

## Chapter 1

## Introduction

### 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.

### 1.3 Problem Statement

A car rental is a vehicle that can be used temporarily for a fee during a specified period

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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.

## 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:

- Car rental 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.

## **Chapter 2        Requirements Collection and Analysis**

### **2.1 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:

- 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.

### **2.2 Non-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.

e. 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.

## 2.3 Architecture of Front End user

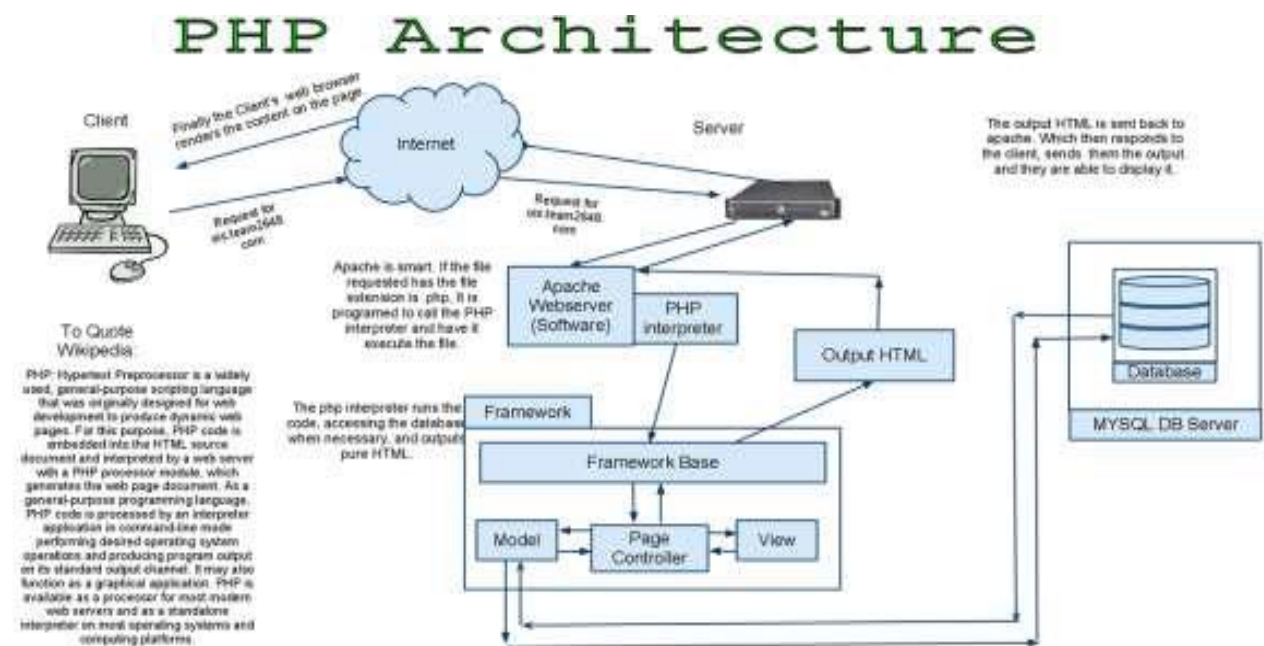


Fig:2.1 PHP Architecture

The front end is an **interface** between the user and the back end. The front and back ends may be distributed amongst one or more systems.

Most of everything you see on any website is a mixture of HTML, CSS, and JavaScript, which are all controlled by the browser. For example, if you're using Google Chrome or Firefox, the browser is what translates all of the code in a manner for you to see and with which to interact, such as fonts, colors, drop-down menus, sliders, forms, etc. In order for all of this to work, though, there has to be something to support the frontend; this is where the backend comes into play.

## 2.4 Architecture of Back End:

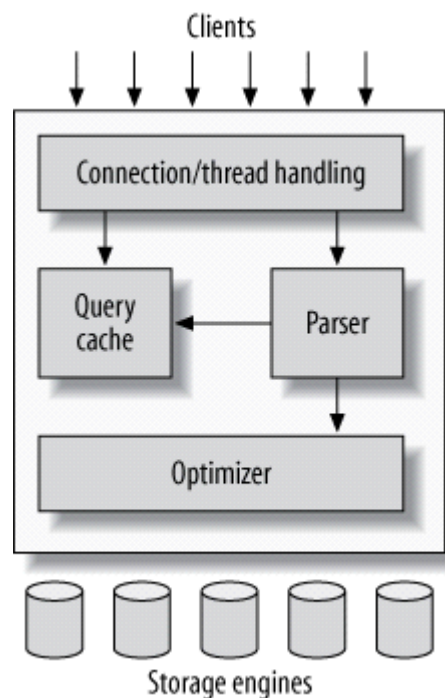


Fig:2.2 MySql Architecture

The topmost layer contains the services that aren't unique to MySQL. They're services most networkbased client/server tools or servers need connection handling, authentication, security, and so forth.

The third layer contains the storage engines. They are responsible for storing and retrieving all data stored "in" MySQL. Like the various file systems available for GNU/Linux, each storage engine has its own benefits and drawbacks. The server communicates with them through the *storage engine API*. This interface hides differences between storage engines and makes them largely transparent at the query layer. The API contains a couple of dozen low-level functions that perform operations such as "begin a transaction" or "fetch the row that has this primary key." The storage engines don't parse SQL[4] or communicate with each other; they simply respond to requests from the server.

