Online Vehicle Rental System

Mini Project Report

Submitted by

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Last but not the least, I take this opportunity to put across my wholehearted gratefulness to the directly or indirectly helping hands, my team mates and all my friends whose encouragement and support which contributed to successful implementation of our project.

Abstract

A rental service is a service in which customers arrive to request the hire of a rental unit.The current system is manual and time consuming. It is also cost ineffective, error prone and due to this customers are dissatisfied. The goal of this project is to automate vehicle rental and reservation so that customers do not need to walk-in or call in order to reserve a vehicle.

In the proposed system, the user can choose one or more required vehicles according to his wish. If driver or guide is needed, it is also provided. They can go online and reserve any kind of vehicle they want from the inventory of available vehicles. Even when a customer chooses to walk-in,computers are available for him to go online and perform his reservation.

In our system, the Admin has the control over the system. The Admin maintains the vehicle database. He can update the vehicle list by checking the rent status. If the rental for a particular vehicle is low, then he can delete that particular vehicle and add the ones having more demand. The Admin also gets timely feedback from customers so that any further changes can also be included.

Thus our system creates a user friendly environment that provides a time saving, efficient and convenient service to the customers.

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CHAPTER 1

INTRODUCTION

Vehicle rental system rents automobiles for short periods of time, generally ranging from a few hours to a few weeks. It is often organized with numerous local branches (which allow a user to return a vehicle to a different location), and primarily located near airports or busy city areas and often complemented by a website allowing online reservations.

The current system is manual and it is time consuming. It is also cost ineffective, and average return is low and diminishing. Currently, customers can call or walk-in in order to rent or reserve a vehicle. The staff of the company will check their file to see which vehicle is available for rental. File data can be lost and maintenance is a lot of work. The current system is error prone and customers are dissatisfied.

Online vehicle rental system automates vehicle rental and reservation. The customers do not need to walk-in or call order to reserve a vehicle. They can go online and reserve any kind of vehicle they want. When the customer chooses to reserve by phone, any of the customer service representatives can help him reserve the vehicle faster.This helps in saving time taken to go manually reserve vehicles. Even when a customer chooses to walk-in, computers are available for him to go online and perform his reservation. This will also keep track of all vehicle reservation and return.

Due to the above mentioned advantages, online vehicle rental systems are preferred over offline/manual vehicle rental system.

1.1: PROBLEM DEFINITION

The aim of this project is to develop an Online Vehicle Rental System, a web-based system that allow customer to register and reserve vehicle online and also make the payment online. Here the customers are free to choose any vehicle of their choice based on their purse and availability of such vehicle at the time of reservation. The system also provides features like time efficiency to show vehicle details, user profiles and whatever the customer will give the feedback to the admin. The admin can modify or update the vehicle, driver, guide details.

CHAPTER 2

SYSTEM ARCHITECTURE

2.1: CUSTOMER MODULE

Customer can rent/reserve any type of vehicle. Eg: Two Wheeler, Four Wheeler, Tourist, Heavy. Customer views the homepage and enters the location and date of journey. The customer enters the required vehicle type. Customer searches and selects the required vehicle. Customer can view the details of the selected vehicle. If desired vehicle is unavailable, user can search for another vehicle from the list. After selecting the required vehicle, the user can login from the login page. If the customer needs to create a new account, he/she can sign up. The customer, after logging in, can enter the booking details and perform payment through online cash payment. The customer can also give feedback and logout after reservation.

2.2: OWNER MODULE

The owner enters the homepage. Owner can login through login page. Owner can view options like rent status, feedback and user details. Owner can also add/delete vehicles from the vehicle list. The owner can log out after performing necessary operations.

2.3: BLOCK DIAGRAM

2.3.1: ADMIN BLOCK

The admin from the main homepage sign-in and reaches the admin homepage.In the admin homepage he can perform the following actions.

- Add or Delete vehicles to Database
- View the vehicle list
- View the user list who have already registered .
- Add or Delete driver
- View the driver list
- Add or Delete guide
- View the guide list
- View the feedback of customers.
- View the rent status.

The admin then logout and again reaches back to main homepage.

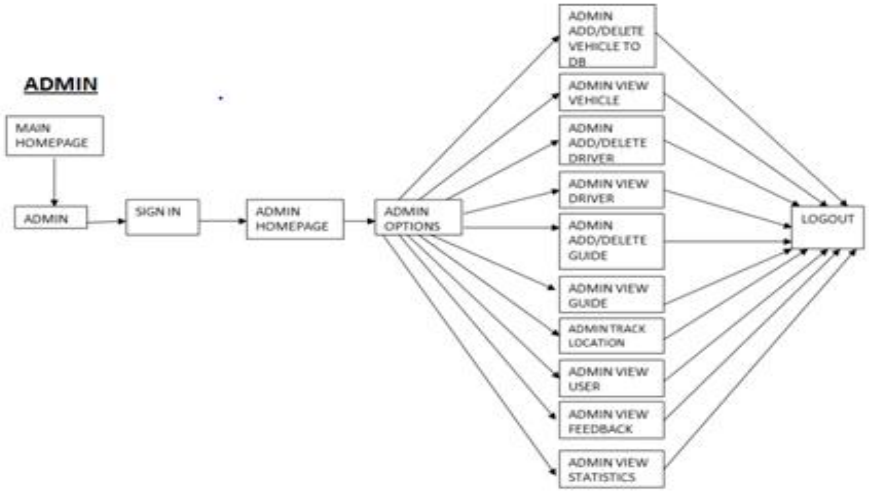

Fig 2.3.1 Admin block Diagram

2.3.2: USER BLOCK

The user from the main homepage signin and reaches the user homepage.A new user can register the details ,create an account and then signin.In the user homepage they are provided with options for search and book a vehicle.The user searches the required vehicle after entering the type of vehicle,then books the vehicle and then make payment.The user can also provide feedback.Then the user logout and reaches back to mainhomepage

