



ONLINE CAR RENTAL SYSTEM

A Report for the Final Evaluation of project 2

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NIDHI SINGH

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ABSTRACT

The Car Rental System is being developed for customers so that they can book their cars from any part of the world. This application takes information from the customers through filling their details.

A customer being registered in the website has the facility to book a Car which he requires. The proposed system is completely integrated online systems. It automates manual procedure in an effective and efficient way. This automated system facilitates customer and provides to fill up the details according to their requirements. It includes type of car they are trying to hire and location. The purpose of this system is to develop a web site for the people who can book their Car along with requirements from any part of the world. Car rental system provide Car to User in their location on short time.

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CHAPTER-1

INTRODUCTION

1.1 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, register, view profile and book car. Here, User has to Login To book a car. The user can search for cars easily and book. For bookings, the user has to provide information such as Booking Dates and Text Message. All car details are provided and it also includes Car's feature and Overview. The user can also post their Testimonials and the user can update their Profile as well as passwords anytime they want from the site. Admin can Add/Manage car brands, manage cars, bookings, testimonial, pages and many more. It's easy to operate and understand by users. This site makes customers easy for car rental. The design is pretty simple and the user won't find it difficult to understand, use and navigate.

1.2 Reason for the Project

- **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 Car Reservation:** A tools through which customers can Booking 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 Booking/Event Management:** Allows the customer to book space for a group in the case of weddings or corporate meetings

1.3 Problem Statement

A car rental is a car 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 car or don't own a car at all. The individual who needs a car must contact a rental car company and contract out for a car. This system increases customer retention and simplify car and staff management.

1.4 Aims & Objective

- To produce a web-based system that allow customer to register and Booking 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

1.5 Scope

This project traverses 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:

- **Carrental industry:** This includes study on how the car rental business is being done, process involved and opportunity that exist for improvement.
- PHP Technology 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.

1.6 Summary

The main objective of this Car Rental System project will enable the user to rent a car. The user shall login to the system and check for availability of cars. The user specifies a type of car and the journey date and time. The Car Rental System shall check for the availability of the car and rent the car to the customer. All the data regarding the rental cars are stored in MySQL database. The user has to enter his name, address, phone details and check for the cars available for rent. The UI is very simple and the connectivity to back end is robust. The main advantage is that the user shall be able to choose a car depending on his budget.

CHAPTER-2

ONLINE CAR RENTAL SYSTEM

2.1 How Car Rental Services Work

A car rental is a car 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 car or don't own a car at all. The individual who want to rent a car must first contact the car rental company for the desire car. This can be done online. At this point, this person has to supply some information such as; dates of rental, and type of car, fuel type, etc. After these details are worked out, the individual renting the car must present a valid Identification Card(Aadhar Card, Passport) during handling over the car. Most companies throughout the industry make a profit based of the type of cars that are rented. The rental cars are provide a car every type. And customers are free to choose any car of their choice based on their purpose and availability of such car at a 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.
- It saves a lot of time, money and labour.
- Eco-friendly: The monitoring of the car 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 customer.

CHAPTER-3

REQUIREMENT ANALYSIS

3.1 Introduction

Here we will be discussing about the requirement of making this application possible and response as we wanted it to this is only done through the thinking of the developer as well as the vision provided by our guide Dr.N THILLAIARASU.

In this we will be also understanding the platform on which our application is running and on which it is being developed.

3.2 Feasibility Study

Preliminary investigation examine project feasibility, the likelihood the system will be useful to the organization. The main objective of the feasibility study is to test the Technical, Operational and Economical feasibility for adding new modules and debugging old running system. All system is feasible if they are unlimited resources and infinite time. There are aspects in the feasibility study portion of the preliminary investigation:

- Technical Feasibility
- Operation Feasibility
- Economical Feasibility

3.2.1 Technical Feasibility

The technical issue usually raised during the feasibility stage of the investigation includes the following:

- Do the proposed equipments have the technical capacity to hold the data required to use the new system?
- Will the proposed system provide adequate response to inquiries, regardless of the number or location of users?
- Are there technical guarantees of accuracy, reliability, ease of access and data security?

3.2.2 Operational Feasibility

Proposed projects are beneficial only if they can be turned out into information system. That will meet the organization's operating requirements. Operational feasibility aspects of the project are to be taken as an important part of the project implementation. Some of the important issues raised are to test the operational feasibility of a project includes the following: -

- Is there sufficient support for the management from the users?
- Will the system be used and work properly if it is being developed and implemented?
- Will there be any resistance from the user that will undermine the possible application benefits?

3.2.3 Economical Feasibility

A system can be developed technically and that will be used if installed must still be a good investment for the organization. In the economical feasibility, the development cost in creating the system is evaluated against the ultimate benefit derived from the new systems. Financial benefits must equal or exceed the costs.

3.2.4 Legal Feasibility

In the legal feasibility it is necessary to check that the software we are going to develop is legally correct which means that the ideas which we have taken for the proposed system will be legally implemented or not so, it is also an important step in feasibility study.

3.3 System Implementation

During the implementation stage in physically stage in physically created. Necessary program are coded, debugged and documented. A new hardware is selected , ordered and installed.

3.4 Functional 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:

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

3.5 Non-Functional Requirements

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

- **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.
- **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.
- **Ease of use:** Considered the level of knowledge possessed by the users of this system, a simple but quality user interface should be developed to make it easy to understand and required less training.

3.6 Hardware and Software Requirement

Hardware_Requirements:

Processor	:	Intel Pentium Dual Core
RAM	:	512 MB
Hard Disk	:	160 GB Space

Software_Requirements:

Operating System	:	Windows /iOS/Unix
Web Browser	:	IE/Google Chrome/Firefox
Technology	:	PHP
Tools	:	XAMPP
Web Design	:	HTML, CSS, JAVASCRIPT
Back End	:	MYSQL
Scripting Language	:	PHP

CHAPTER-4

EXISTING SYSTEM

4.1 Introduction

Although many online portals have come into the picture for providing online car booking service . But most of the car renting companies are using traditional way to deal with the customer. Which are time and labour consuming?

An existing system can provide manually paper work or excel sheet to track the booking and registered cars details.

The user has to go in the office where the user can get the car on rent and book their car. Most of the time user does not get a sight of the car in which he is planning to travel. Which results in compromising the travel comfort.

In the existing system, you cannot provide feedback of the user to the admin directly. The user gets fluctuation every time he/she travels.

Maintaining excel sheet or paper book record of reservation is very laborious work. Chances of error are more. No automation involves which means they are a very slow to process.