## 2.5 HARDWARE REQUIREMENT

### Client side:

RAM	512 MB
HARD DISK	1 GB
PROCESSOR	1.0 GHz

### Server side:

RAM	1 GB
HARD DISK	20 GB
PROCESSOR	2 GHz

## 2.6 SOFTWARE REQUIREMENT

### Client side:

Web Browser	Google Chrome or any compatible browser
Operating System	Windows or any equivalent OS

### Server side:

Web Server	APACHE
Serverside Language	PHP
Database Server	MY SQL
Web Browser	Google Chrome or any compatible browser
Operating System	Windows or any equivalent OS

## CHAPTER 3      SYSTEM ANALYSIS AND DESIGN

### 3.1 Entity-Relationship Diagram

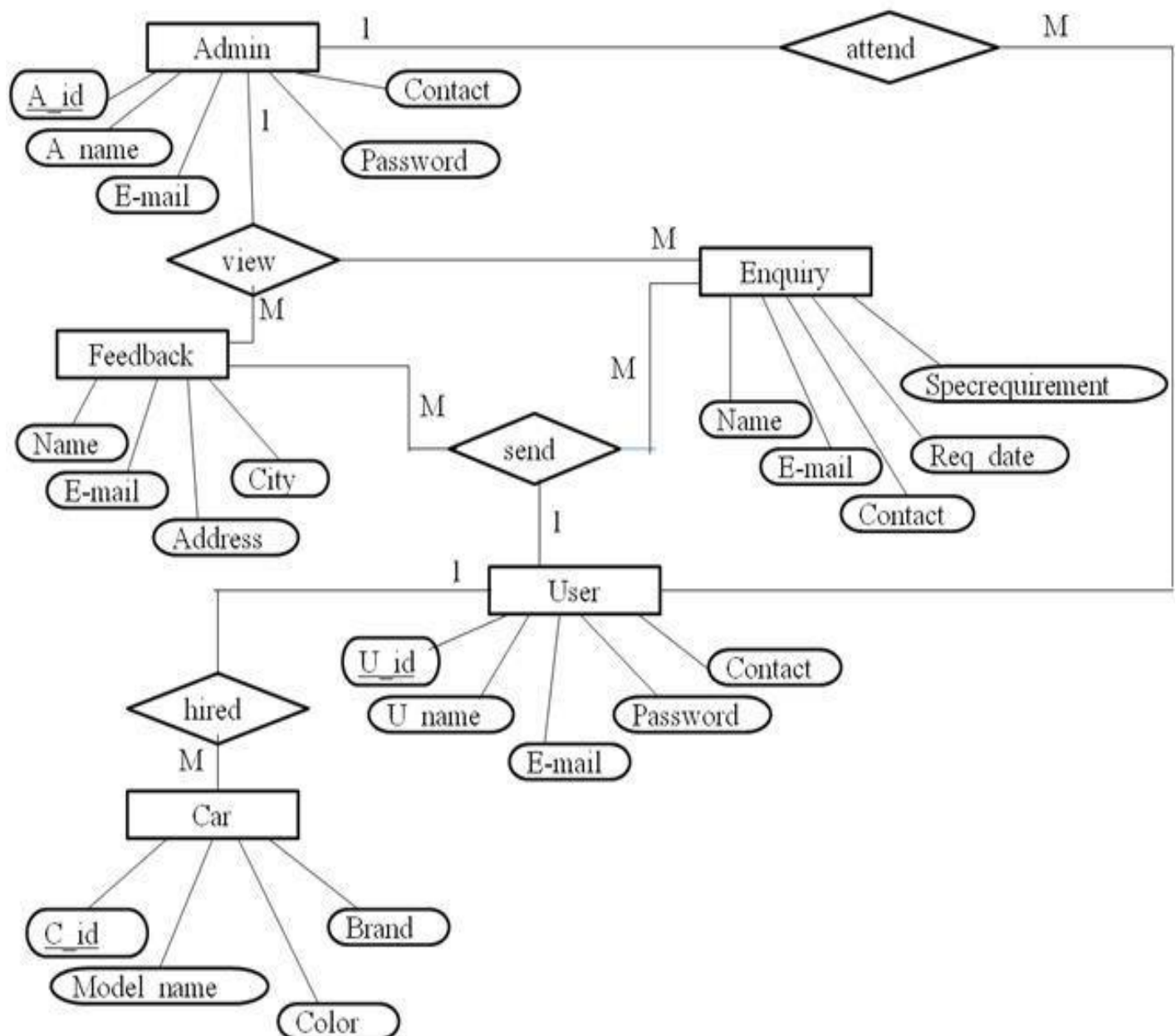


Fig:3.1 ER-diagram

## 3.2 UML Diagrams

### 3.2.1 Use Case Diagram

#### Admin Use Case diagram

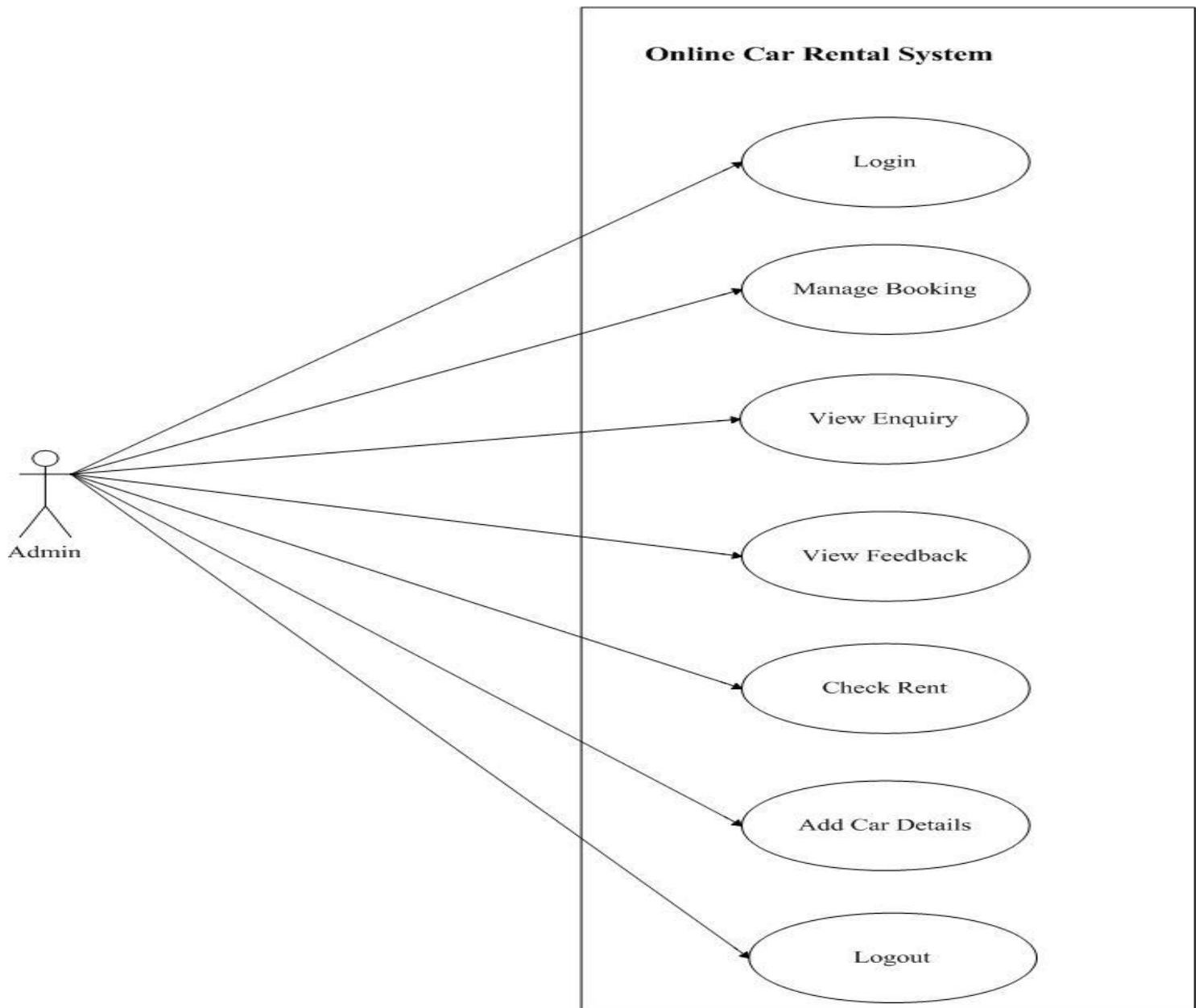


Fig 3.2.1 admin use case diagram



### 3.2.2 User Use Case diagram

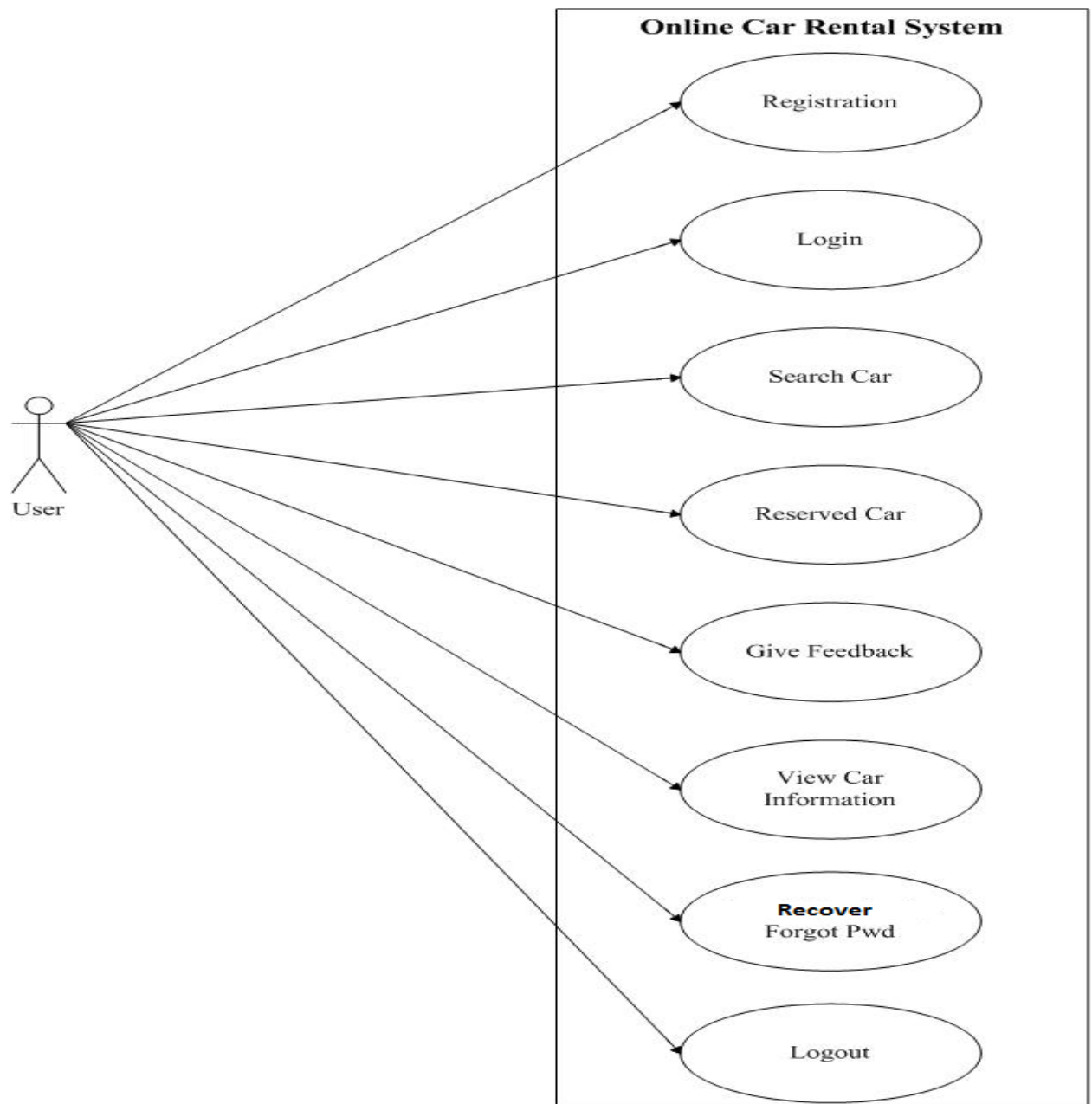


Fig 3.2.2 User use case diagram

## 3.2.3 Class

### Diagram

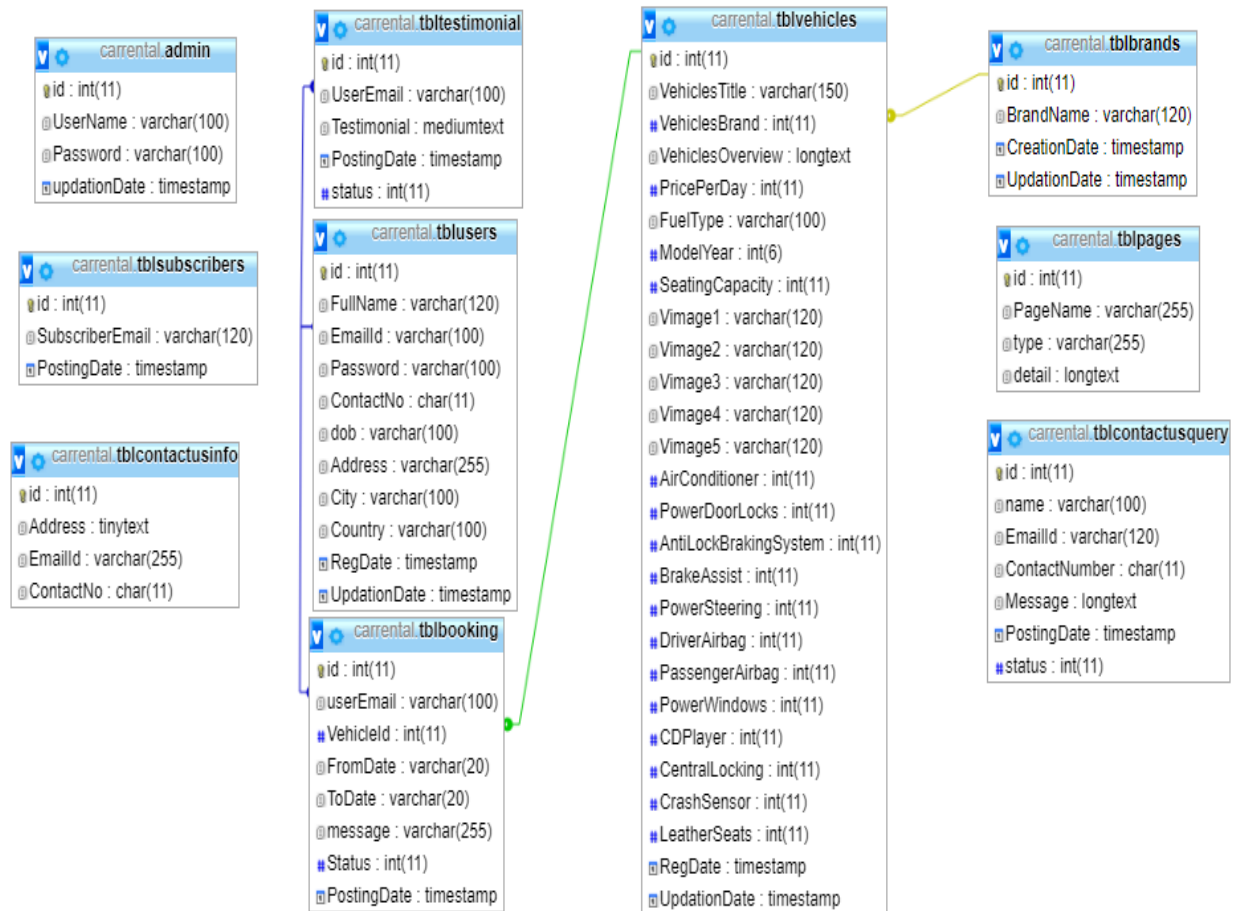


Fig 3.2.3 Class diagram

## 3.3 Technologies Used

- PHP
- CSS
- MySql
- Xampp Tool
- Java Script

### 3.3.1 PHP

PHP is now officially known as “**PHP: Hypertext Preprocessor**”. It is a server-side scripting language usually written in an HTML context.

Unlike an ordinary HTML page, a PHP script is not sent directly to a client by the server; instead, it is parsed by the PHP binary or module, which is server-side installed. PHP code in a script can query databases, create images, read and write files, talk to remote servers – the possibilities is endless.

The output from PHP code is combined with the HTML in the script and the result sent to the user’s webbrowser, therefore it can never tell the user whether the web-server uses PHP or not, because the entire browser sees is HTML.