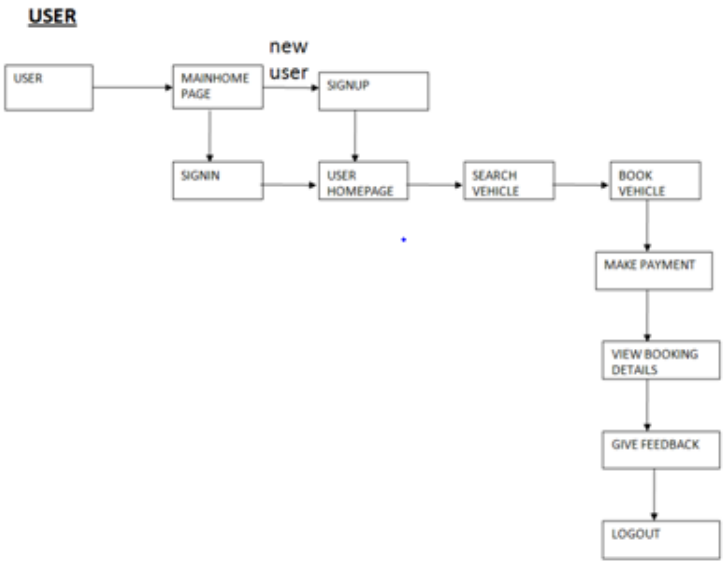

Fig2.3.2 User block Diagram

CHAPTER 3

SYSTEM DESIGN

3. 1 Requirements Definition Table

The requirements attribute table is used to track the status of all types of requirements throughout the life of a project. The types of requirements tracked may be features, user requirements (system use cases), or functional requirements. As each type of requirement is documented, it is helpful to create unique tracking numbers for each type so that the status of the requirement can be obtained easily. The same tracking number may be used across all documentation in order to trace the development of requirements over time.

R.No	Description	Requirements Type	Priority
R1	System aims to develop an online vehicle rental system	STRQ 1	High
R2	System provides an option to reserve/rent any type of vehicle.	STRQ 2	High
R3	System maintains an option for add/edit/cancel the reserved vehicle.	STRQ 3	High
R4	When a vehicle is reserved customer should upload the scanned copy of id proof /driving license/thumb impression/signature,etc	FEAT 1	High
R5	When the vehicle is not currently available, customer can put a wishlist option	FEAT 2	High
R6	Notification through website and registered mobile number for customers who put an unavailable vehicle in wishlist.	FEAT 3	High
R7	System provides self drive rental for four wheelers and two wheelers.	FEAT 4	High
R8	Customers can purchase or rent protective gears.	STRQ 4	Medium
R9	System provides online cash payment system with refund option.	STRQ 5	High
R10	Discounts are given to customers based on special offers (i.e holiday offers).	FEAT 5	Medium
R11	System provides bill-SMS alert through mobile.	FEAT 6	High
R12	Guide/driver allocation is provided for tourist rentals.	FEAT 7	High
R13	System maintains a RDBMS database for storing all details and effective management.	STRQ 6	High
R14	Feedback and review options for customers.	STRQ 7	High
R15	System owner is provided with an option of extra statistics and analysis report generation.	FEAT 8	Medium
R16	Only system owner can edit/add/delete vehicle details.	FEAT 9	High

R17	System provides distance and position calculation using Google API and Google Maps.	FEAT 10	Medium
R18	Different currency support.	FEAT 11	Medium
R19	New members can create an account.	STRQ 8	High
R20	System will provide authentication access.	STRQ 9	High
R21	System provides security by making password invisible.	FEAT 12	High
R22	Captcha will be provided.	FEAT 13	Medium

Fig 3.1Requirements Definition Table

3. 2 Use Case Diagrams

A use case diagram at its simplest is a representation of a user's interaction with the system and depicting the specifications of a use case. A use case diagram can portray the different types of users of a system and the various ways that they interact with the system.

They provide the simplified and graphical representation of what the system must actually do. Due to their simplistic nature, use case diagrams can be a good communication tool for stakeholders.. The purpose of the use case diagrams is simply to provide the high level view of the system and convey the requirements in layman's terms for the stakeholders..

In our use case diagram we have two actors admin and user.Our use-case diagram show’s the admin’s and the user’s interaction with the system. The admin can have the full control over the system.Whereas a user is allowed only to use the user side.The user can perform actions like login, register, search and book vehicle, make payment and give feedback.The admin can add/delete vehicles, driver, guide.He can view the user, drivers, guide details and also the rent status and feedback.

