#### PRIVATE CAR RENT WEBSITE

 $\mathbf{BY}$ 

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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# DAFFODIL INTERNATIONAL UNIVERSITY DHAKA, BANGLADESH JANUARY 2023

#### APPROVAL

This Project/internship titled "PRIVATE CAR RENT WEBSITE", submitted by Musfikul Islam, ID No: 181-15-11222 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 24 january, 2023.

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We hereby declare that, this project has been done by us under the supervision of Ms. Samia Nawshin, Assistant professor, Department of CSE Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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Finally, we must acknowledge with due respect the constant support and patients of our parents.

#### **ABSTRACT**

The development of a data management system for a PRIVATE CAR RENT WEBSITE is the goal of our project. As a result, an administrator can rent a car for a client to utilize. By making the payment within a Specific Timeframe. This approach effectively improves customer retention while streamlining the management of workers and vehicles. The user interface of this automobile rental program is highly intuitive. As a result, using it will feel quite natural to people. The administrator can manage their rental, payment, employment, and automobile difficulties, such as insurance, by using this system. The system can be expanded to include the vehicle data. Or, the administrator can change or remove already-existing car information. The administrator can access the automobile rental system's transaction reports whenever necessary. Therefore, there is never a delay in the availability of any automobile information, and it is very simple and quick to capture car information when it is needed. Customers can rent cars through the system as well. Before using the system, the customer must either create a new account or use the one they already have. Then, he or she can browse the cars that are available in a branch and make a car reservation. The admin and the consumer will both benefit from this method.

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#### **CHAPTER 1**

#### Introduction

#### 1.1 Introduction

This project is made to be used by a car rental institution that good in giving users vehicle rentals. Customers can see available car, view profiles, register and reserve automobiles using this project.

#### 1.2 Motivation

The following services can be provided by this online car rental system:

- Improve Business: To widen the car rental company extend outside the local market by using internet, so that we can do this not only locally can increase return on investment.
- Online car reservation: This characteristic allows user to book available car online in advance of the date or time.
- Users Registration: A site to save user or customers information, follow their transactions, and also take the information to give them better services.

#### 1.3 Problem Statement

Though they do not have their own personal vehicle or they do not own a vehicle, getting Automobile rental can be used for a small cost and for fixed time. A car rental can help people travel around whenever they need. The people who needs a vehicle must decide to get a preferable one from a car rental company. This website improves customer holding while smoothing vehicle and staff management.

# 1.4 Objectives

• to create an online system which will enable users to sign up for car reservations and register online while also giving the company to maintain car rentals efficiently.

• to make easier for user to get or rent a vehicle anytime they want.

# 1.5 Expected Outcome

The main objective of this project is to create a online-system that will enable users to reserve and register vehicles online and will allow the company or agency to run their car rental business. The main goal of this project is to always provide a customer with a ride. Anyone who has registered on this website is eligible to borrow an automobile whenever they want.

# 1.6 Report Layout

This is done with the intention that reading the report will provide you a thorough picture of the project, how it functions, and what the project has accomplished. The report adheres to the standards for standard reports set out by DIU.

#### **CHAPTER 2**

#### **Background**

#### 2.1 Terminology

A car rental system is a car that can be rented for a fixed time in exchange for an amount of money. Though they don't have access to their own vehicles and also they don't own a car at all. By renting a car can help them move around. who wants a car to rent must at first get in contact with a vehicle's rental company. Now it is possible through online. A user now have to give certain information, including a rental date of month and the vehicle type.

#### 2.2 Related Works

We have analyzed a few websites and publications to draw conclusions about the elements and methods they used and the outcomes they produced.

# 2.3 Comparative Analysis

Comparative Analysis of Car Rental Systems

A car is rented from a corporation. A cars id is used by a consumer to rent a car. A car Id is used by the employee to identify the customer during transaction processing. The Emp Id identifies the employee Date rented, amount, deposit, and number of days are all recorded for each consumer that leases a vehicle. The date the automobile was returned, the date it was hired, and the person who handled the transaction are all noted. general overview of the functionalities This system will make it easier for a "normal" rental car facility to operate. There should be a distinct daily rental rate for each type of vehicle. The number of days, type, and speed of the vehicle all affect the rental rate. The following features should be included in the system: Rent: A system that can give feedback to users questions about cost and availability of many "kind" of cars at future. This system should be able to reserve the choose automobile for the chosen dates when the user selects the "Type" of car.

# 2.4 Scope of the problem

A car that rented out for a price and for a certain amount of time. getting a car rental via the website allows people to travel even when they do not own or have access to a vehicle. The person who needs a car to rent must contact admin through my website. There have always been difficulties when hiring a vehicle from a stranger, but this project makes it easier for customers to do so by just going to my website. They lacked any assurance of security or proof. However, clients may hire a vehicle from me with total confidence.

#### 2.4 Welfare of Online Car Rental Services

- This vehicle rental website option is flexible and completely functioning.
- This is incredibly user-friendly.
- The back office administration is aided by this online automobile rental system's standardized and streamlined processes.
- A ton of time, money, and labour are saved.
- This system is 24 hour running service.
- the management more effective at providing users good services.
- It allows software support and user feature development if needed.

# 2.5 Challenges

One of the difficulties facing international travelers is driving, they do not familiar with new laws of different region. So the risk of accident is very high. Some of them are new drivers. For this the rental companies' need to give these clients special attention causes them a lot of trouble.

Advanced Pricing & Booking Management Keeping track of and managing all the reservation data is very difficult for a person to handle. Most automobile rental company find it quite challenging.

Increasing transparency and customer service Customer happiness is the most crucial components of any successful institution. It's hard for the automobile rental industry to give

its customers the appropriate information and total openness. For you to keep your customers, providing excellent customer service is crucial. It may also be a fantastic method to receive recommendations.

Brand Recognition For many businesses, building brand awareness is difficult. There are a lot of new car rental agency on the market, and they always try to get customers' trust for the most.

#### **CHAPTER 3**

# **Requirement Specification**

# 3.1 Process modelling

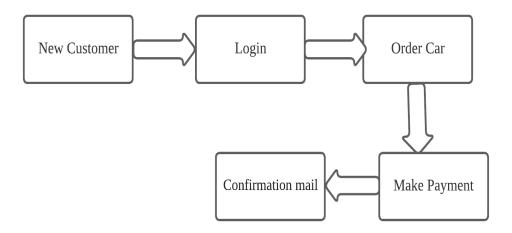


figure 3.1: Workflow diagram

# 3.2 Requirement Analysis

A software engineering technique called requirement analysis is made up of numerous tasks that identify the requirements that must be met for a new or modified product, taking into account any potential conflicts between the requirements of the various users.

Customers should be able to register online and create membership cards using the system.

a. Online car reservation: This system allow customers to book cars online.