PHP’s support for Apache and MySQL further increases its popularity. Apache is now the most-used web-server in the world, and PHP can be compiled as an Apache module.

MySQL is a powerful free SQL database, and PHP provides a comprehensive set of functions for working with it. The combination of Apache, MySQL and PHP is all but unbeatable.

PHP primarily acts as a filter, taking input from a file or stream containing text and/or PHP instructions and outputs another stream of data; most commonly the output will be HTML.

It can automatically detect the language of the user. From PHP 4, the PHP parser compiles input to produce byte code for processing by the Zend Engine, giving improved performance over its interpreter predecessor.

The WAMP architecture has become popular in the web industry as a way of deploying web applications.

PHP is commonly used as the P in this bundle alongside Linux, Apache and MySQL, although the P may also refer to Python or Perl. As of April 2007, over 20 million Internet domains were hosted on servers with PHP installed, and PHP was recorded as the most popular Apache module.

### 3.3.2 MySql:

What is a database? Quite simply, it's an organized collection of data. A database management system (DBMS) such as Access, FileMaker Pro, Oracle or SQL Server provides you with the software tools you need to organize that data in a flexible manner.

It includes facilities to add, modify or delete data from the database, ask questions (or queries) about the data stored in the database and produce reports summarizing selected contents.

MySql is a multithreaded, multi-user SQL database management system (DBMS).

The basic program runs as a server providing multi-user access to a number of databases.