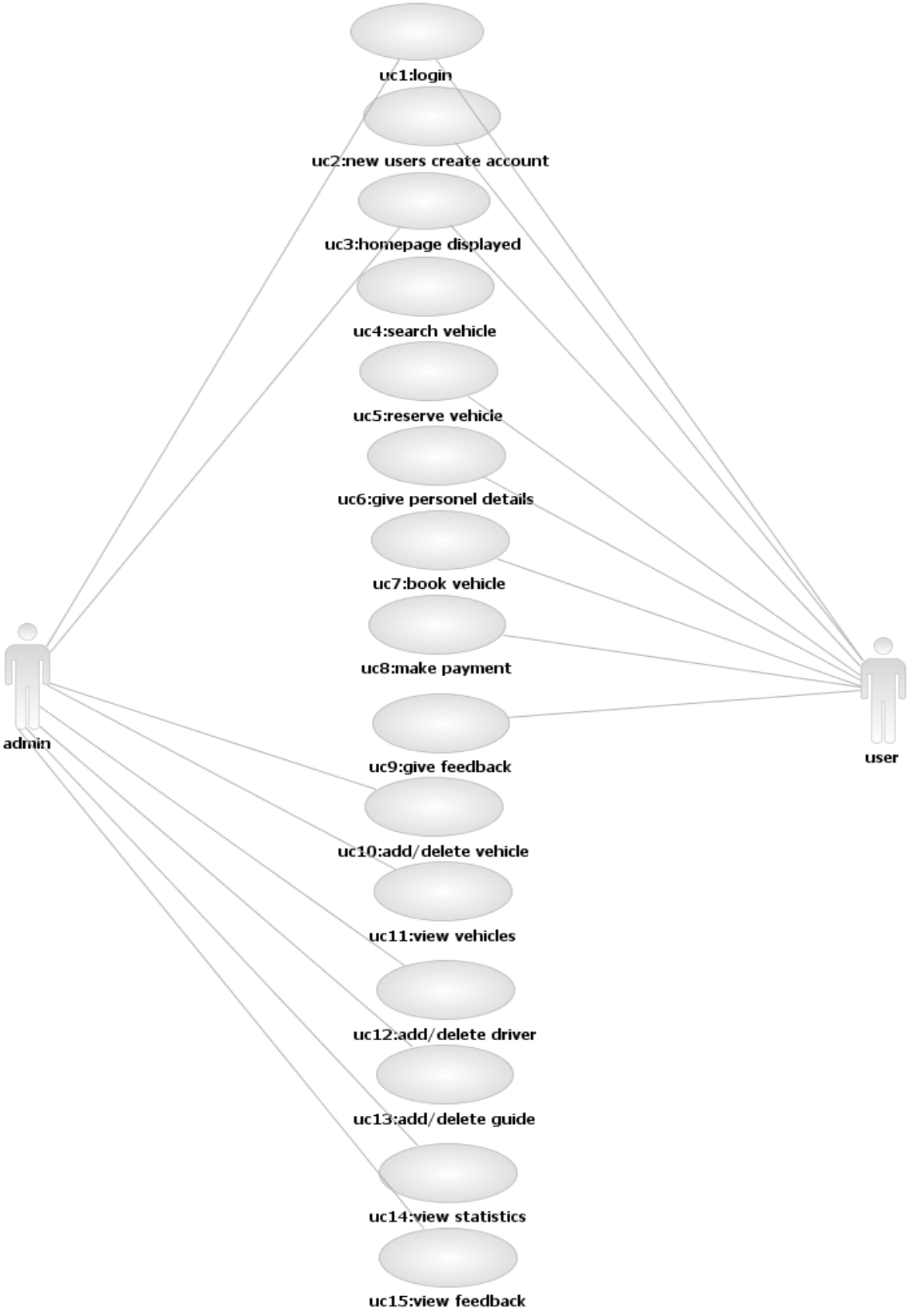

Fig 3.2 Use Case Diagram

3. 3 Activity Diagrams

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency An activity diagram shows the overall flow of control. Arrows run from the start towards the end and represent the order in which activities happen.

Use cases capture user requirements for a system by describing how a system will be used and to what ends in a way that the end user can understand. A use case is a collection of possible sequences of interactions between the system under discussion and its external actors related to a particular goal. The use case is complete when the goal has been satisfied.

A use case is usually written in simple language, so that it can be understood by all participants in the analysis process. A complete set of use cases specifies all the different ways to use the system and therefore defines all behaviour required of the system bounding the scope of the system. Here the activity diagram shows the flow of activities in each functions in the project and the use cases shows the features or user requirements of each functions

User use cases

UC1: User Login

- Flow of Events:

This use case begins when the user enters login page.User enters the username and password.If the username and password are correct, user homepage is displayed.If the username and password are incorrect,then return back to login page