- c. Database update automatically once a booking is made or a new user registers: This project should be able to update the database automatically. when a reservation is made or a new client registers, all without the administrator's involvement.
- d. Users feedback: It should give ways for customers to give feedback.

#### 3.2 System Design and Diagram

The system design does not reveal the entire architecture of the system. In this section, I go into great detail on the system design.

# 3.2.1 Data Flow Diagram (DFD)

The Data flow and the transformations that are used when data goes from input to output are shown graphically in a data flow diagram (DFD).

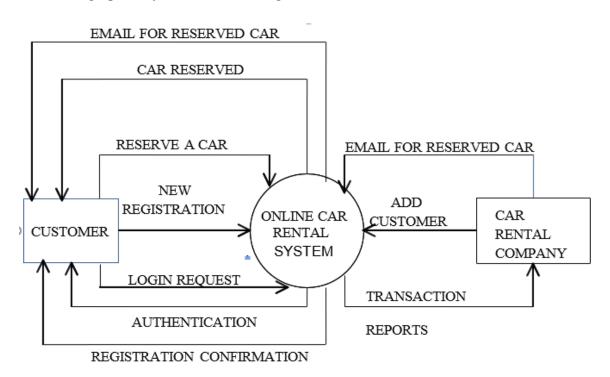


Figure 3.2.1: data flow diagram for online car rent

The two entity in this diagram are the Customer and the Car Rental Company.

# Basis of the Client:

- new registration
- Login
- Confirmation of Registration
- Reserve a car
- Issued Car
- mail Received for reserved car

responsibilities of a car rental company:

- View Transaction Reports
- Send Emails for Reserved Cars

# 3.2.2 DFD Level 1 of Online Car Rental System Customer

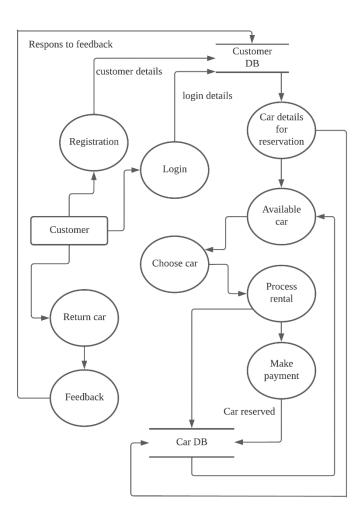


Figure 3.2.2: DFD Level 1 of Online Car Rental System Customer

# 3.2.3 DFD Level 1 of Online Car Rental System Staff

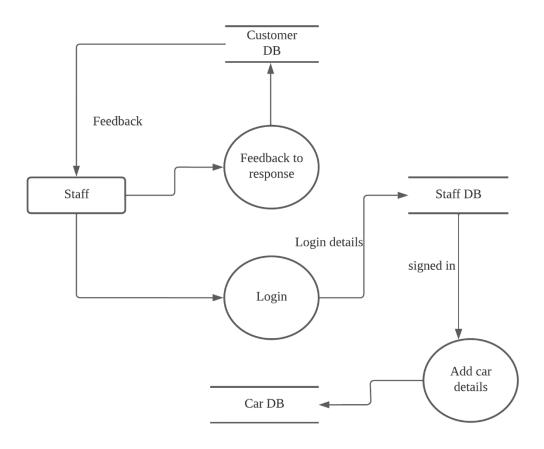


Figure 3.2.3: DFD Level 1 of Online Car Rental System Staff

# 3.2.4 DFD Level 1 of Online Car Rental System Admin

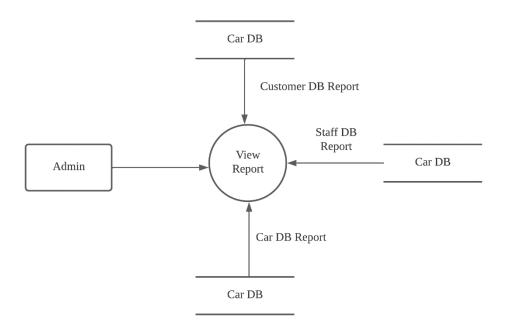


Figure 3.2.4: level 1 DFD of car rental system Admin

# 3.3 Use-case Diagram and description

# 3.3.1 Actor and Use-case Description

The relation between the actors and their use cases is described in details in the actor and use-case description.

Actor	Use-case	Use-case Description
	Registered as member	This use-case details the steps a consumer takes to sign up for a membership online. Information about the user is important for registration.
user/customer	Reservation making	Customers can make reservation using the use-case. Before their reservation can be confirmed, non-registered customers will be told to register. After task is finished, a notification is sent to the customer by the system.
	Return car	This use-case extends the process of rental use-case from the staff actor and depicts the scenario where the user/customer returns the borrowed car.
	Give feedback	The customer uses this use-case to give comments, after a comment has given, the user will receive a confirmation.
	Add brand new vehicle	Staff uses this use-case to join a brand-new vehicle to the database of the business. For this use case to be activated, staff must be logged in.
Staff	Update vehicle Details	Every time a new renewal, staff uses use-case to modify the car details. It enables business to maintain an accurate fleet record.
	Reply to customer's feedback	This use-case explains the process through which staff responds to prior consumer comments. It relies on the users offer feedback use-case.

	Process	The event that occurs when a customer is picked up or a car
	Rental	is returned was explained in this use case.
	Add new staff	The event where an administrator adds a new personnel
Admin		information to the company's staff database is described in
		this use case. Every time a new employee joins the company,
		it is invoked.
	View report	The administrator utilize this use-case to see the transaction
		report.