Originally financed in a similar fashion to the JBoss model, MySql was owned and sponsored by a single for-profit firm, the Swedish company MySQLAB now a subsidiary of Sun Micro system , which holds the copyright to most of the codebase.

The project's source code is available under terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySql is a database. The data in MySql is stored in database objects called tables. A table is a collection of related data entries and it consists of columns and rows. Databases are useful when storing information categorically.

#### ☐ Queries

A query or is a question a request. With MySql, we can query a database for specific information and have a record set returned.

#### ☐ Create a connection to a database

Before you can access data in a database, you must create a connection to the database. In PHP, this is done with the `mysqli_connect()` function.

Syntax: "`mysqli_connect (server name, username, password);`"

Server name: Optional Specifies the Server to connect .

Default values is localhost: 3306

**Example:**

In the following example we store the connection in a variable (\$con) for later use in the script. The “die” part will be executed if the connection fails:

```
<?php
$con = mysql_connect("localhost","peter","abc123");
if (!$con)
{
    die('Could not connect: ' . mysql_error());
}
// some code
mysql_close($con);
?>
```

Fig 3.4 Database Connection

The connection will be closed automatically when the script ends. To close the connection before, use the `mysqli_close()` function.

### 3.3.3 HTML

HTML means Hypertext Mark-up Language. HTML is a method of describing the format of document, which allows them to be viewed on computer screen.