4.2 Problem Statement

The Manual car rental system provides services only during office hours. So; customers have limited time to make any transactions or reservation of the cars. The existence of the online car rental systems nowadays has overcome the limitation of the business operation hour. There are some customers who faced a problem in choosing car to be rented which suitable with some of the important requirements.

- i. To rent a car a prospective renter must first go to the nearest office to register as a client.
- ii. Cars that provide difficulties to rent out are normally advertised in local or national newspaper. It involves a lot of paper work and consumes time

- iii. Details are stored in papers
- iv. Maintenance is a huge problem
 - v. Updatations, changes in details is a tedious task
- vi. Performance is not achieved up to the requirements.

CHAPTER-5

PROPOSED SYSTEM

5.1 INTRODUCTION

The proposed system facilitates the customers to fill up their details, and to give a brief description of a car they want to book. This new system is very helpful for customers who want to hire their cars through this site.

This Car Rental System project will enable the user to rent a car. The user shall login to the system and check for availability of cars. The user specifies a type of car and the journey date and time. The Car Rental System shall check for the availability of the car and rent the car to the customer. All the data regarding the rental cars are stored in MySQL database. The user has to enter his name, address, phone details and check for the cars available for rent. The UI is very simple and the connectivity to back end is robust. The main advantage is that the user shall be able to choose a car depending on his budget.

5.2 Advantages:

- First the customer has to make a reservation and later on in the process has to do registration.
- Second if the customer had already registered himself then he can continue booking in his own account by giving his customer id or mail id.
- Thirdly, the customer can amend details or update his details.
- Maintenance is easy and performance is good
- It is easy to use and understand.
- It reduce the time complexity.

5.3 SPECIFICATION OF PROPOSED SYSTEM

Modules

- i. Registered Users
- ii. Admin
- iii. Guest

Guest Users

Guest user can view the website and checkout the information about rental cars.

Guest users can also inquiry through contact us page.

Register Users

Anyone can register through the registration page. After a successful registration user can log in with valid email and password. User can recover own password by providing some registered info.

After successful login user can do the following things–

- Car Booking
- View Car booking history
- Update His/Her profile
- Update his/her password
- View details of car
- Logout

Admin

Admin is the super user of the website who can manage everything on the website. Admin can log in through the login page

Admin Features–

- Admin can create car brands
- Manage Car Brands(Edit, Delete)
- Post Car
- Manage car(Edit,Delete)

- Manage Booking(Admin can confirm and Cancel Booking)
- Manage Contact us Query
- Admin Can the details of registered users
- admin can also update the page content
- Admin can update the contact us details
- Manage Subscribers
- Admin Dashboard(Admin can view the count of reg users, total booking, total subscribers, total queries etc)
- Change Password(admin can change own password)
- logout

CHAPTER-6

SYSTEM ARCHITECTURE AND DESIGN

6.1 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.

Zero Level Data Flow Diagram

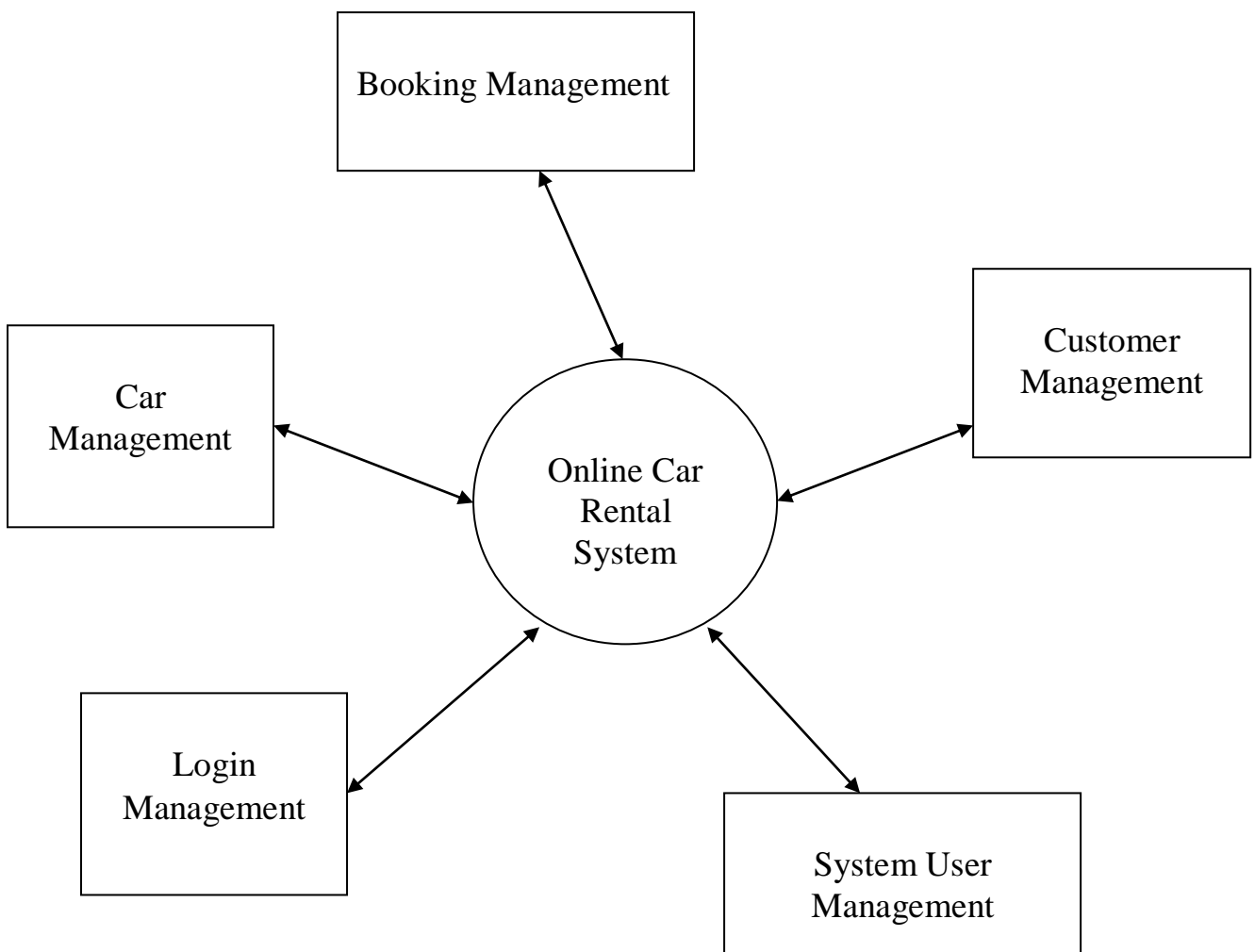


Figure 1: Zero level DFD

Zero Level DFD of online car rental system, it elaborate high level process of online car rental system. It is overview of whole online car rental system there are some high level entities for the process of car rental system.