# 3.3.2 Use case Diagram

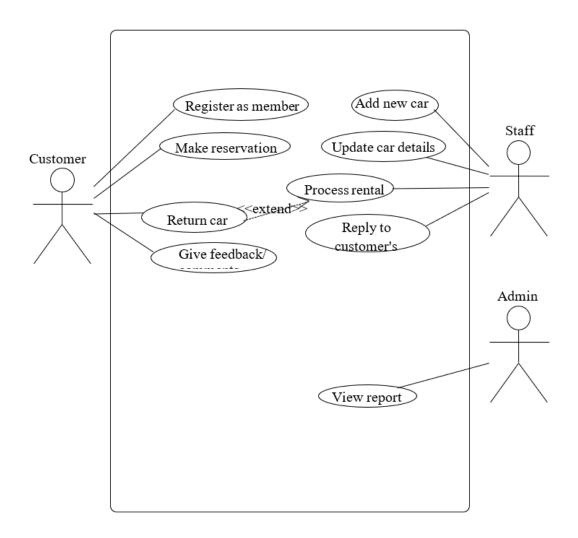


Figure 3.3.2: Use case online Car Rental System

# 3.3.3 Use-Case Dependency Diagram

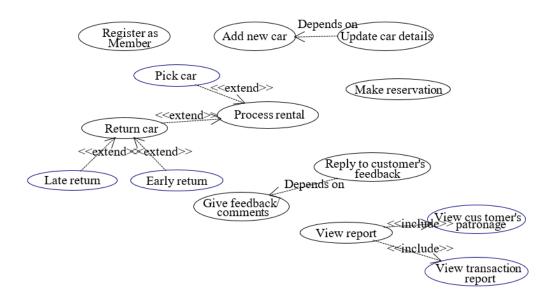


Figure 3.3.3: Diagram of use case dependency

# **CHAPTER 4**

# **Design Specification**

# 4.1 Font-End Design

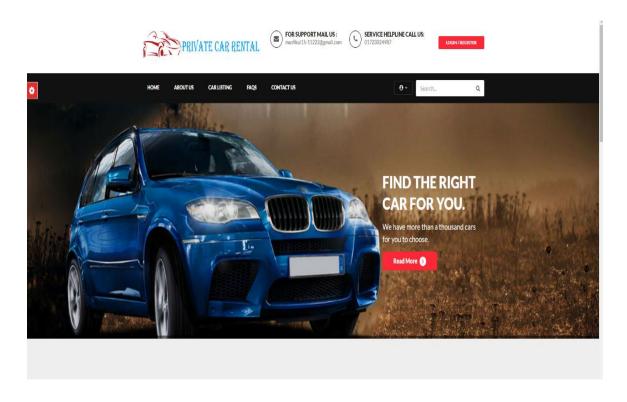


Figure 4.1.1: Homepage

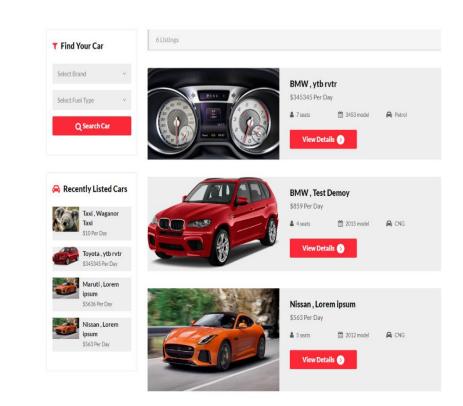


Figure 4.1.2: Car Catalogue

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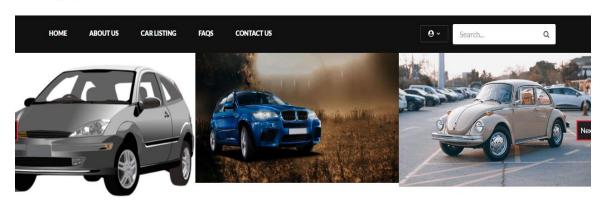
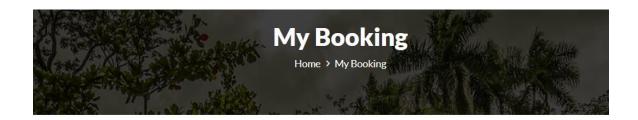




Figure 4.1.3 Car Details



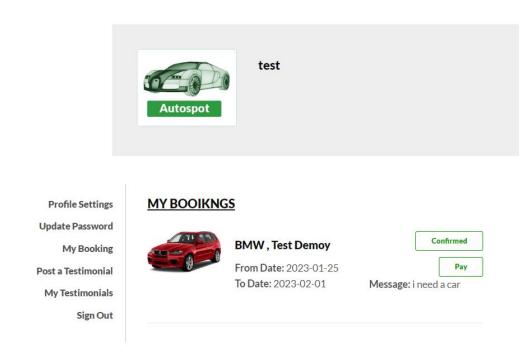
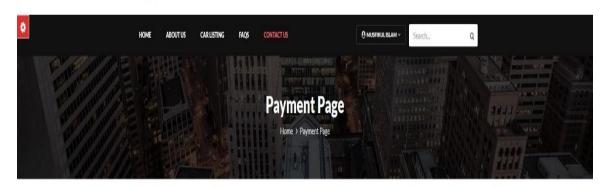


Figure 4.1.4 Car booking





# Choose Your Bank First DBBL UCB EBL Credit Card ABOUT US SUBSCRIBE NEWSLETTER > About Us FAQs > FAQs > Privacy > Terms of use \*Version grant data and about to our

Figure 4.1.5: Payment Page

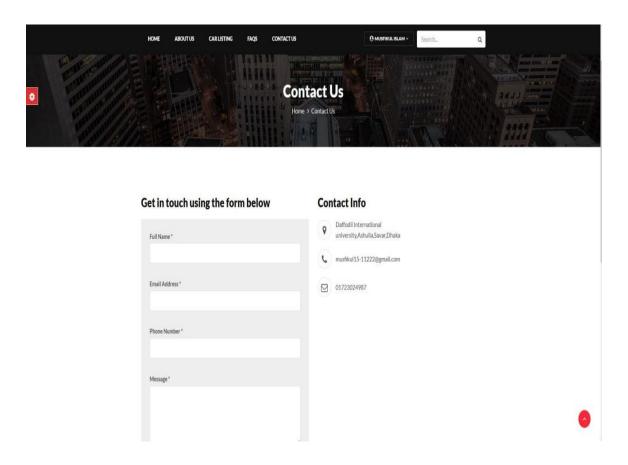


Figure 4.1.6: countact us

# 4.2 Back-End Design

Hypertext: PHP is a popular scripting language that can be used for different tasks but it was at first created for web development. It was created for dynamic web pages. This is achieved by implementing PHP code into the html.

php is a general purpose programming language processed by an interpreter application in command-line mode. This might work as a graphical-based program. Every contemporary servers support php as a processor but operating systems and computer platforms support PHP as a standalone interpreter.

Rasmus Lerdorf first developed PHP in 1995, and it has subsequently undergone constant improvement. Though there is no specification, Free software known as PHP is distributed under the PHP License.

PHP, which was initially developed to invent dynamic website pages, but now it is focused on server-side scripting. It is comparable to other server-side scripting languages. Additionally, PHP has drawn the creation of many frame works which offer creating blocks ,design structure to support quick and fast Application development.

# 4.2.1 PHP Syntax:

php & html code is written on the same page
For example:
<html>
<head> <title> php basics </title> </head>
<body>
<h2>hello</h1>
<?php
echo "hello";

?>

</body>

</html>

this aforementioned illustration, HTML contains PHP code. This combines HTML and PHP coding on the same page.

Due to the fact that php is a scripting language for server side, the end user can't read PHP code using the view source option. As a result, it is incredibly safe.

php must be present on the server in order to run PHP scripts.