Web browsers display HTML documents, program which can navigate across networks and display a wide variety of types of information.

HTML pages can be developed to be simple text or to be complex multimedia extravaganzas containing, moving images, virtual reality, and java applets.

The global publishing format of the Internet is HTML. It allows authors to use not only text but also format that text with headings, list and tables, and also includes still images videos, and sound within text.

### 3.3.4 Java Script

JavaScript is a fairly simple language, which is only suitable for fairly simple task. The language is best suited to task which runs for a short time and most commonly used to manipulate the pieces of the document object model.

The idea behind finding JavaScript is to find a language which could be used to provide a client side in browser application but which was not as complicated as java.

#### ☐ **Benefits of JavaScript:**

- ☐ JavaScript has number of benefit to any one who wants to make their website dynamic
- ☐ It is widely supported in web browsers.
- ☐ It gives easy access to document object and can manipulate most of them.
- ☐ Java Script can give interesting animation without long download time associated with many multimedia data objects.
- ☐ Web surfers don't need a special plug in to use script.
- ☐ JavaScript relatively secure- JavaScript can neither read from out hard drive not write it, and we cannot get a virus infection from JavaScript.

### 3.3.5 CSS

**Cascading Style Sheets (CSS)** is a style sheet language used for describing the look and formatting of a document written in a markup language.

While most often used to style web pages and user interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG and XUL.

CSS is a cornerstone specification of the web and almost all web pages use CSS style sheets to describe their presentation.

CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colors, and fonts.

### 3.3.6 Connecting to MySql Database

- Before you can access data in a database, you must create a connection to the database.
- In PHP, this is done with the `mysqli_connect()` function.

Syntax

```
mysqli_connect(servername,username,password);
```

Fig: 3.5 MySql Database Connection

Parameter	Description
servername	Optional. Specifies the server to connect to. Default value is "localhost:3306"
username	Optional. Specifies the username to log in with. Default value is the name of the user that owns the server process
password	Optional. Specifies the password to log in with. Default is ""

Fig: 3.6 Parameters Description

Example

In the following example we store the connection in a variable (\$con) for later use in the script. The "die" part will be executed if the connection fails:

```
<?php
$con = mysqli_connect("localhost","peter","abc123");
if (!$con)
{
    die('Could not connect: ' . mysqli_error());
}
// some
```

Fig: 3.7 Sample Database Connection with error message

### 3.3.7 Create a Database

The CREATE DATABASE statement is used to create a database in MySQL.

Syntax

```
CREATE DATABASE database_name
```

Fig: 3.8 Database Creation Syntax

To get PHP to execute the statement above we must use the mysql\_query() function. This function is used to send a query or command to a MySQL connection

#### Example

The following example creates a database called "my\_db":

```
<?php
$con = mysqli_connect("localhost","peter","abc123");
if (!$con)
{
    die('Could not connect: ' . mysqli_error());
}
if (mysqli_query($con "CREATE DATABASE my_db"))
{
    echo "Database created";
}
else
{
    echo "Error creating database: " . mysqli_error();
}
?>
```

Fig: 3.9 Database Creation Code Example



## □ Primary Keys and Auto Increment Fields

- Each table should have a primary key field.

A primary key is used to uniquely identify the rows in a table.

Each primary key value must be unique within the table. Furthermore, the primary key field cannot be null because the database engine requires a value to locate the record.

The following example sets the personID field as the primary key field. The primary key field is often an ID number, and is often used with the AUTO\_INCREMENT setting.

AUTO\_INCREMENT automatically increases the value of the field by 1 each time a new record is added.

To ensure that the primary key field cannot be null, we must add the NOT NULL setting to the field.

## Chapter 4 Implementation

Implementation is the process of converting a new revised system design into operation.

The objective is to put the new revised system, which has been tested into operation while holding costs, risks and personal irritation to the minimum.

A critical aspect of the implementation process is to ensure that there will be no description in the function of the organization.

The best methods for gaining control while implementation any new system would be to use well planned test files for testing all new programs.

Once the software is developed for the system and testing is carried out, it is the process of making the newly designed system fully operational and consistent in performance.

### 4.1 Database Tables

**Table : Admin**

Sr. No	Field Name	Data type(Size)	Constraints	Description
1	id ( <i>Primary</i> )	int(11)	Primary Key	It is store Admin id
2	UserName	varchar(100)	Not Null	It is store admin user name
3	Password	varchar(100)	Not Null	It is store the password of Admin
4	updationDate	timestamp	NotNull	It is store the profile updating date

Fig 4.1.1 Admin table

**Table : tblusers**

Sr. No	Field Name	Data type(Size)	Constraints	Description
1	id (Primary)	int(11)	Primary Key	It is store User id
2	FullName	varchar(120)	Null	It is store User name
3	EmailId	varchar(100)	Null	It is store email address of User
4	Password	varchar(100)	Null	It is store Password
5	ContactNo	char(11)	Null	It is store Contact no
6	Dob	varchar(100)	Null	It is store Birthdate
7	Address	varchar(255)	Null	It is store Address
8	City	varchar(100)	Null	It is store city
9	RegDate	timestamp	CURRENT_TIMESTAMP	It is store CURRENT_TIMESTAMP
10	UpdationDate	timestamp	Null	It store updation date

Fig 4.1.2 users table

**Table : tblbrands**

Sr. No	Field Name	Data type(Size)	Constraints	Description
1	id (Primary)	int(11)	Primary Key	It is store brand id
2	BrandName	varchar(120)	Not Null	It is store Brand name
3	CreationDate	timestamp	CURRENT_TIMESTAMP	It is store brand creation date
4	UpdationDate	timestamp	NotNull	It is store brand updation date

Fig 4.1.3 Brands table

**Table :** tblcontactusinfo

Sr. No	Field Name	Data type(Size)	Constraints	Description
1	Id	Int	Primary Key	It is id of the record
2	Address	tinytext	Null	It is store name of the company
3	EmailId	varchar(255)	Null	It is store of the company email
4	ContactNo	char(11)	Null	It is store of the company contact no

