULT NULL,
  `City` varchar(100) DEFAULT NULL,
  `Country` varchar(100) DEFAULT NULL,
  `RegDate` timestamp NULL DEFAULT current_timestamp(),
  `UpdationDate` timestamp NULL DEFAULT NULL ON UPDATE
current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

--
-- Dumping data for table `tblusers`
--

INSERT INTO `tblusers` (`id`, `FullName`, `EmailId`, `Password`, `ContactNo`, `dob`,
`Address`, `City`, `Country`, `RegDate`, `UpdationDate`) VALUES
(1, 'Test', 'test@gmail.com', 'f925916e2754e5e03f75dd58a5733251', '6465465465', '',
'L-890, Gaur City Ghaziabad', 'Ghaziabad', 'India', '2020-07-07 14:00:49', '2020-07-12
05:44:29');
```

CHAPTER-13

CONCLUSION

Car rental business has emerged with a new goodies 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 door step 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 efficiently and effectively manage the business and satisfies customers' need at the click of a button.

CHAPTER-14

BIBLIOGRAPHY AND REFERENCES

Books Used:

- Software Engineering - R.S
- PHP For Dummies
- PHP Begineers Guide By McGrawhill Publication
- Javascript By McGrawhill Publication

References Used:

- http://www.carrentingsolutions.com/
- http://www.flashvortex.com/
- Wikipedia.org
- www.w3schools.com