# 4.2.2 Working of PHP:

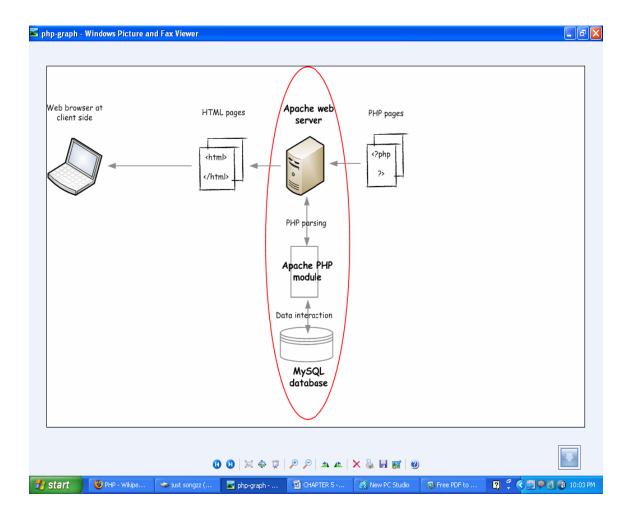


Figure 4.2.2: Php working

if a client asked a web-page from the server that has Php code in it, then the requested php pages are processed in the code environment, and if necessary, a new database contact is created.

The final HTML are on the browser following server side processing. The functioning of PHP is finished in this manner.

## 4.2.3 Joining A PHP to MySQL

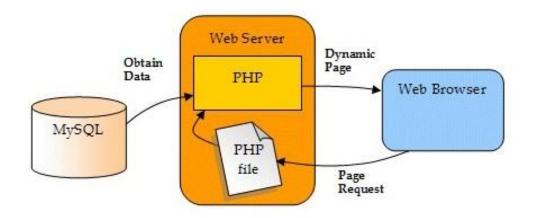


Figure 4.2.3: PHP to MySQL joining

# **4.2.4 Introduction to MySQL:**

MySQL allow the relational database management system multiple users to access different databases while running as a server. Although MySQL is technically spelled as "My S-Q-L," many people pronounce it as ("My Sequel"). It bears the daughter of the original developer Michael Widenius, Mysql development project has released a code as well as the General Public License, which is currently owned by Sun Microsystems, an affiliate of Oracle Corporation, is the sole owner and sponsor of MySQL.

C and C++ are used in MySQL programming. Yacc and a custom lexer called sql lex.cc are used by the SQL parser. The MySQL database are now available in all programming languages with APIs. Additional programming languages which support the ODBC interface, like Cold-Fusion, can communicate with a MySQL database thanks to an ODBC interface referred to as MyODBC. The MySQL adapter is also included with the HTSQL - URL based query mechanism, enabling direct access to the database from any website client. Most of the official libraries and the MySQL server are developed in C++.

#### **4.2.5 Introduction to APACHE SERVER:**

I should be tried at the developer level before deploying web application on the server to obtain a sense. So that I can see how it will function on an server, apache server is used in project to read and execute PHP pages.

Since Apache Server should be aware of the context in which it should operate, it can be compared to a local server from the developer's perspective.

The Apache server is set up in our project to operate with PHP, allowing the server to parse and run all PHP pages.

# 4.3 Activity Diagram

Activity diagrams is a system's consecutive operational and business workflows. It is a dynamic diagram. It displays the action that led to the object's current state.