Fig 4.1.4 contact us info table

**Table :** tblcontactusquery

Sr. No	Field Name	Data type(Size)	Constraints	Description
1	id ( <i>Primary</i> )	int(11)	Primary Key	It is store enquiry id
2	name	varchar(100)	Null	It is store user
3	EmailId	varchar(120)	Null	It is store email id
4	ContactNumber	char(11)	Null	It is store contact no for user
5	Message	longtext	Null	It is store user message for enquiry
6	PostingDate	timestamp	CURRENT_TIMESTAMP	It store enquiry date
7	status	int(11)	NotNull	It is store status 0 for read and 1 for read

Fig 4.1.5 contact us query table

**Table :** tbltestimonial

Sr. No	Field Name	Data type(Size)	Constraints	Description
1	id ( <i>Primary</i> )	int(11)	Primary Key	It is store feedback id
2	UserEmail	varchar(100)	Not Null	It is store user email
3	Testimonial	mediumtext	Not Null	It is store feedback
4	PostingDate	timestamp	NotNull	It is store posting date of feedback
5	status	int(11)	NotNull	It is store staus(0 for inactive and 1 active)

Fig 4.1.6 Testimonial table

**Table :** tblpages

Sr. No	Field Name	Data type(Size)	Constraints	Description
1	id ( <i>Primary</i> )	int(11)	Primary Key	It is store page id
2	PageName	varchar(255)	Null	It is store page name
3	type	varchar(255)	Not Null	It is store page type
4	detail	longtext	Not Null	It is store pages info

Fig 4.1.7 Pages table

**Table : tblvehicles**

Sr. No	Field Name	Data type(Size)	Constraints	Description
1	id (Primary)	int(11)	Primary Key	It is store User id
2	VehiclesTitle	varchar(150)	Null	It is store vehicle title
3	VehiclesBrand	int(11)	Null	It is store vehicle brand id
4	VehiclesOverview	longtext	Null	It is store vehicle overview
5	PricePerDay	int(11)	Null	It is store vehicle rent perday
6	FuelType	varchar(100)	Null	It is store fuel type of vehicle
7	ModelYear	int(6)	Null	It is store model year of vehicle
8	SeatingCapacity	int(11)	Null	It is store seating capacity of vehicles
9	Vimage1	varchar(120)	Null	It is store vehicle image 1
10	Vimage2	varchar(120)	Null	It is store vehicle image 2

11	Vimage3	varchar(120)	Null	It is store vehicle image 3
12	Vimage4	varchar(120)	Null	It is store vehicle image 4
13	Vimage5	varchar(120)	Null	It is store vehicle image 5
14	AirConditioner	int(11)	Null	It is store availability of air conditioner in vehicle
15	PowerDoorLoc ks	int(11)	Null	It is store availability of power door locaks in vehicle
16	AntiLockBrakin gSystem	int(11)	Null	It is store availability of Anti locak Braking System in vehicle
17	BrakeAssist	int(11)	Null	It is store availability of Brake Assist in vehicle
18	PowerSteering	int(11)	Null	It is store availability of Power steering in vehicle
19	DriverAirbag	int(11)	Null	It is store availability of Driver Airbag in vehicle
20	PassengerAirba g	int(11)	Null	It is store availability of Passenger airbag in vehicle
21	PowerWindows	int(11)	Null	It is store availability of Power windows in vehicle
22	CDPlayer	int(11)	Null	It is store availability of CD Player in vehicle
23	CentralLocking	int(11)	Null	It is store availability of Central locking in vehicle
24	CrashSensor	int(11)	Null	It is store availability of crash sensor in vehicle
25	LeatherSeats	int(11)	Null	It is store availability of leathers seats in vehicle
26	RegDate	timestamp	Null	It is store vehicle creation date
27	UpdationDate	timestamp	Null	It is store vehicle updation date

**Table : tblbooking**

Sr. No	Field Name	Data type(Size)	Constraints	Description
1	id ( <i>Primary</i> )	int(11)	Primary Key	It is store booking id
2	userEmail	varchar(100)	Null	It is store User email
3	VehicleId	int(11)	Null	It is store vehicle id
4	FromDate	varchar(20)	Null	It is store booking from date
5	ToDate	varchar(20)	Null	It is store booking To date
6	message	varchar(255)	Null	It is store message
7	Status	int(11)	Null	It is store confirmation and cancellation status
8	PostingDate	timestamp	Null	It is store Booking date

Fig 4.1.8 booking table



## Chapter 5 Testing

The development of software system involves a series of production activities where opportunities for injection human facilities are enormous.

Error may begin to occur at very inception of the process where the objectives, may be erroneously or imperfectly specified, as well as in later design and development stages.

Because of human inability to perform and communicate in perform software development is accompanied by quality assurance activity.

No	Data input	Excepted Output	Actual Output	Pass / Fail
1	All files are empty	Error message:  *indicates compulsory field*	Error message: *indicates compulsory field*	Pass
2	Email	Error message: Invalid Email-address	Error message: Invalid Email-address	Pass
3	Password and confirm password	Error message: Both Password does not match	Error message: Both Password does not match	Pass
4	Login	Login to the system should be try with the login assigned by the admin and the correct password	Login should be successful and the user should enter into the system	Fail
		The System give an error and denied from the Login.	Login should fail with an error 'Invalid Details'	Pass
5	User	Login should be allow and admin get Admin home page.	Login successfully and admin get its admin home	Pass

			page	
		Login should be allow and Travel admin get Travel admin home page.	Login successfully and Travel admin get its Travel admin home page	Pass
		Login should be allow and User get Visitor side User page.	Login successfully and User gets its user page.	Pass

6	Validation cases Test	Pre-define format must be required in control	System give error to enter valid input	Pass
		Enter data in a compulsory field with required field validations.	Data must be field in compulsory field otherwise its messages are displayed.	Pass