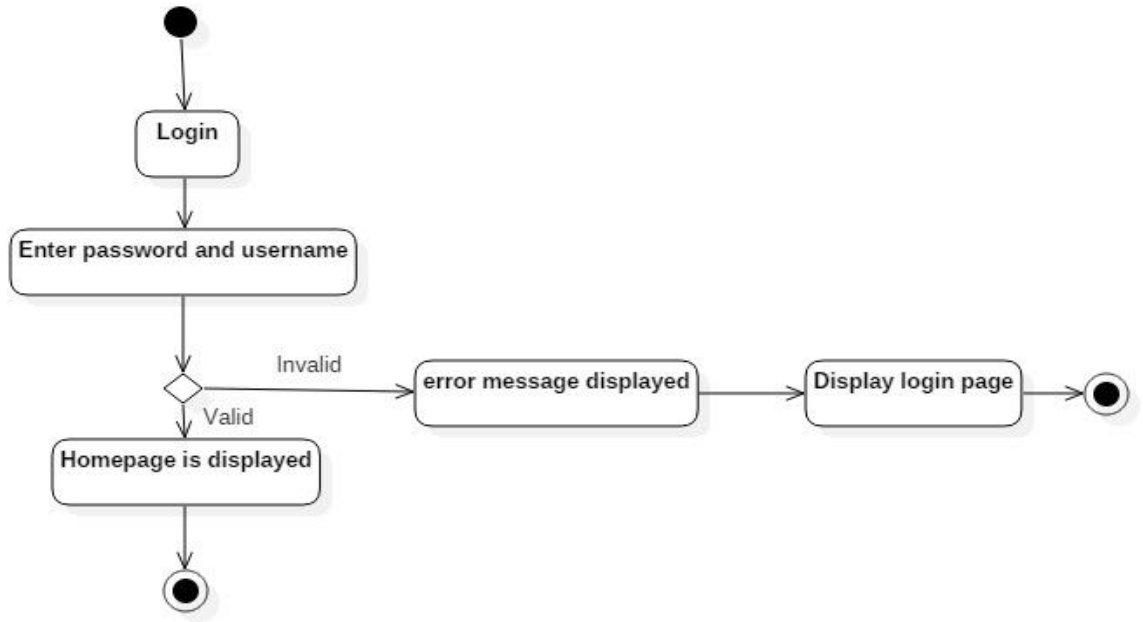

Fig 3.3.1 User Login Activity Diagram

UC2: New members create account

- Flow of Events:

The new members register the details.User enters username and password.If the username and password are correct then display user homepage.If the username and password are incorrect then go back to login page.

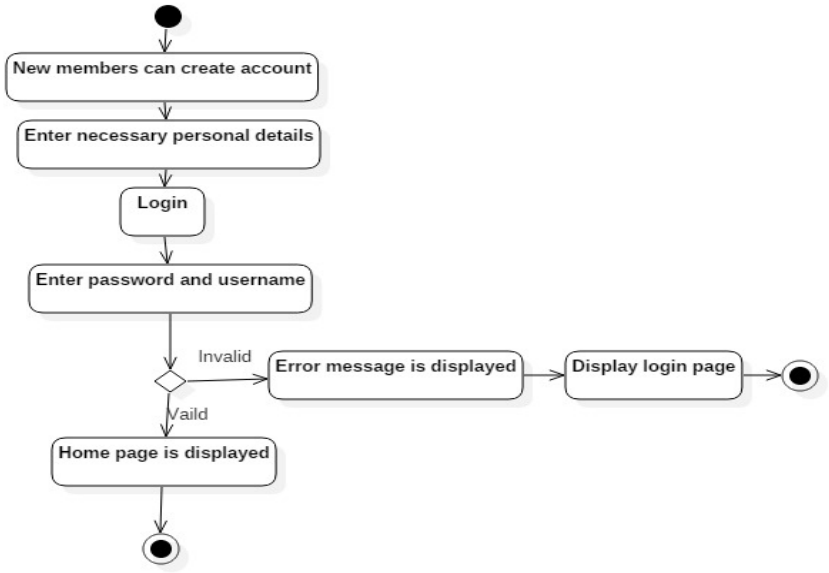

Fig 3.3.2 User Registration Activity Diagram

UC3: Select the type of required vehicle

- Flow of Events:

The user enters the login page. User enters username and password. If the username and password is correct then display user homepage. In the homepage the type of vehicle is selected. If the username and password is incorrect then go back to login page

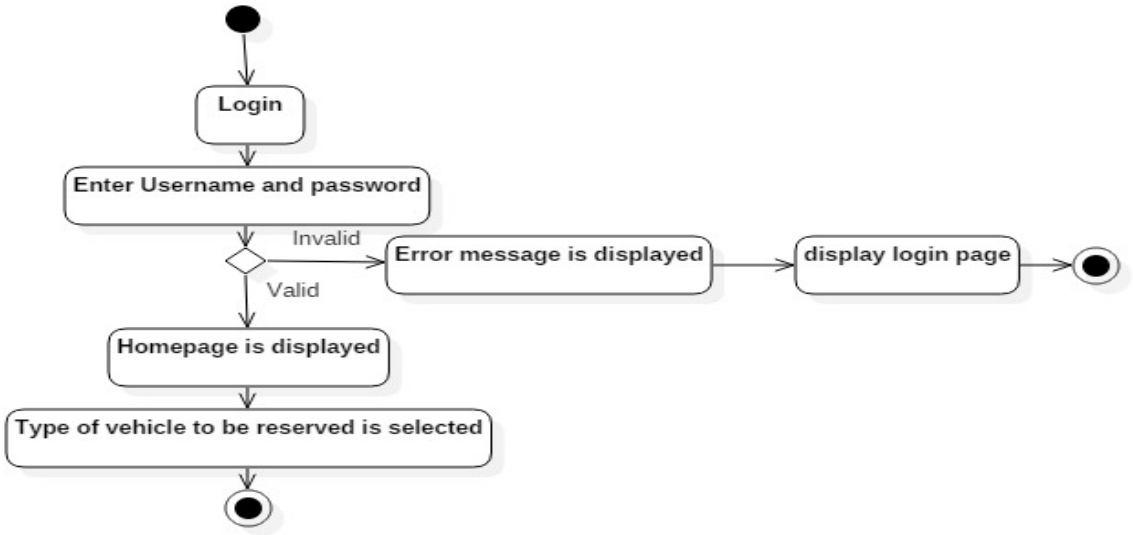

Fig 3.3.3 Vehicle selection Activity Diagram

UC4: Check the required vehicle and book it

- Flow of Events:

The user enters the login page. User enters username and password. If the username and password are correct then display user homepage. If the username and password are incorrect then go back to login page. After giving the vehicle type, user checks the required vehicle. If the required vehicle is not there, then return back to user homepage. Otherwise select and book the required vehicle.