# **4.3.1 Member Registration**

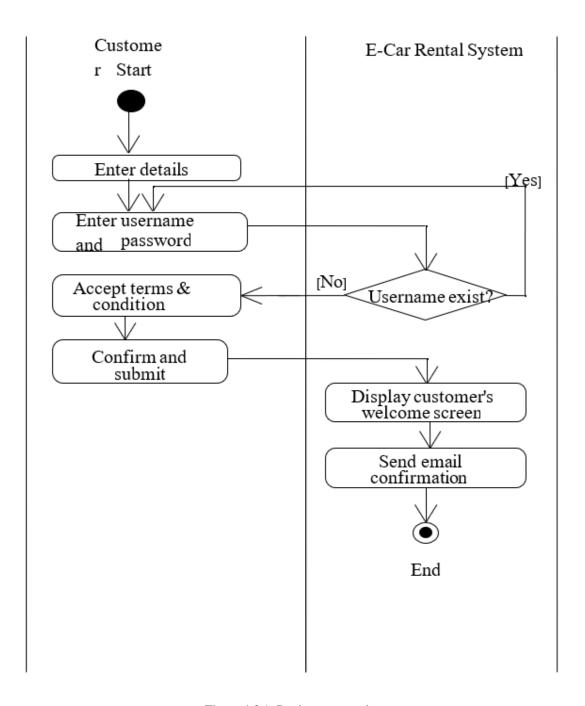


Figure 4.3.1: Register as member

### **4.3.2 Profile Modification**

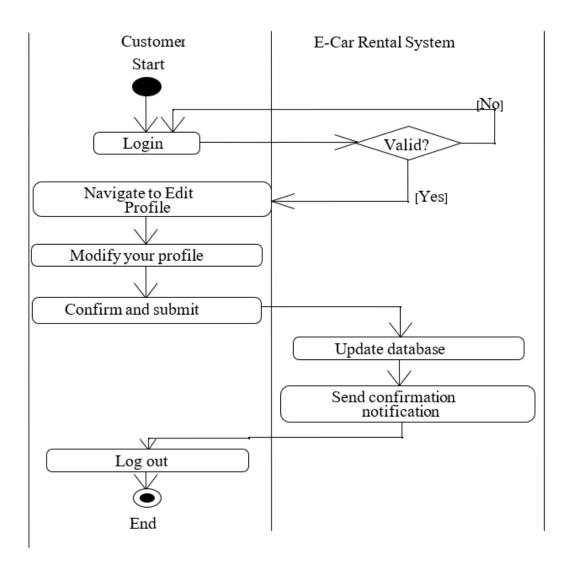


Figure 4.3.2: profile modify

### 4.3.3 Reservation of Car

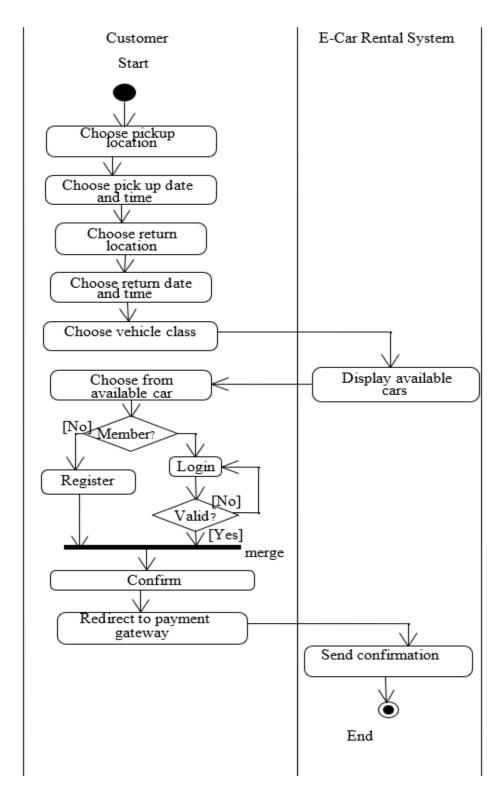


Figure 4.3.3: Reservation make

## **4.3.4** Customer Feedback

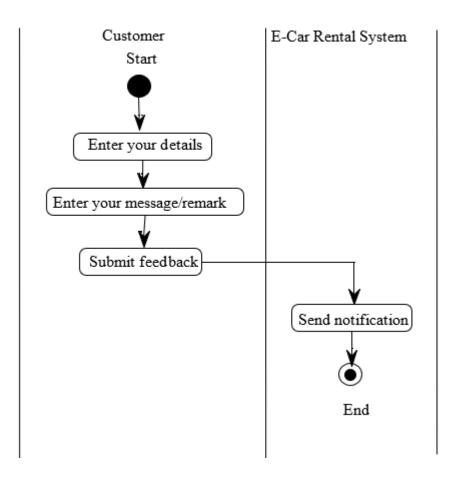


Figure 4.3.4: Give feedback

# 4.3.5 Payment of Car Rent

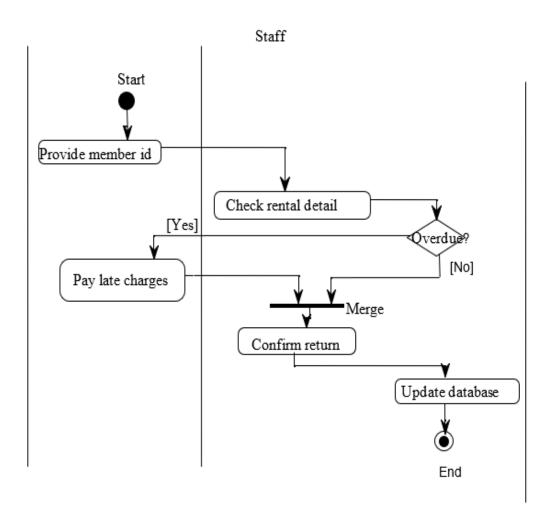


Figure 4.3.5: Rent a Car

# 4.3.6 Adding a New Car

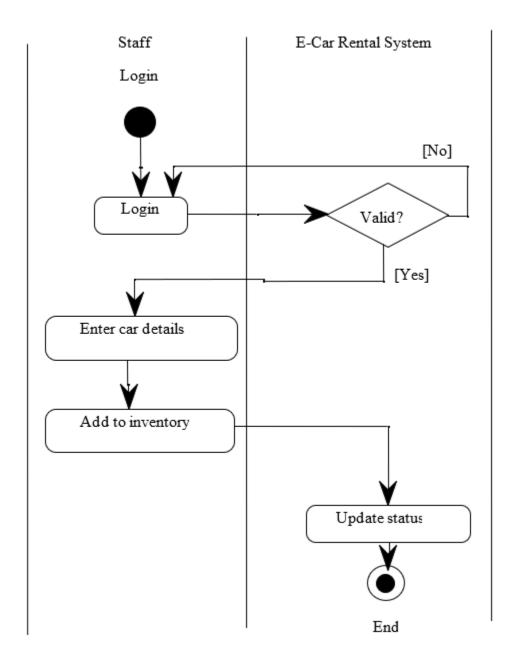


Figure 4.3.6: Add a New Car

# 4.3.7 View Report

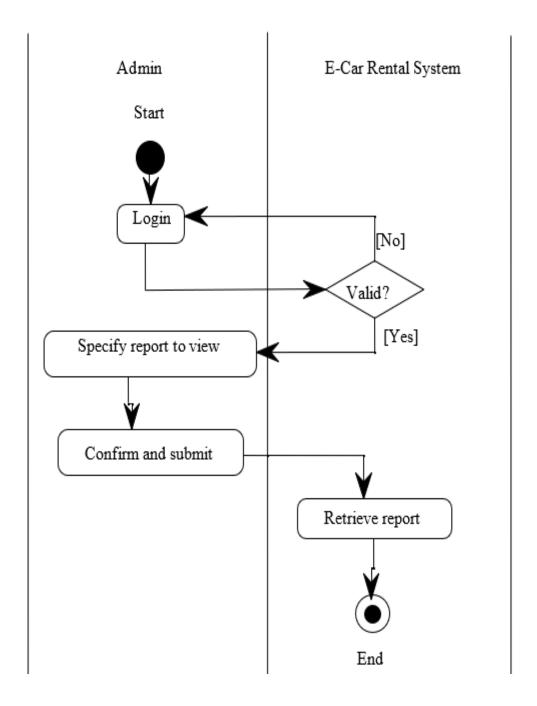


Figure 4.3.7: View report

## **4.4 Sequence Diagram**

Sequence diagrams are used to show how objects behave in a use case. It gives a graphic picture of how objects interact with one another over time. The actors, objects, and components an actor interacts with during the execution of a use case are shown in sequence diagrams. One set of events is represented by one sequence diagram. Sequence diagrams represent the methods and events that an object supports by illustrating the way of messages.