## Chapter 6 Snap Shots

### 6.1 Admin Page

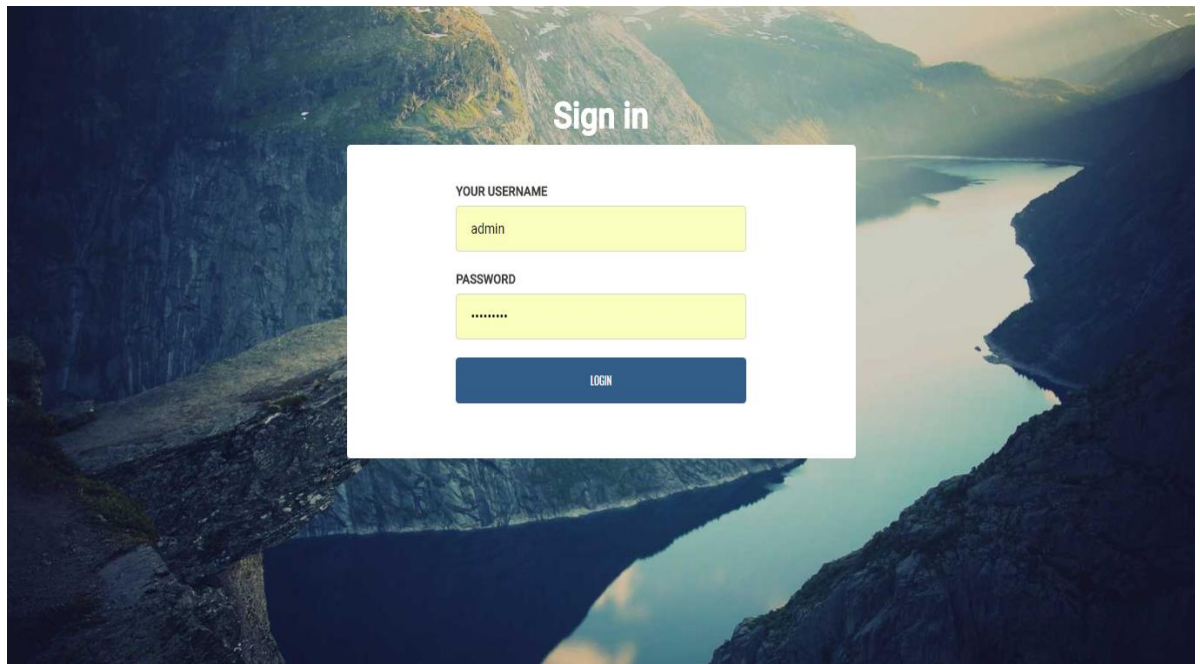


Fig:6.1 admin Page

- Used to login to Admin page

### 6.2 User login Page

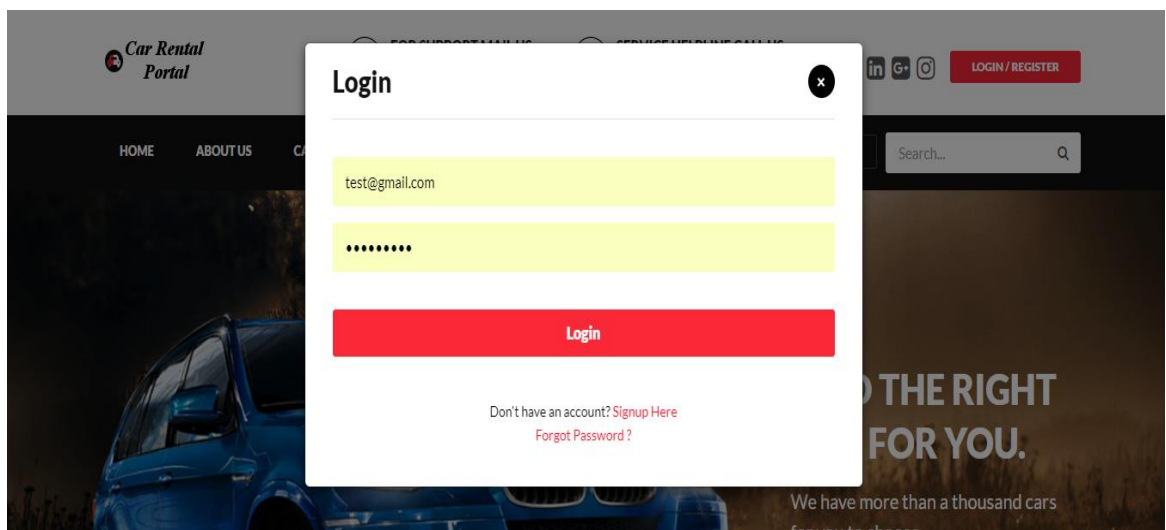


Fig:6.2 User Login Page

- User can login here to book cars.