First Level Data Flow Diagram

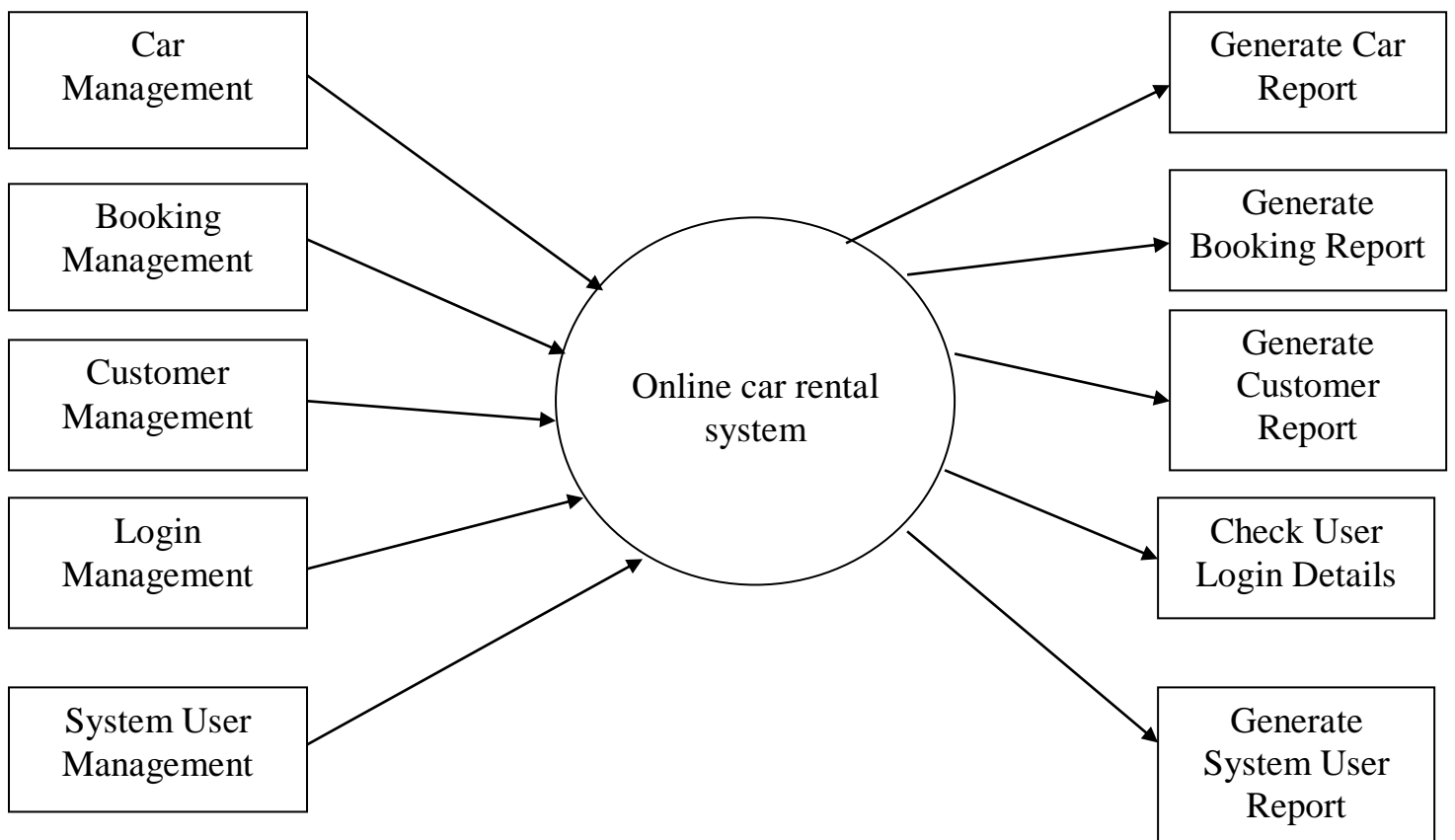


Figure 2: 1st level DFD

1st Level DFD of online car rental system shows how the system is divided into sub system, each of which deals with one or more of the data flows to or from an external agent which together provide all the functionality of online car rental system as whole, above are some given entities and output of 1st level.