### 4.4.1 Member Registration

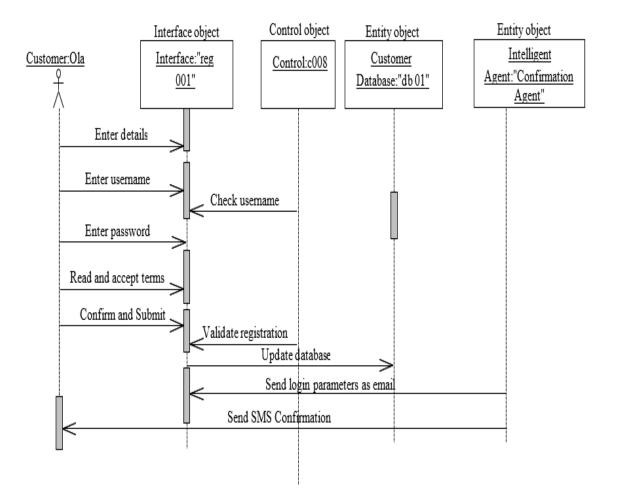


Figure 4.4.1: member registration

## Figure 4.4.2: Make reservation

#### 4.4.2 Reservation of Car

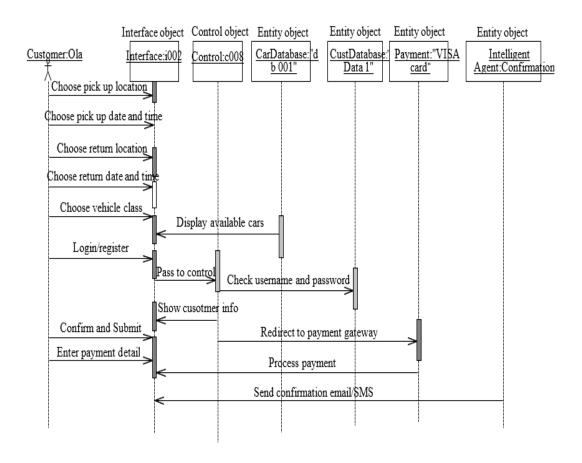


Figure 4.4.2: Make reservation

## 4.4.3 Customer Feedback

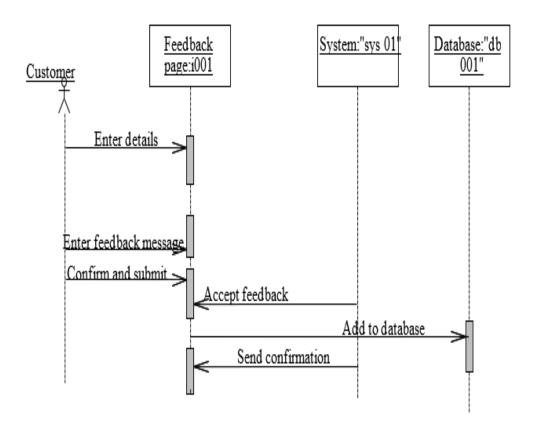


Figure 4.4.3: Give feedback

# 4.4.4 Adding a new car

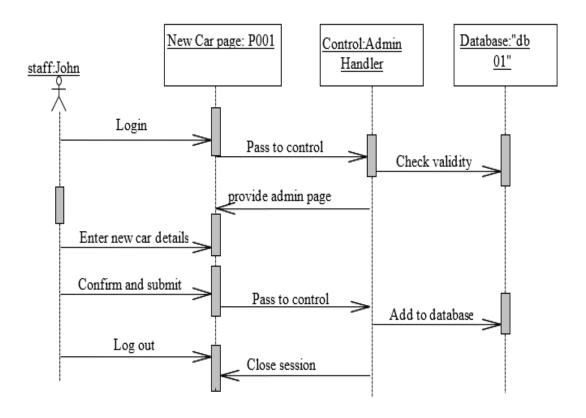


Figure 4.4.4: Add new car

# 4.4.5 Feedback Response

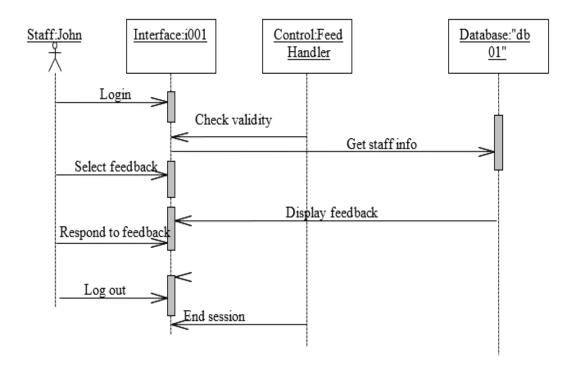


Figure 1 Figure 4.4.5: Respond to feedback

## 4.4.6 Return Car and Check Rental Details

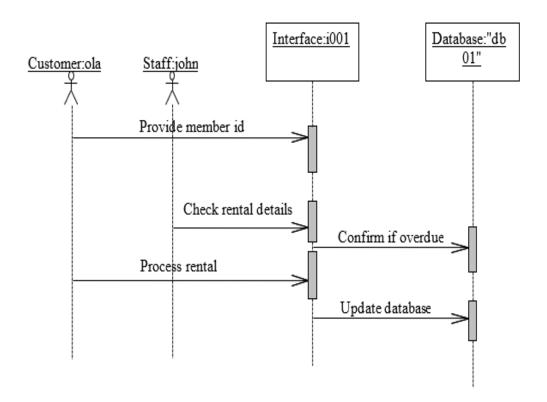


Figure 4.4.6: Return car

# 4.4.7 View Report

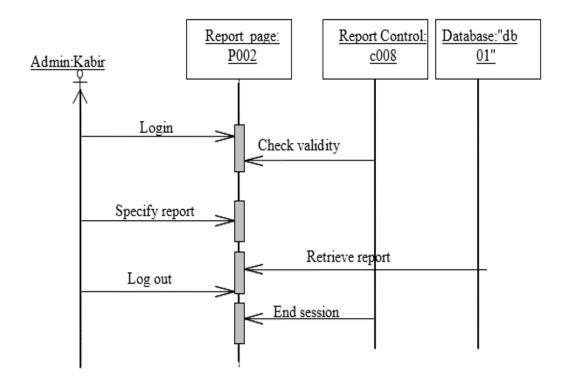


Figure 4.4.7: View report

#### 4.5 Class Diagram

The primary construction piece is a class diagram, which groups various classes together and aids in determining the statically relatedness of various things.