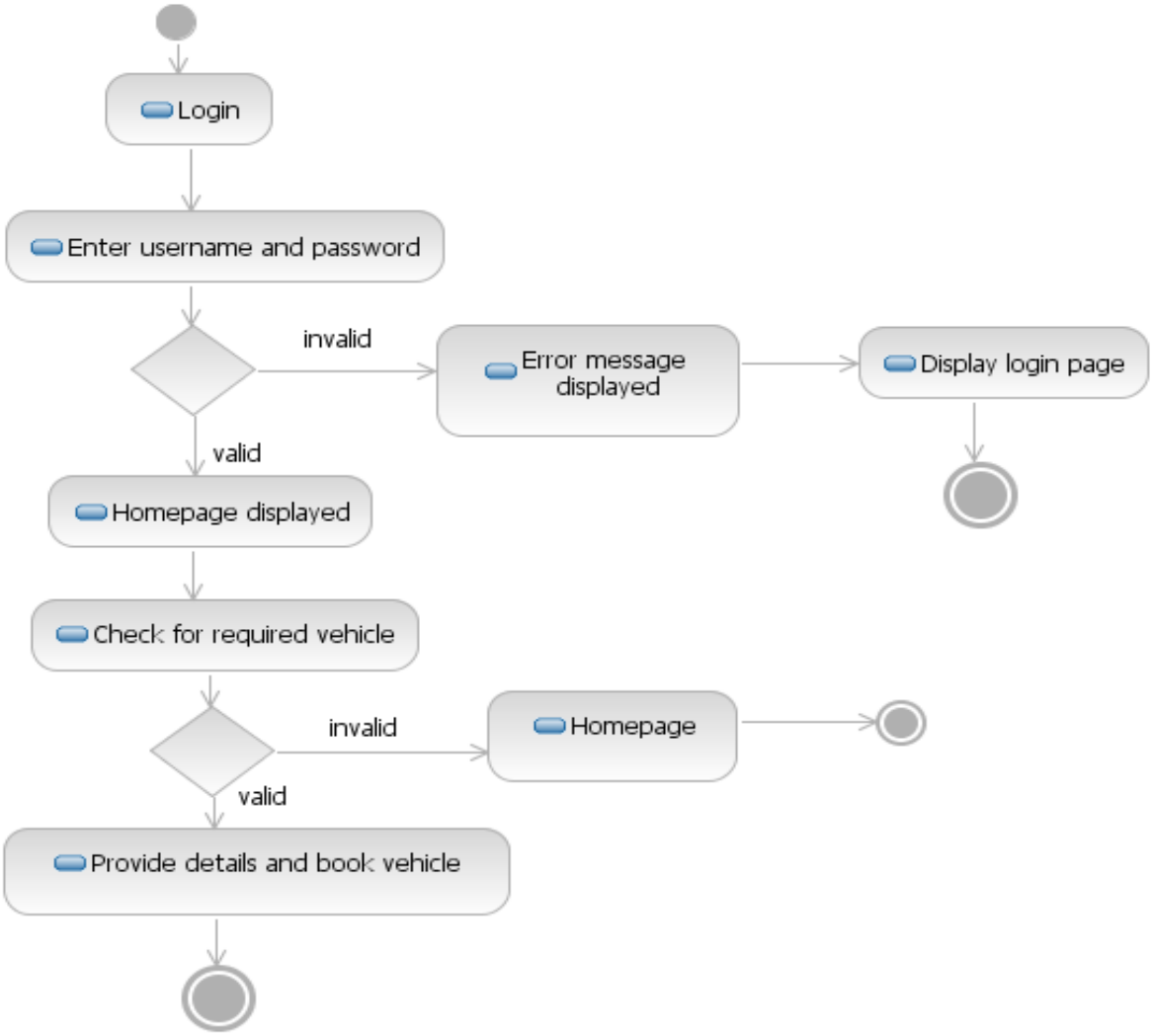

Fig 3.3.4 Vehicle booking Activity Diagram

UC5: Make online cash payment

- Flow of Events:

The user enters the login page. User enters username and password. If the username and password is correct then display user homepage. If the username and password is incorrect then go back to login page. After giving the vehicle type, checks the required vehicle. If the required vehicle is not there, then return back to user homepage. Otherwise select and book the required vehicle. Make the online cash payment.