Second Level Data Flow Diagram

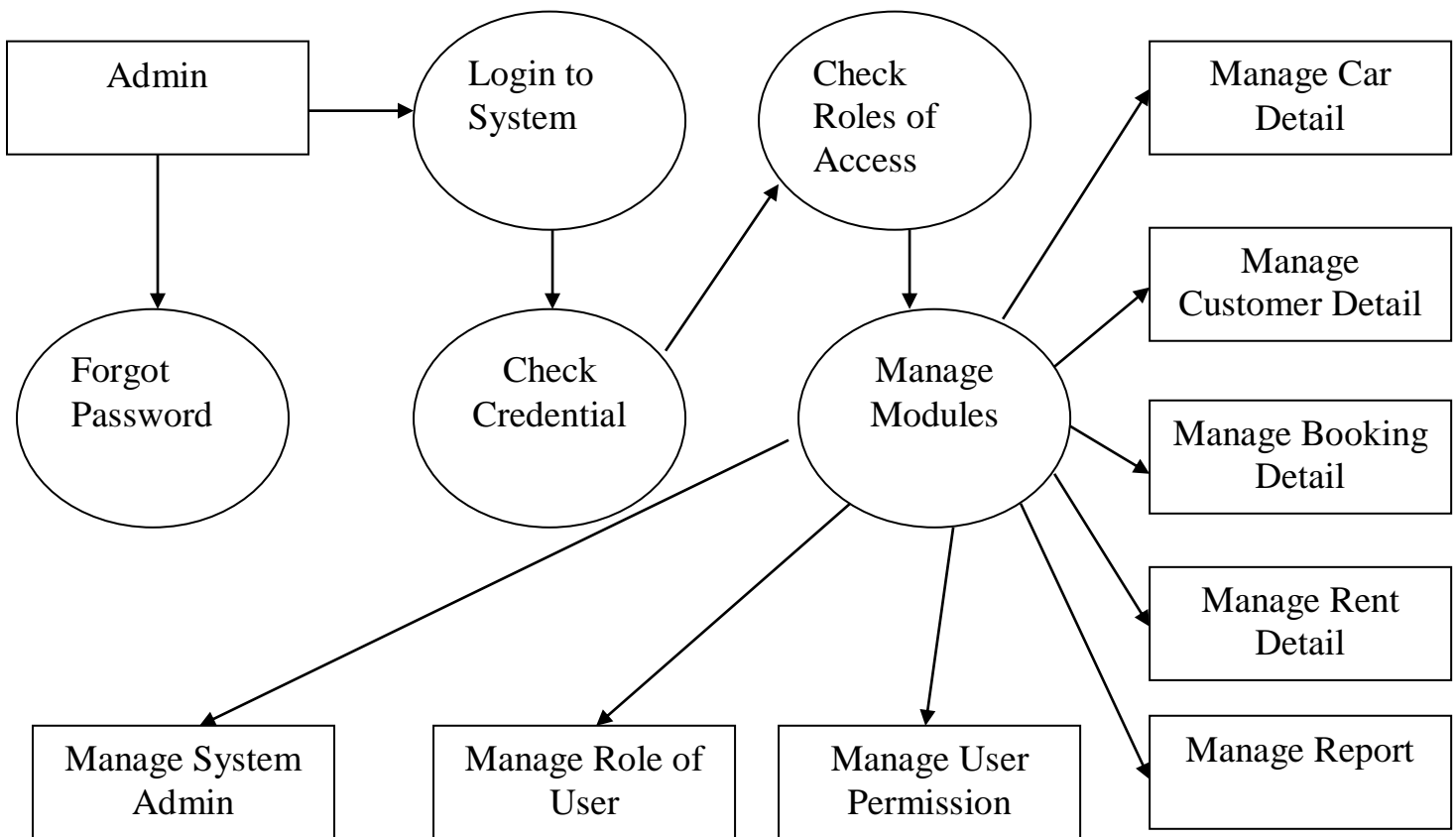


Figure 3: 2nd level DFD

6.2 ER-DIAGRAM

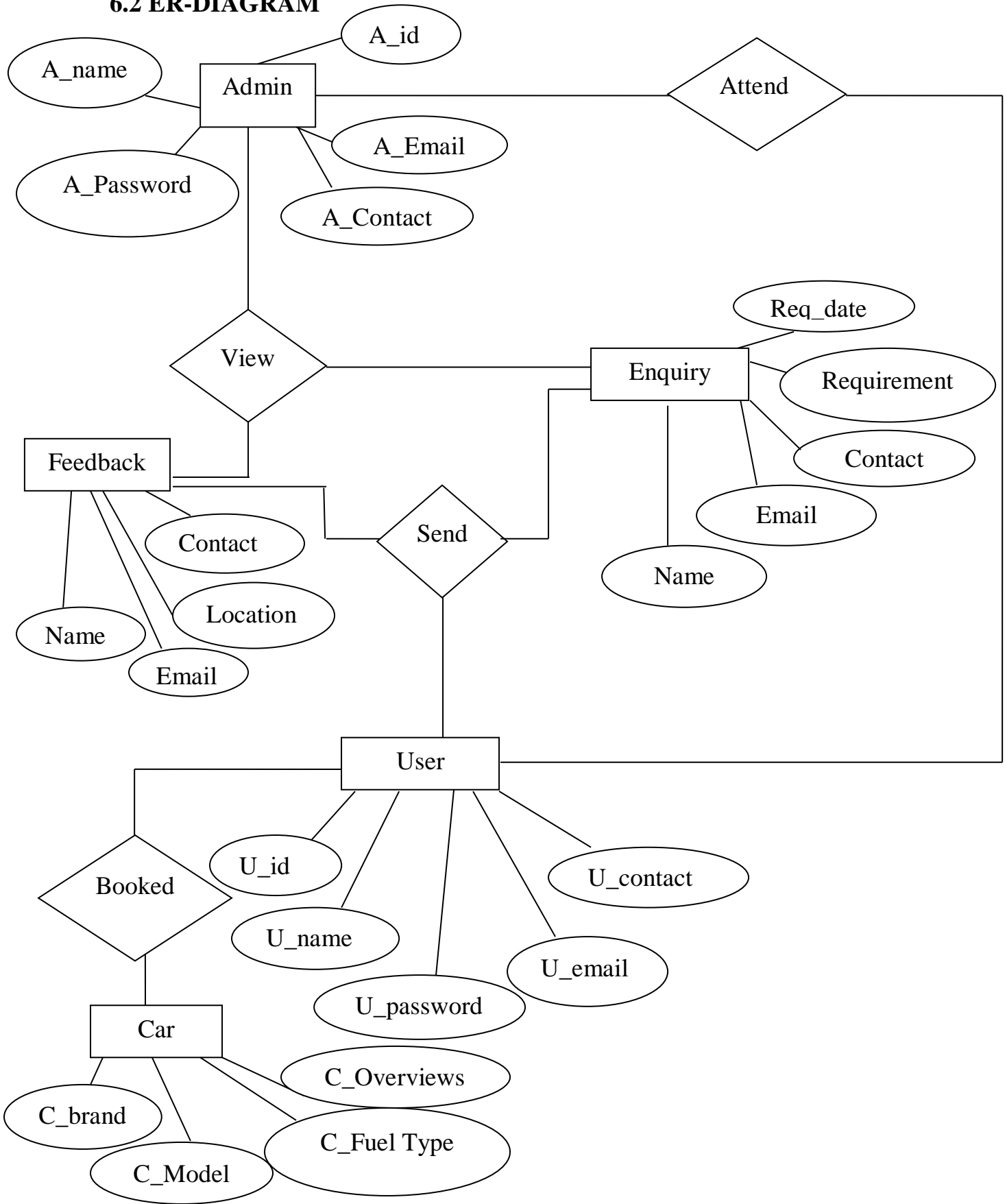


Figure 4: ER Diagram

CHAPTER-7

USE CASE DIAGRAM

7.1 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.
	Booking 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.

Admin	Add a 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 up-to-date record of their fleet.
	Reply to customer's feedback	This use case described the event by which staff updates the system when customer pick up or when returning car.

Table 1: Actors and Use Case Description

7.2 Use-case Login

Use-case Number	UC-01	
Use-case Name	Login	
Actor	Customer	
Description	This use case describe how user login into this online car rental system.	
Precondition	None	
Post condition	If the use case was successful, the actor is now logged into the application.	
Basic course of Action	User Action	System Response
	<ol style="list-style-type: none"> 1. The user is on the home page to login to the system 3.The user enters username and Password,click on login button. 	<ol style="list-style-type: none"> 2.The system promotes the user to enter Username,Password. 4.The system verifies that all the Filled have been filled out and valid 5.The system successfully logged in The system. 6. Use case exit.