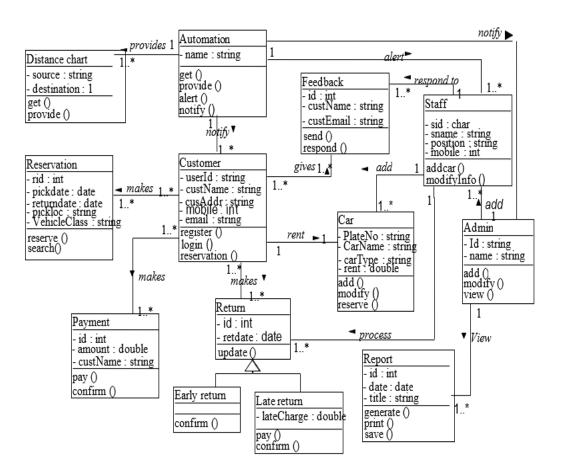


Figure 4.5: Class Diagram of Car Rental System

# 4.5.1 E-R Diagram

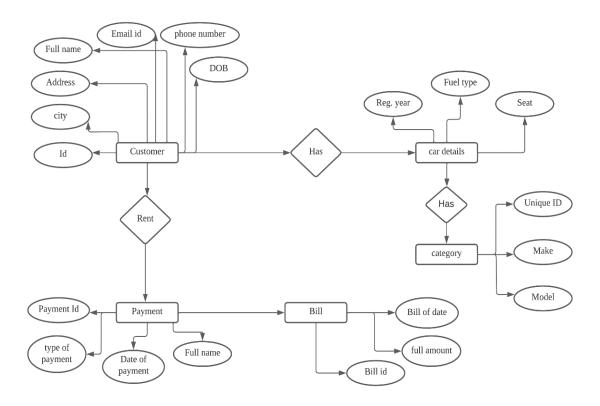


Figure 4.5.1: E-R diagram

# 4.6 Implementation

## **4.6.1 Software Requirement**

• OS version: windows 8/10

• Database: MySQL

• Browser: Chrome, Mozilla Firefox

• Style sheet: Java script, html, CSS, bootstrap

• Program code: php

### **4.6.2** Hardware Requirement:

• Minimum memory 1GB

• CPU: 2.5GHz

• Monitor: SVGA or EGA display

• Keyboard: 106 keys

• Mouse: optical

#### **CHAPTER 5**

#### **Implementation and Testing**

### **5.1 Testing Implementation**

#### **5.1.1 Responsive Web Design**

Web design uses HTML and CSS to automatically resize, expand a website. So that it appears great on all devices. In responsive designs, text and images resize easily to meet any screen size. To adjust text and images, media queries are widely used in responsive web designs. Different styles are presented for various screen sizes using media queries.

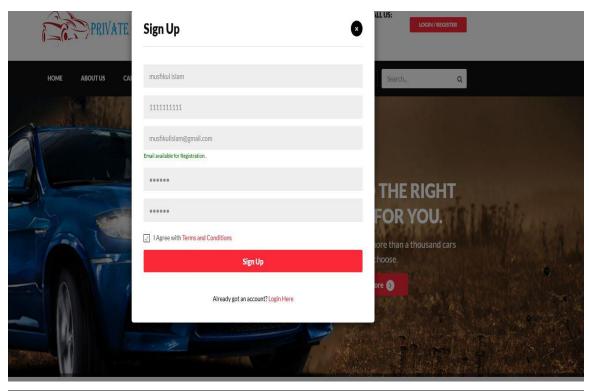
### 5.1.2 Web Development Language Used

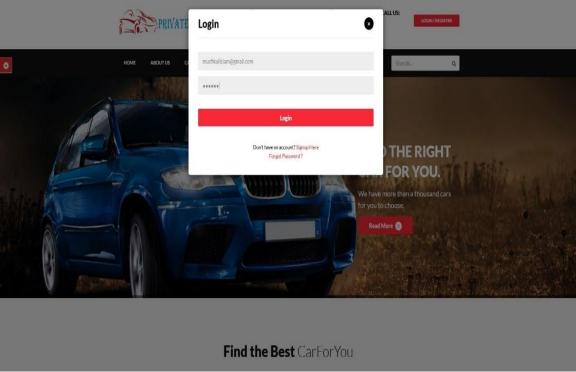
My car rental web application was made using html, CSS, bootstrap, java script and PHP.

#### **5.1.2** Server

MySQL database and Apache server were both used. It is possible to use tables, rows, columns, and indexes as well as carry out database operations on them with MySQL, a relational database management system. why the Apache server is utilized. A open-source web server known as Apache HTTP Server distributes web information over the internet.

## **5.2 Test Result**

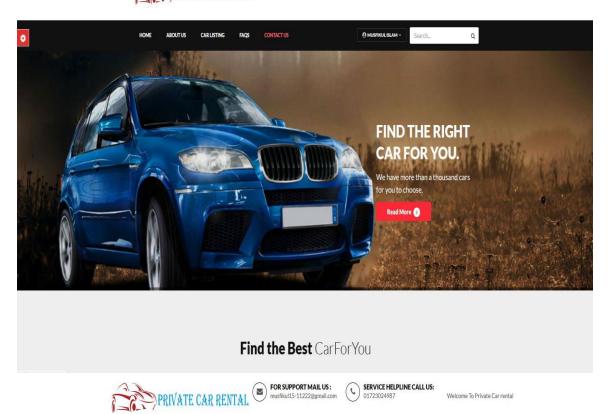




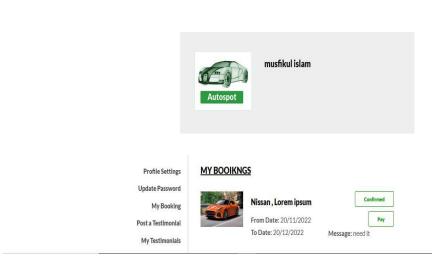




Welcome To Private Car renta



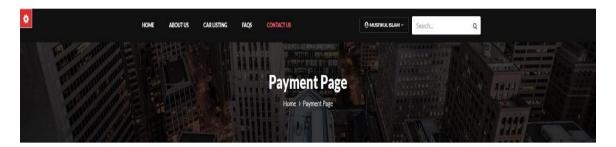




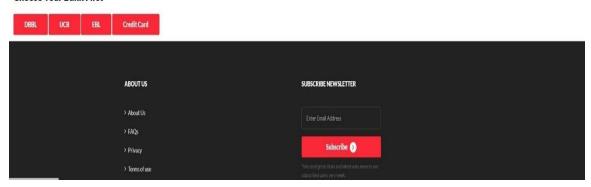






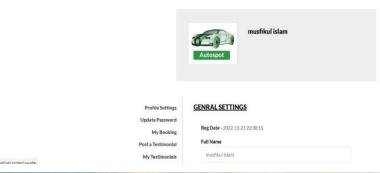


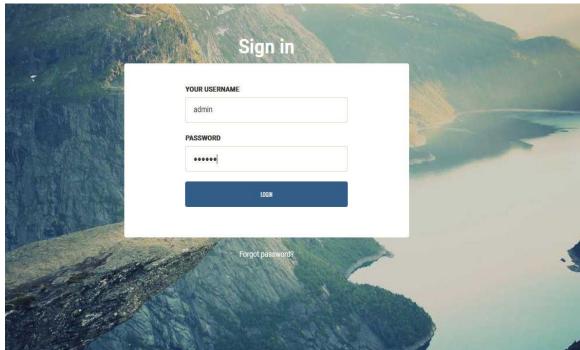
#### **Choose Your Bank First**

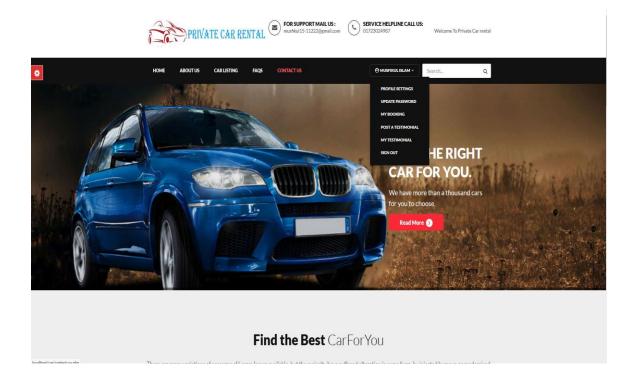




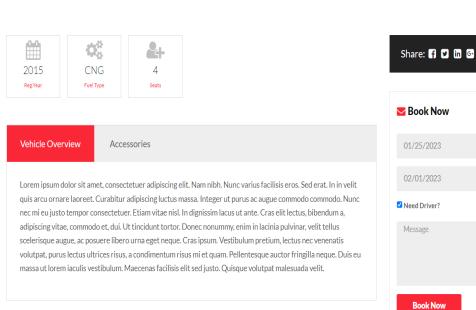












**BDT859** 

#### **CHAPTER 6**

### Impact on society, Environment and Sustainability

### **6.1** Impact on society

Sometimes you just need a set of wheels, whether you're going on vacation or to your next client meeting, and renting a car is the most relaxing mode of transportation. To see how much of a bargain automobile rentals are, read the following benefits!