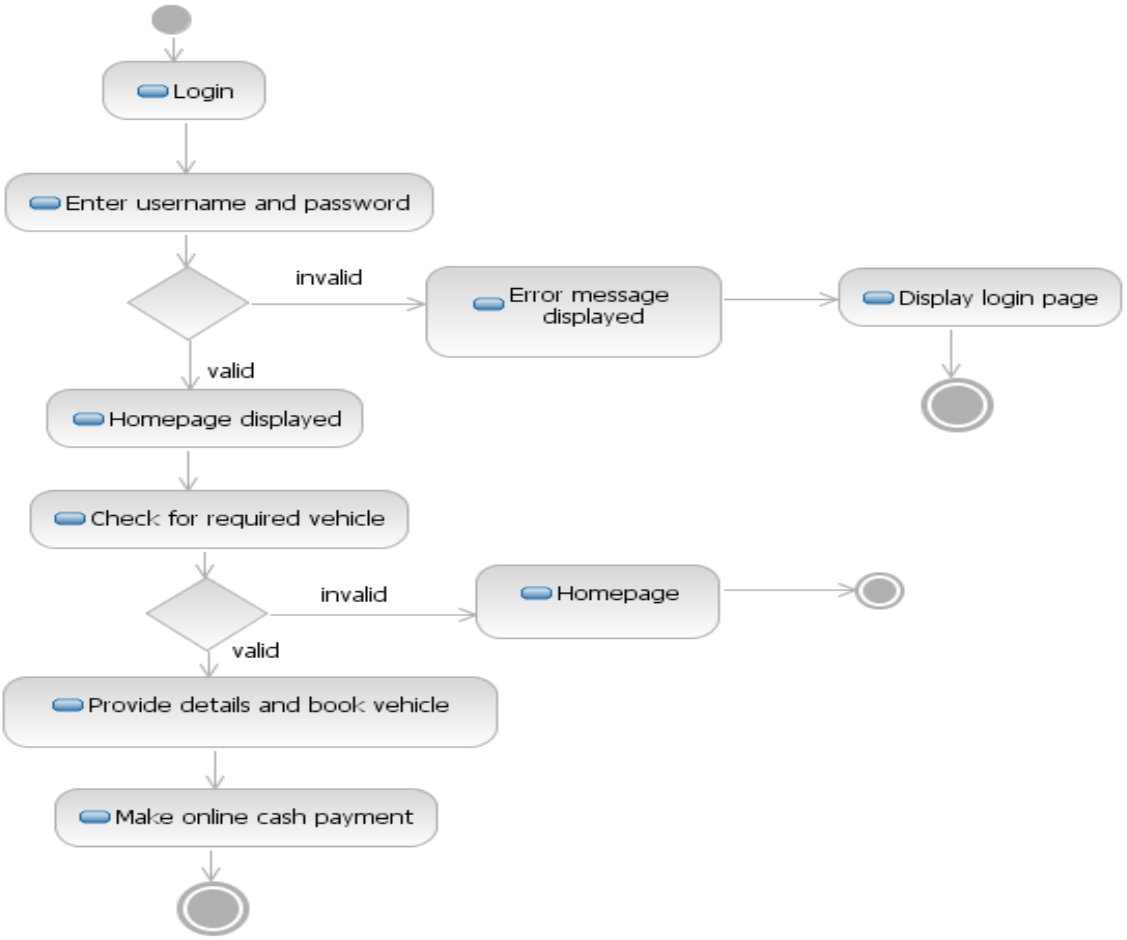

Fig 3.3.5 Online Payment Activity Diagram

UC6: Feedback is provided

- Flow of Events:

The user enters the login page. User enters username and password. If the username and password is correct then display user homepage. If the username and password is incorrect then go back to login page.After giving the vehicle type, checks the required vehicle. If the required vehicle is not there, then return back to user homepage. Otherwise select and book the required vehicle. Make the online cash payment.Give the feedback.

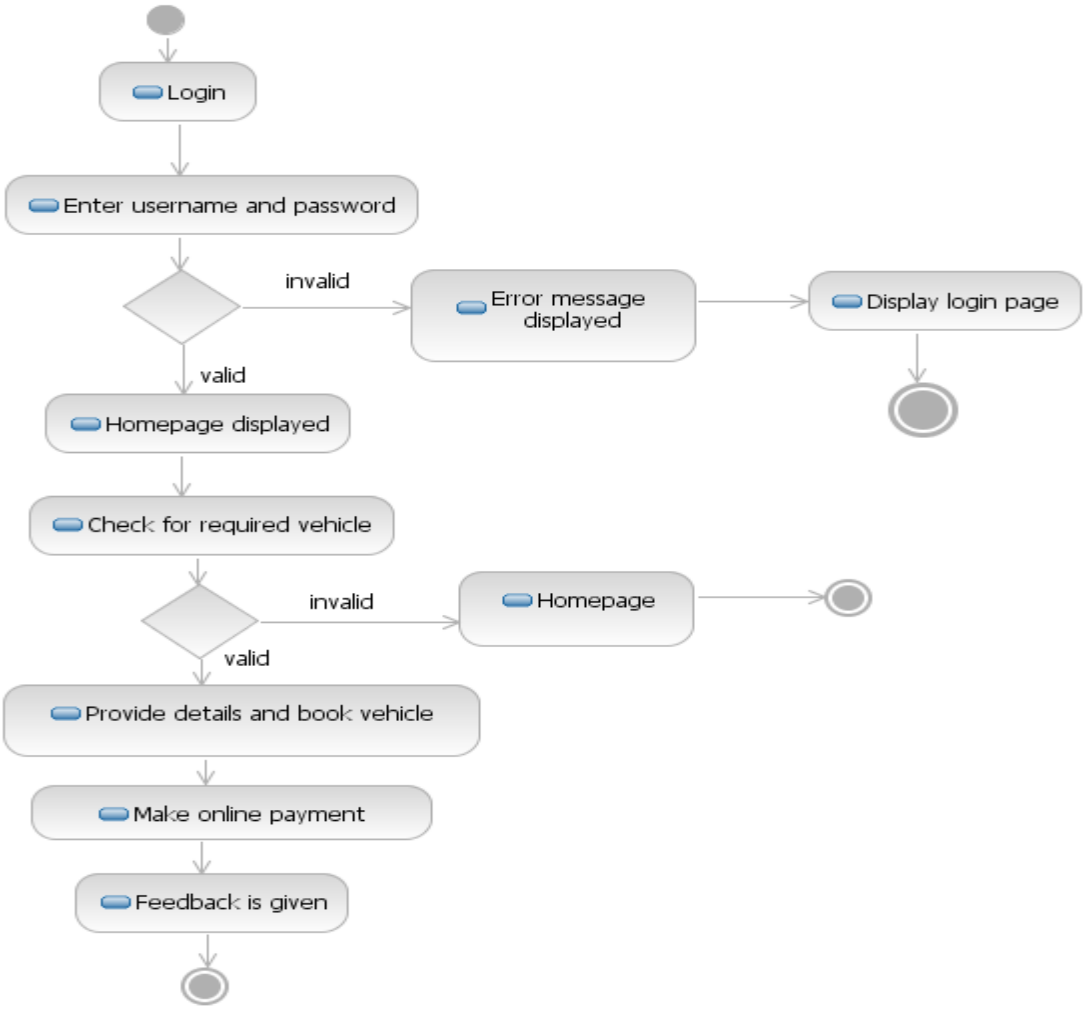

Fig 3.3.6 Feedback Activity Diagram

UC7: Checks the booking details and view driver and guide details

- Flow of Events:

The user enters the login page. User enters username and password. If the username and password is correct then display user homepage. If the username and password is incorrect then go back to login page. After giving the vehicle type, checks the required vehicle. If the required vehicle is not there, then return back to user homepage. Otherwise select and book the required vehicle.Make the online cash payment. Give the feedback. Check the booking details. View the driver and guide details

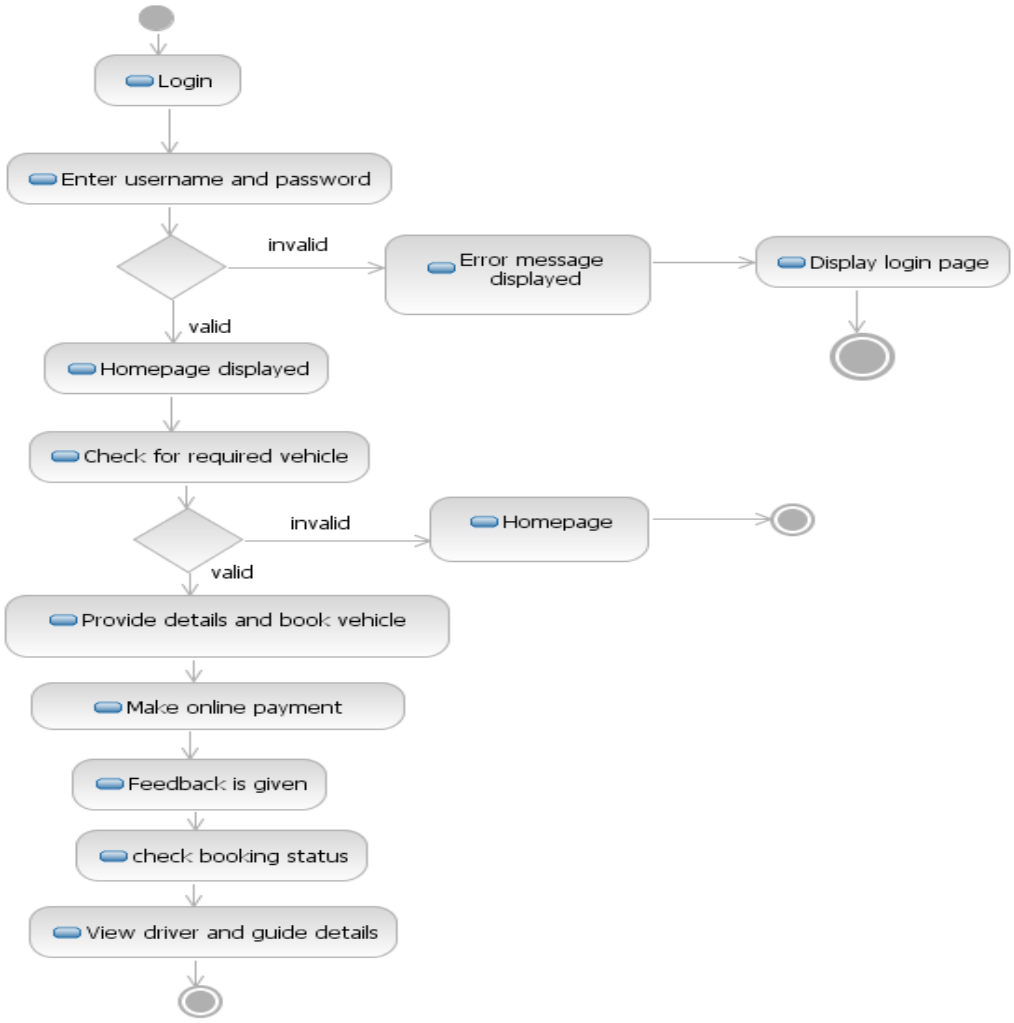

Fig 3.3.7 View driver, guide Activity Diagram

Admin use cases

UC1: Admin login

- Flow of Events:

  This use case begins when the admin enters login page.Admin enter the username and password If the username and password is correct displays admin homepage.If the username and password is incorrect then return back to login page.