Table no-2: Use case -Login

7.3 Use-case Booking Car

Use-case Number	UC-02	
Use-Case Name	Booking car	
Customer Description	This use case permits customers to Booking and make schedule for renting car, based on the availability of the car	
Precondition	Customer wants to Booking a car and reservation details about customer have to be entered	
Post-condition	Customers Booking successfully	
Basic Course of	User Action	System Response
Action	<ol style="list-style-type: none"> 1. The customer wants to Booking a car. 2. The customer clicks booking page. 4. The customer enters the following information customer (full name, email address, password, Pickup date & return date) 5. The customer clicks Booking button to Booking. 8. The customer accepts the reservation and clicks Accept. 	<ol style="list-style-type: none"> 3. The system prompts the customer to fill a reservation form. 6. The system checks all required information had been filled and the date entered dates are valid 7. The system presents information to accept or decline the rental Agreement. 9. The system shows the customer that the reservation has been completed, and presents the customer a reservation confirmation number. 10. Use case ends.

Table No. 3: Use Case Booking Car

7.4 Use Case View My booking

Use-Case Number	UC-03	
Use-Case Name	My booking	
Actor	User	
Description	These use case allow staff to view or display customer reservation.	
Precondition	UC-1	
Post Condition	Display All Bookings	
Basic Course of Action	<ol style="list-style-type: none"> 1. The staff wants to view reservation. 2. The staff requests the reservation Page. 4. Then on reservation page the employee clicks view button 	<ol style="list-style-type: none"> 3. The system responds the requested page. 5. The system puts on view or displays all reservation information to the employee. 6. Use case ends

Table No.4: Use Case View My booking

7.5 Use Case Diagram

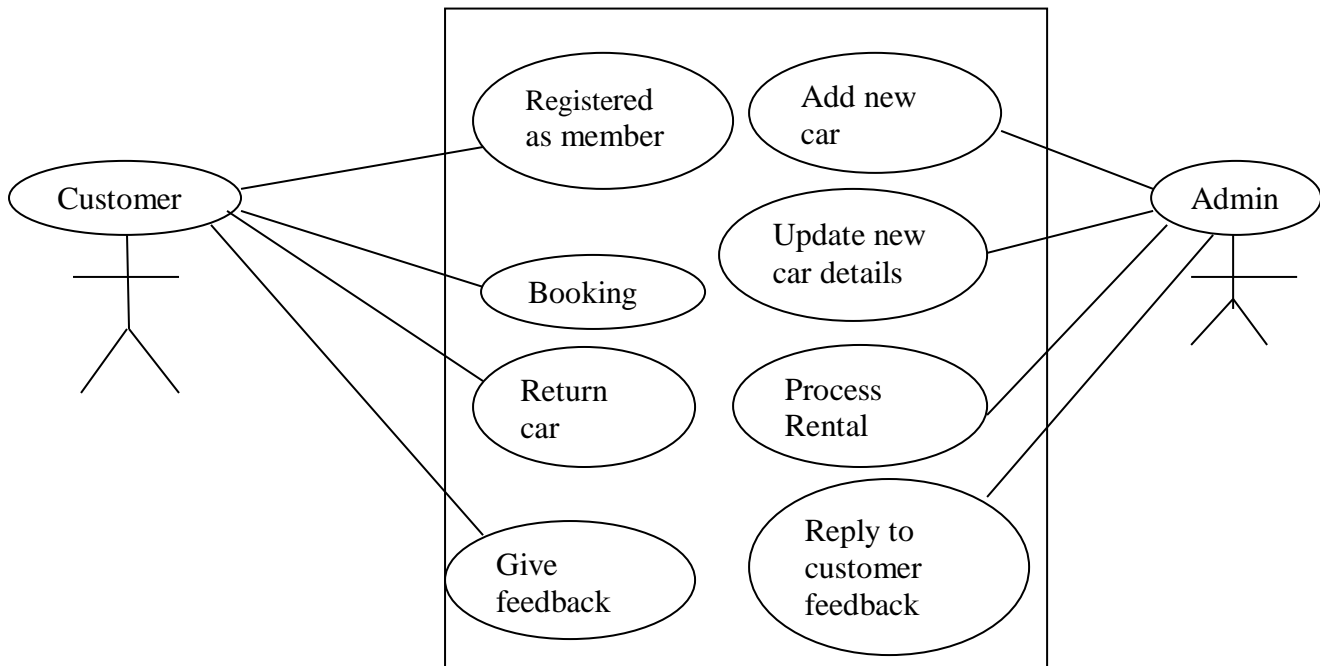


Figure 5 : Online Car Rental System [use case]