Low price and accessibility

You may not worrying about maintenance costs losses by renting a car. If you don't actually require a car.

#### **6.2 Impact on environment**

Aside from the convenience and ease it offers, renting an automobile has a lot of advantages. Many people might be unaware of how automobile rentals might benefit the environment. Let's examine several ways that using a rental automobile and car rental firms help the environment. The new cars are more expensive than used cars, many people put off or feel cautious about buying them. New cars are more environmentally friendly. If you've noticed, the majority of automobile rental agencies rent out newer vehicles. Older automobiles Utilize outdated Regulations Since severe environmental efficiency standards weren't on the list throughout the design and production phases, the majority of older car models are typically exempt from numerous smog regulations and requirements. There is a lot of pollution produced by standard older car types. After consuming a significant amount of older fuels in the years prior, many of them have lead buildups. This makes renting new cars preferable to buying used ones. Renting a car results in fewer vehicles and fewer emissions. A lesser number of vehicles would be required and, as a result, fewer vehicles would need to be produced if more people chose to rent cars. The fewer cars produced, the fewer vehicles used, and the less emissions discharged into the air, the better for the environment since it might reduce the amount of resources and materials required

in car manufacturing. Renting an automobile rather than purchasing an older one can be a great method to help protect the environment because you'll be driving "greener" vehicles and leaving a smaller carbon footprint.

#### 6.3 Ethical aspect

The Rental Car Association works to uphold a high level of moral behavior among its members. In order to do this, we follow the following code of ethics with regard to customer service, vehicle standards, premises, and safety.

General members must conduct their business honestly and ethically for the benefit of the public, and they must avoid acting in a way that harms standing reputation. Users must be thoroughly known with all rules of cars under the Transport Services Licensing Act 1989, including the Third Schedule of that Act and any subsequent changes. Members must do their duties with the utmost loyalty, honor, and courtesy. They must also defend the public from unethical practices involving the renting or leasing of motor vehicles.

Vehicle Requirements must always be kept in a condition that satisfies the minimal safety standards for a Certificate of Fitness and comply with all legal fitness and safety requirements. No vehicle will be given out that has a problem or that in a state where a flaw is likely to appear throughout the duration of the rental. All cars must be in good condition. Any changes made as a result of a vehicle's unavailability after a client has reserved a specific type of vehicle must be addressed with and approved by the client. Clients have the option to cancel their reservations and get their entire deposits back.

### 6.3 Sustainability plan

Climate change is a fact, despite years of indifference and, in some cases, denial. The Climate Change's most recent report, published in 2018, made it abundantly clear that even a temperature increase would have catastrophic effects on the planet, resulting in more wildfires, rising sea levels, dangerous heat waves, and shorter agricultural growing seasons. The auto rental business has been making its own efforts for years to reduce its own carbon footprint, and more changes are on the way. Let's take a look at three of those projects.

Fleets are expanding their use of greener vehicles It's not exactly a new trend for car rental companies to use vehicles that either emit no emissions or very minimal emissions. The largest car rental firm in the world, Enterprise, made the choice to add 5,000 hybrid vehicles to its fleet in 2009; all of its major rivals have since followed suit. Additionally, there were very few, if any, electric automobiles that could be reserved a decade ago. The most popular electric vehicles now on the market are the Ford Fusion, Nissan Leaf, and Tesla Model S. More electric vehicles are now available from larger manufacturers. On top of that, some businesses are considering and testing vehicles driven by hydrogen fuel cells. Given that gas is still inexpensive and that electric cars are still significantly more expensive than their equivalents that create waste, it is still a steep uphill battle as long-time consumers continue to choose internal combustion engines. However, as younger, more environmentally concerned consumers take over the market, fleet inventory is likely to shift as a result of changes in demand for green power. Increasing efficiency and reducing emissions thanks to technology undoubtedly, a greener fleet will aid in lowering business expenses, particularly when it comes to gasoline. However, the same technology that is being used to create greener cars is also improving the efficiency of the present fleet of rental cars. From connectivity to telematics, new buzzwords that have just recently entered the sector are beginning to show how they may enhance business performance. For instance, measuring the wear and tear of vehicle use as well as fuel mileage using cloud-based raw data retrieval and storage of information from each vehicle might provide options for enhancing performance. Additionally, because of digital technology's ability to make information instantly available, decision-making would proceed more quickly.

#### **CHAPTER 7**

#### **Conclusion and Future Scope**

#### 7.1 Discussion and conclusion

In the past, when all works are related to the automobile rental business were confined to a single site. The internet has changed the nature of functions. Nowadays users have the option to book cars through online, and, after becoming a member, either pick it up in person at the office or have it delivered in their door. Customers and automobile rental companies both benefitted from the system, which allows management and customer service needs to be met at the touch of a button.

#### 7.2 Scope for further development

Opportunities for Future Growth in the Car Rental Sector the need for this industry has expanded significantly over the last few years, and it is expanding extremely quickly. The future of the global vehicle rental market appears bright and full with prospects. The industry anticipates further growth and promising business possibilities as a result of the rise in domestic and foreign tourism in various nations. The development and expansion of the car rental industry is due to a number of causes. The success of the car rental industry is largely due to the following factors: One of the most popular modes of transportation is renting a car. The majority of travelers find that renting a car is one of the simplest and most affordable ways to travel. You can drive however far you wish in your selected vehicle. Car rental businesses frequently offer fantastic bargains and discounts, which can help you save money. Additionally, you can have a convenient journey by renting a car. Nowadays, the majority of individuals choose automobile rentals as one of their preferred means of transportation. Every customer can choose from a variety of vehicles, including luxury cars, compact cars, sports cars, SUVs, and more, thanks to car rental companies.

The availability of car rentals to everyone is a factor in the industry's growth. It can be used by people from various industries for work, play, and other purposes.

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## Car Website

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SIMILARITY INDEX

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