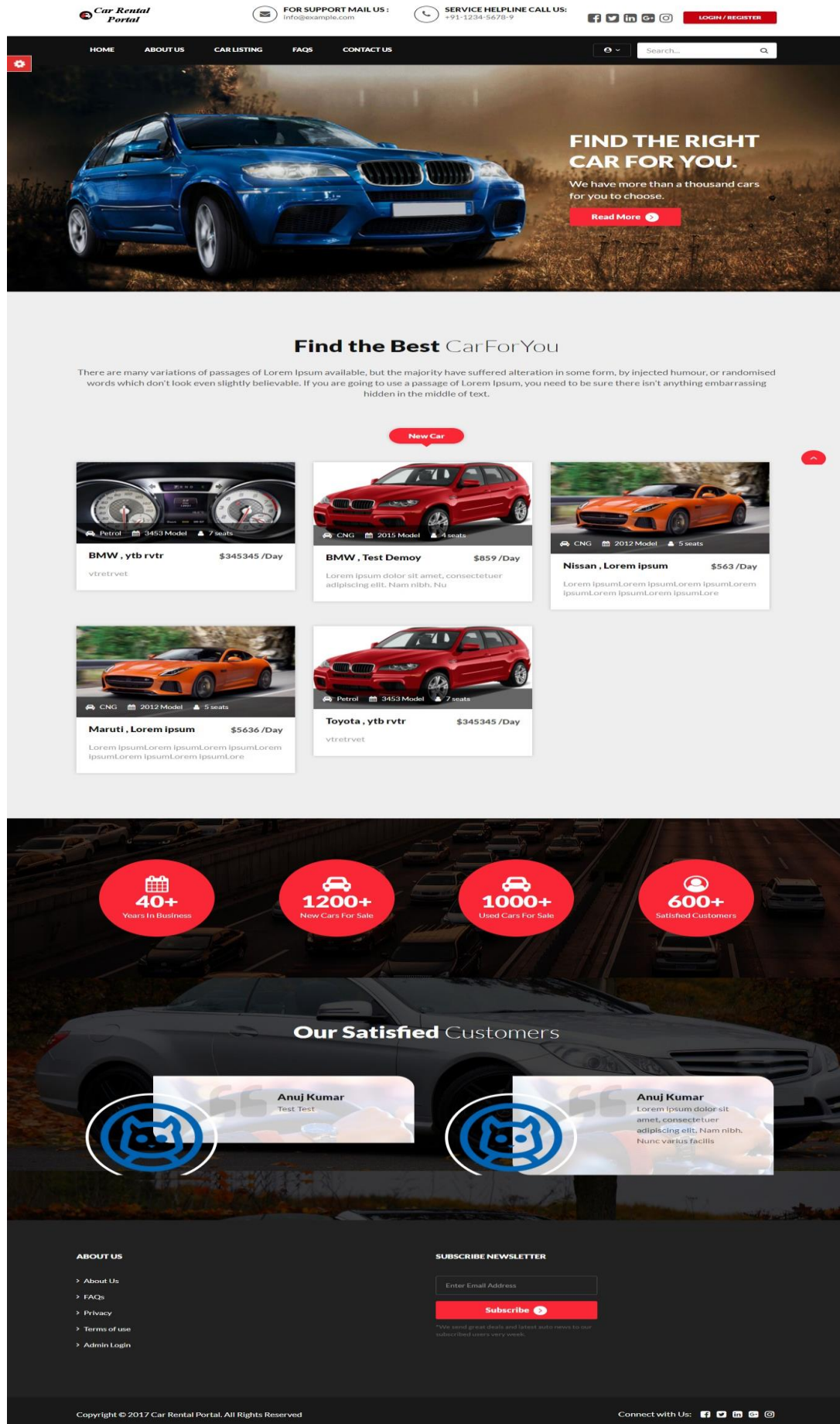


Fig:6.3 Home Page

## 6.4 Car listing Page

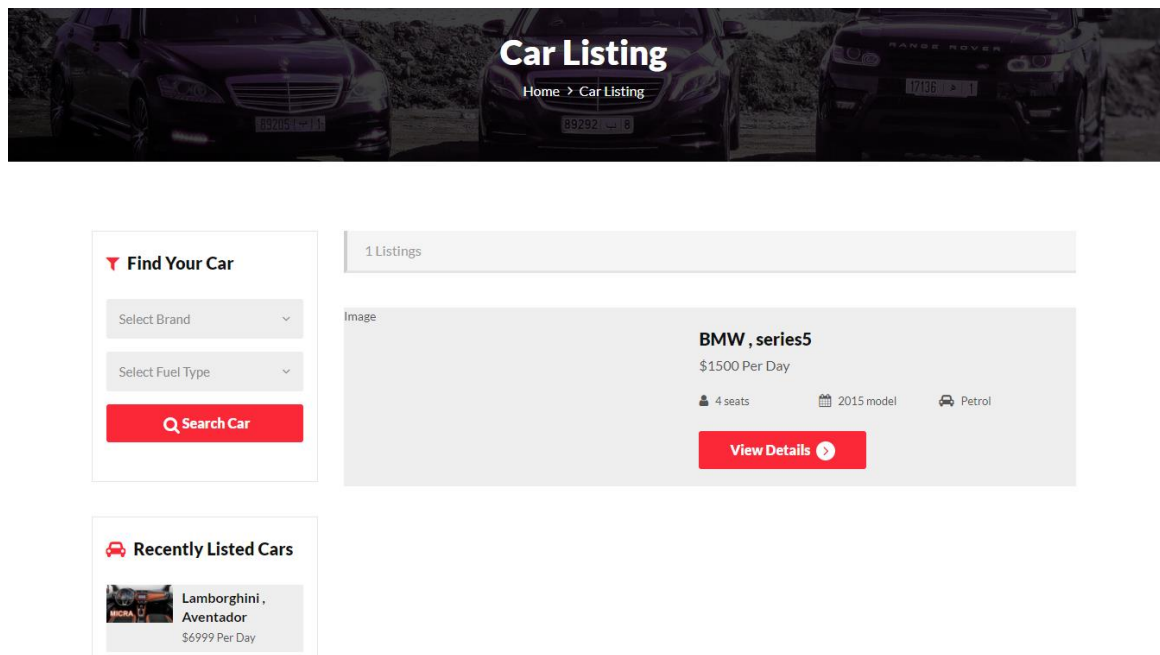


Fig:6.4 car listing

- Here user can see list of all the cars that are present.

## 6.4 Booking Confirmation Page

Car Rental Portal   Admin Panel									
MAIN					aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco				
Dashboard	2	Aditya	Nissan , micra	30/06/2017	02/07/2017	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco	Confirmed	2017-06-27 01:45:43	Confirm / Cancel
Brands	3	Aditya	Maruti , swift	02/07/2017	07/07/2017	Lorem ipsumLorem ipsumLorem ipsumLorem ipsumLorem ipsumLorem ipsumLorem ipsumLorem ipsumLorem ipsumLorem ipsum	Cancelled	2017-06-27 02:40:06	Confirm / Cancel
Vehicles	4	Aditya	BMW , X1	28/09/2017	01/10/2017	i want this car for long ride	Confirmed	2017-11-18 18:43:01	Confirm / Cancel
Manage Booking	5	rajat	Audi , R8	22/10/2017	24/10/2017	audi r8 i want	Confirmed	2017-11-18 18:54:29	Confirm / Cancel
Manage Testimonials	6	sanjana	Lamborghini , Aventador	1/1/2015	2/2/2015	thi this this	Confirmed	2017-11-18 19:13:41	Confirm / Cancel
Manage Conatctus Query	7	sanjana	BMW , series5	22/10/2017	27/11/2017	hi want	Confirmed	2017-11-28 16:37:07	Confirm / Cancel
Reg Users	8	sanjana	BMW , series5	22/10/2017	27/11/2017	hi want	Not Confirmed yet	2017-11-28 16:37:46	Confirm / Cancel
Manage Pages	9	sanjana	BMW , series5	22/10/2017	27/11/2017	hi want	Not Confirmed	2017-11-28 16:38:19	Confirm / Cancel
Update Contact Info									
Manage Subscribers									

## Chapter 7      POST IMPLEMENTATION

- The website application is self –maintained.
- The project support already multiple Car .
- There is no need provide post implementation support.
- The admin can access add ,edit ,delete process.

**Chapter 8****BIBLIOGRAPHY**

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