CHAPTER-8

OUTPUT/SCREENSHOT

8.1 Screenshot

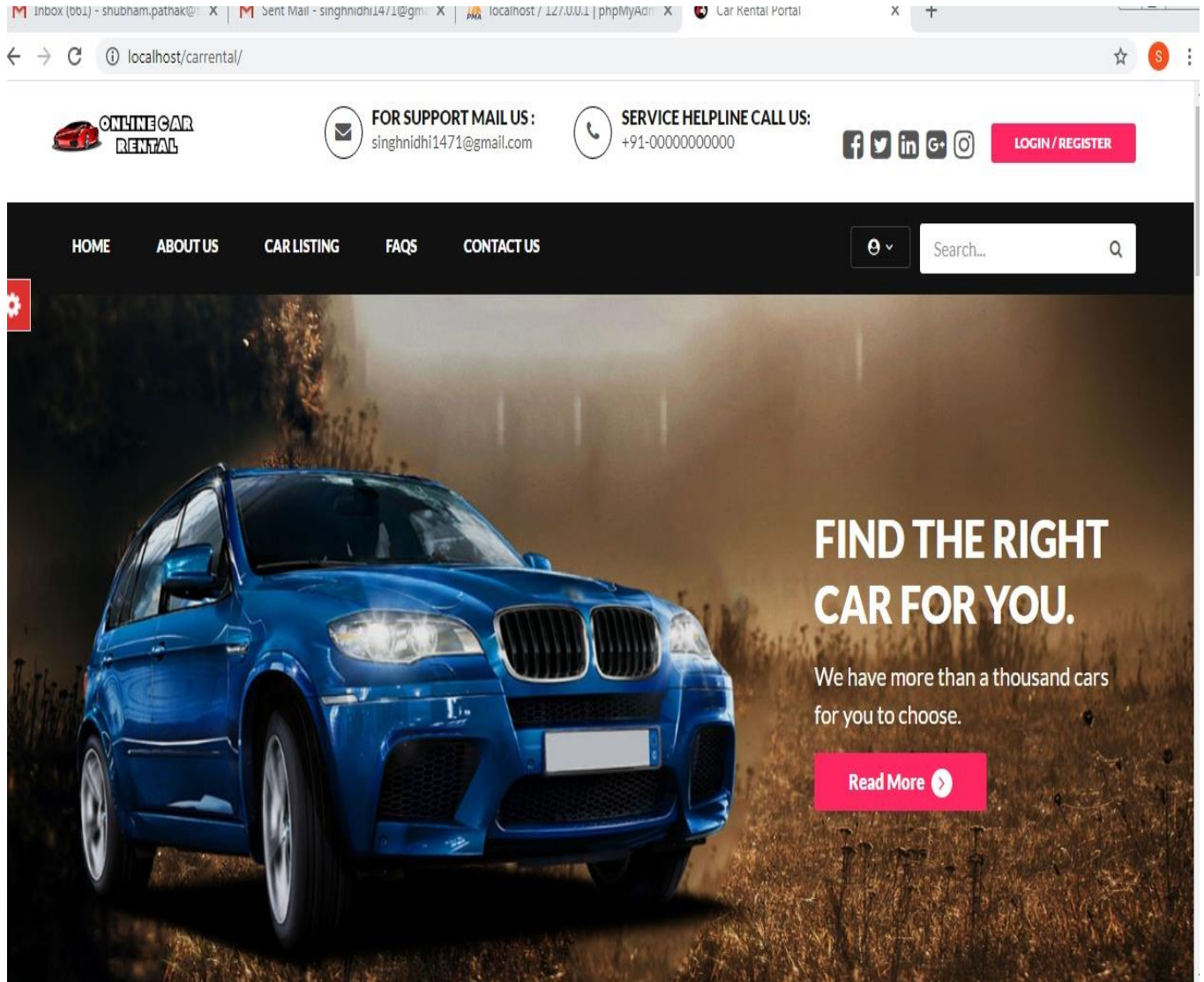


Figure 6: Home Page

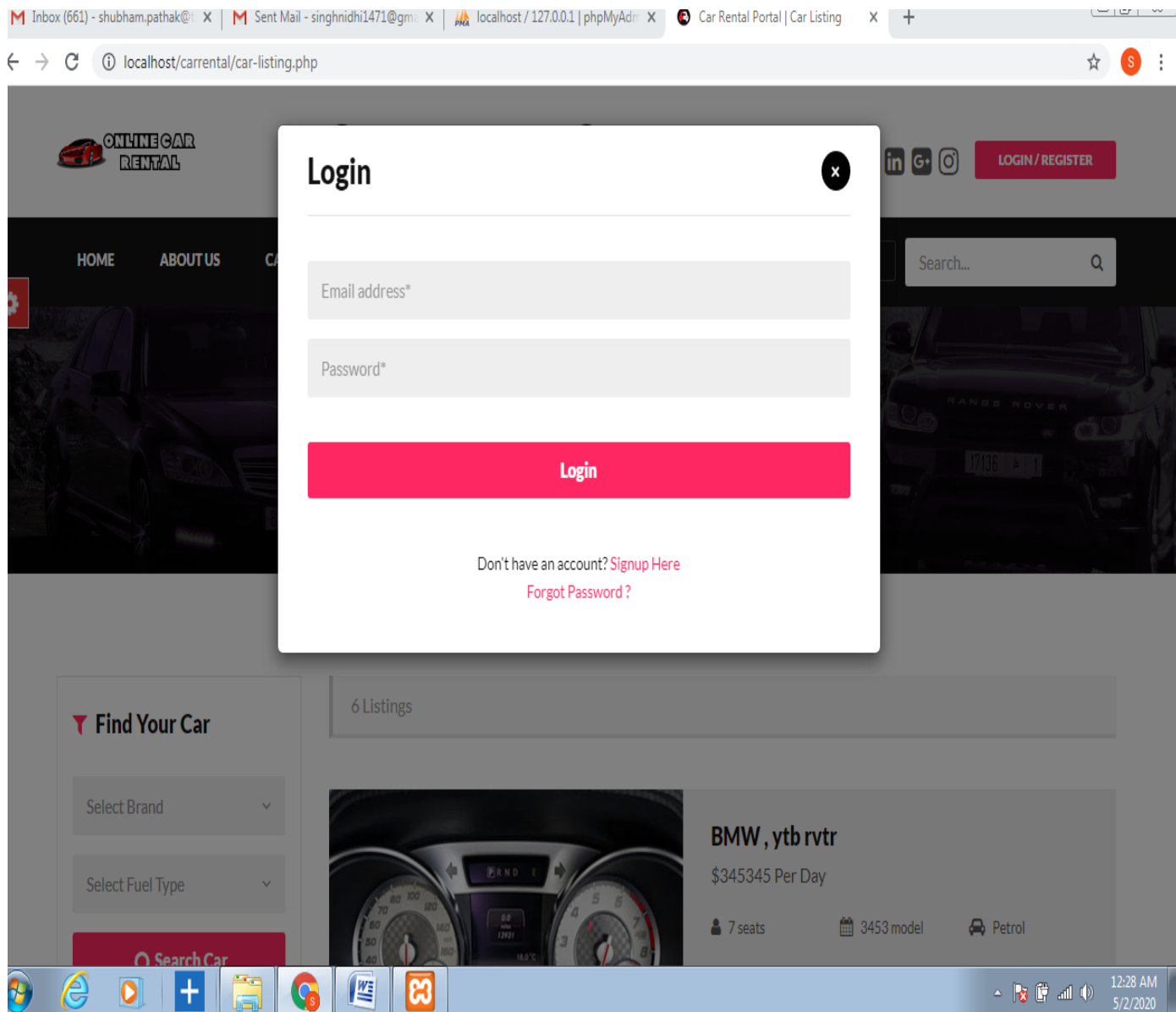


Figure 7: Login Page

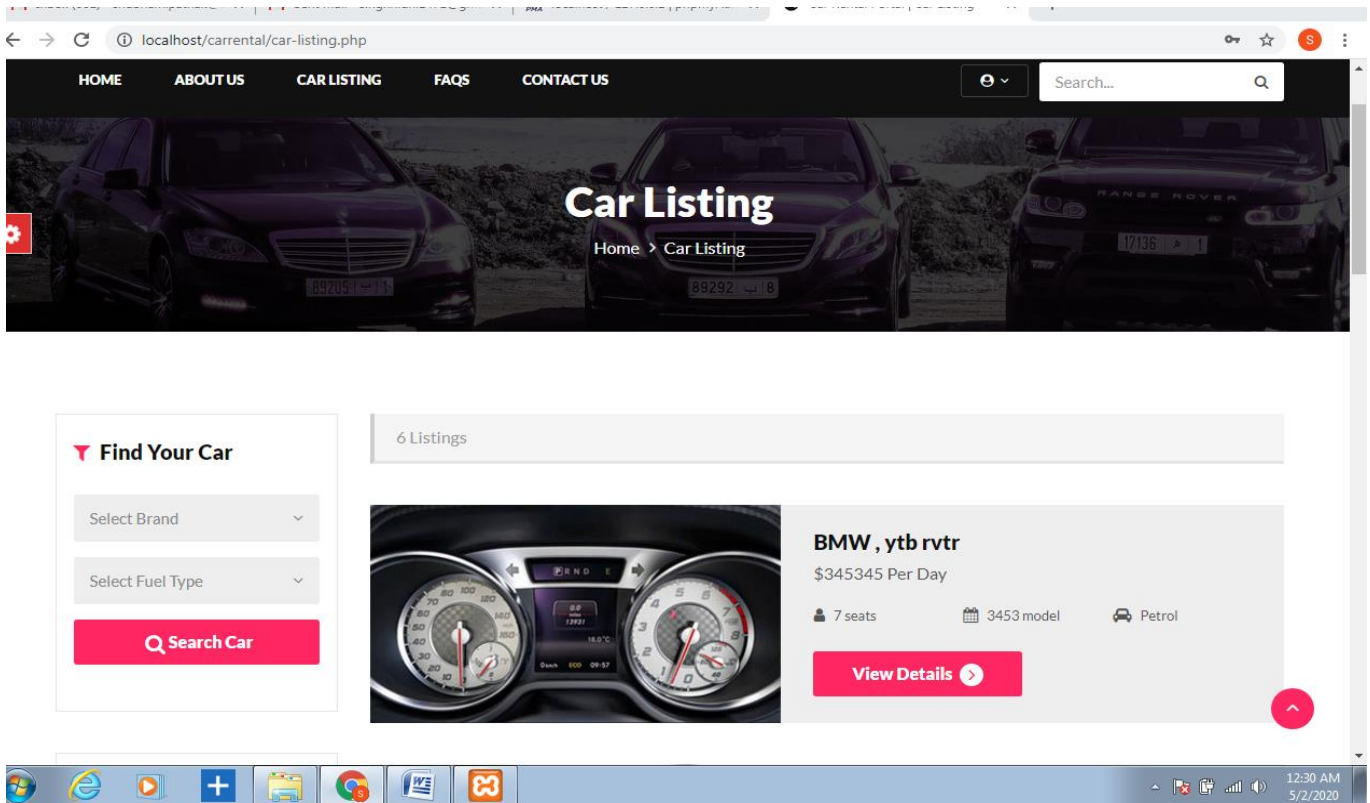


Figure 8: Car Listing Pricing Page

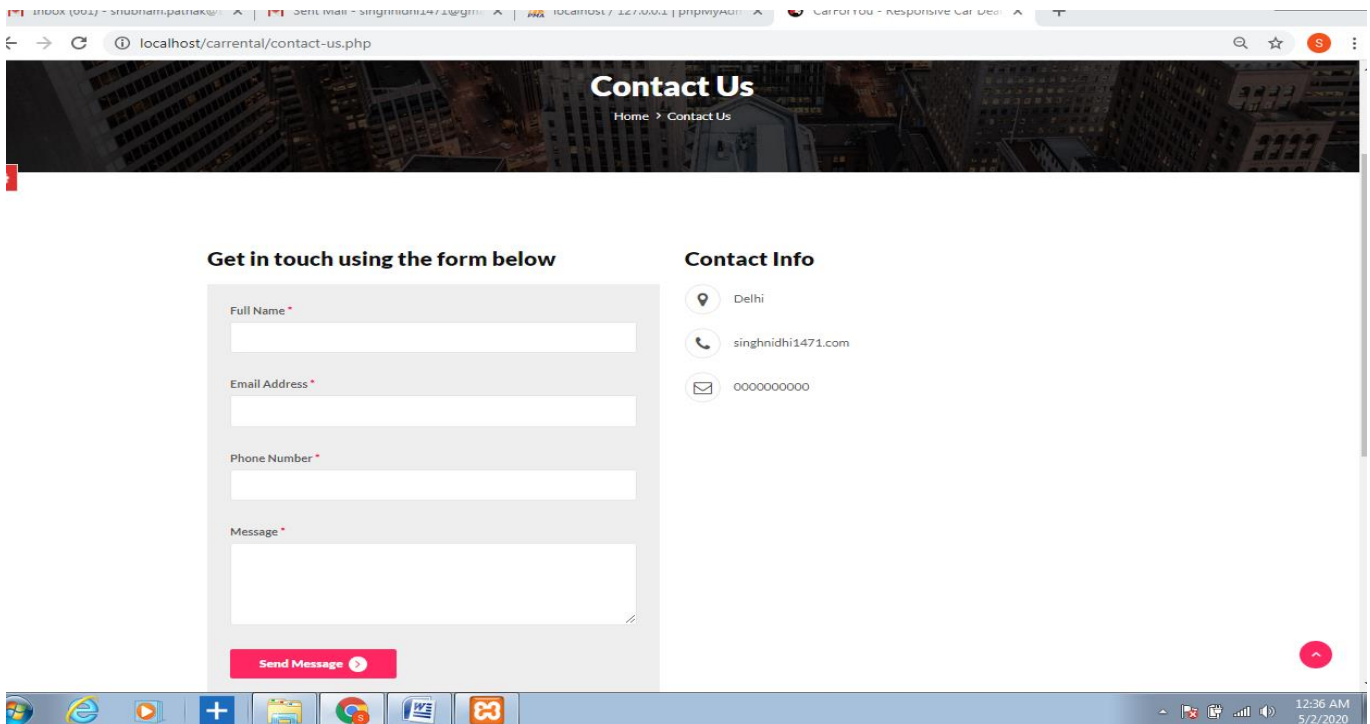


Figure 9: Contact Us Page

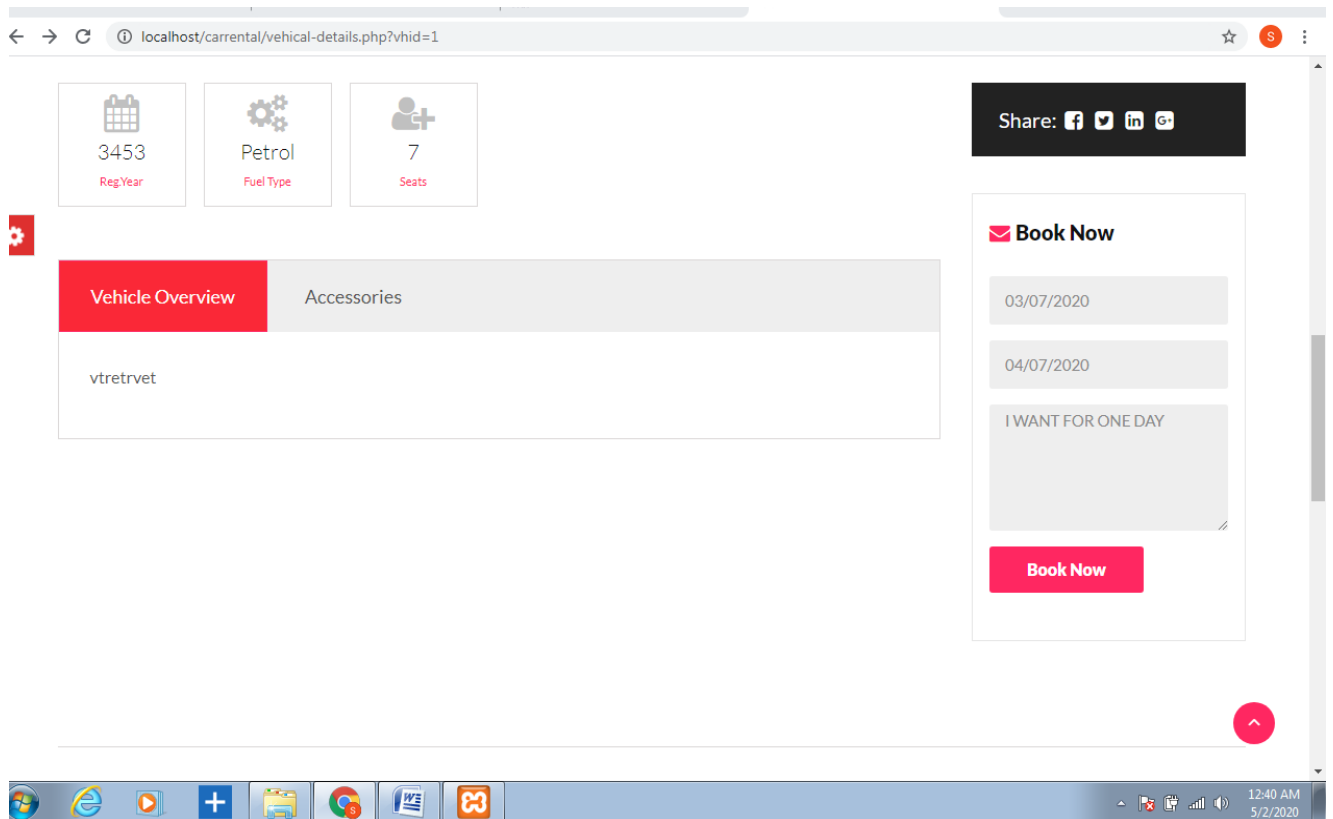


Figure 10: Booking Page

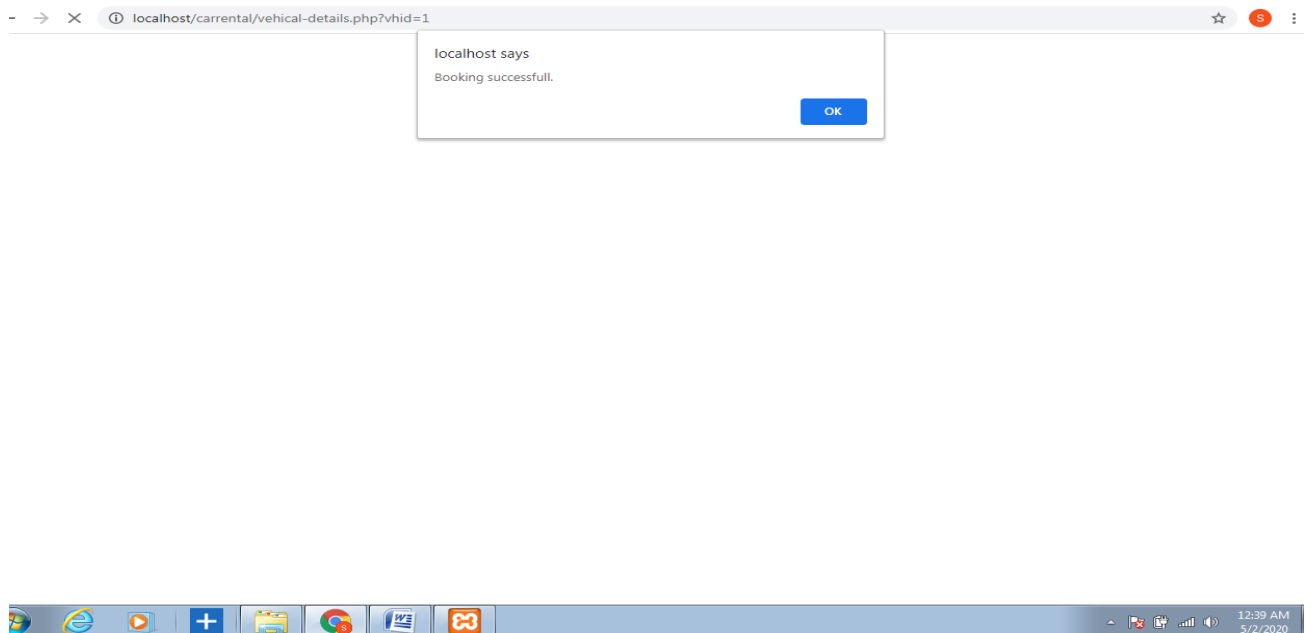


Figure 11: Booking Successful Page

8.2 Summary

The user interface is design keeping the guidelines a good and easy to learn interface to mind. The interface provides proper guidelines for operation, success and error messages to keep user aware of result and operation the interface uses tabular navigations panel to provide links to commonly accessible tasks, proper menus and sub-menus are used wherever required for effective navigation.

CHAPTER-9

CONCLUSION AND SCOPE OF FUTURE WORK

9.1 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 Booking 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.

9.2 Future Enhancement

In near future, we are planning to hire cars daily bases. So that clients can give their car to the customer on daily bases. We are planning to add new feature i.e. pay after the trip. We are working to increase automation in the system to increase user experience great

CHAPTER-10

BIBLIOGRAPHY AND REFERENCES

Books Used:

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

References Used:

- <http://www.carrentingsolutions.com/>
- <http://www.flashvortex.com/>
- http://www.imscart.com/car_rental_software.html
- Wikipedia.org
- www.w3schools.com