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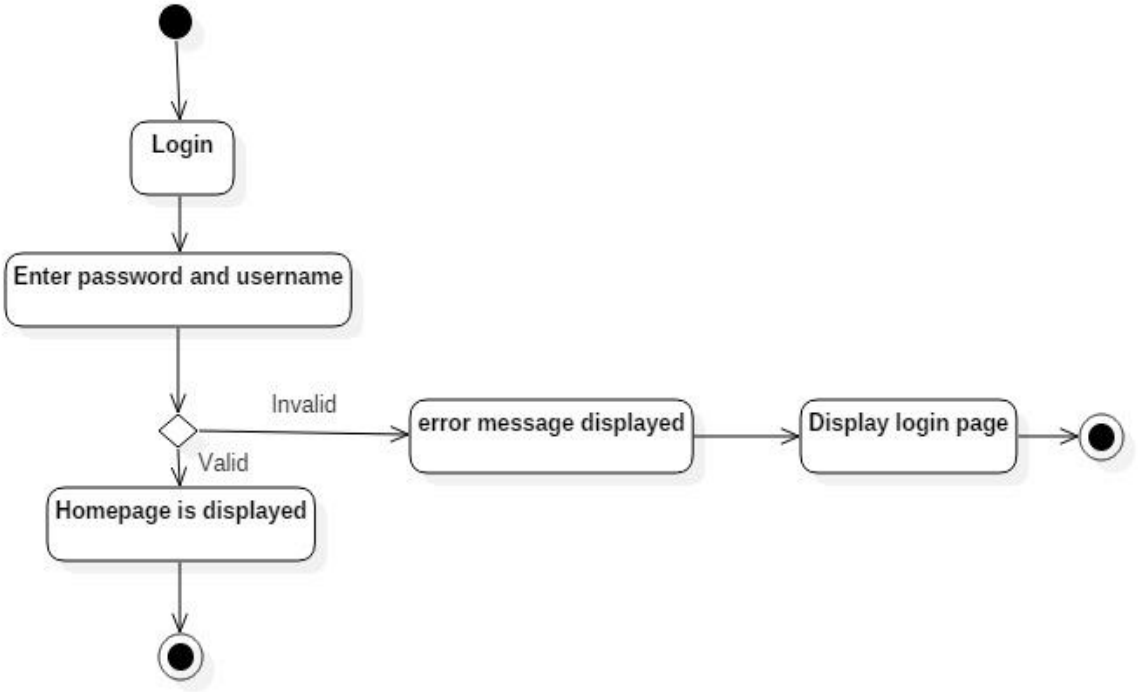

Fig 3.3.8 Admin Login Activity Diagram

UC2: Admin add, delete and view vehicles

- Flow of Events:

Admin enters login page. Admin enter the username and password. If the username and password is correct displays admin homepage.If the username and password is incorrect then return back to login page. Admin add or delete vehicles to the database.Admin view the vehicle list.

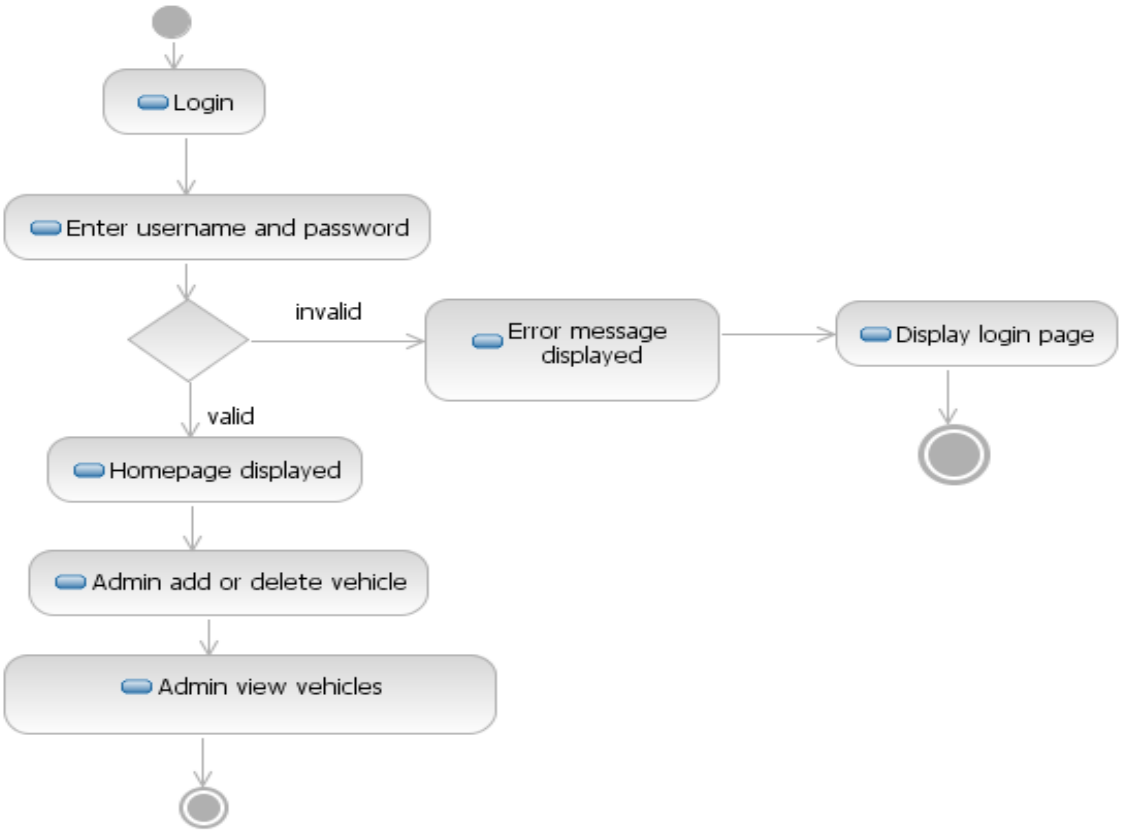

Fig 3.3.9 Admin add,delete,view vehicles Activity Diagram

UC3: Admin checks rent status and view feedback

- Flow of Events:

Admin enters login page. Admin enter the username and password.If the username and password is correct displays admin homepage. If the username and password is incorrect then return back to login page. Admin add or delete vehicles to the database. Admin view the vehicle list. Admin checks the rent status. Admin views the feedback.

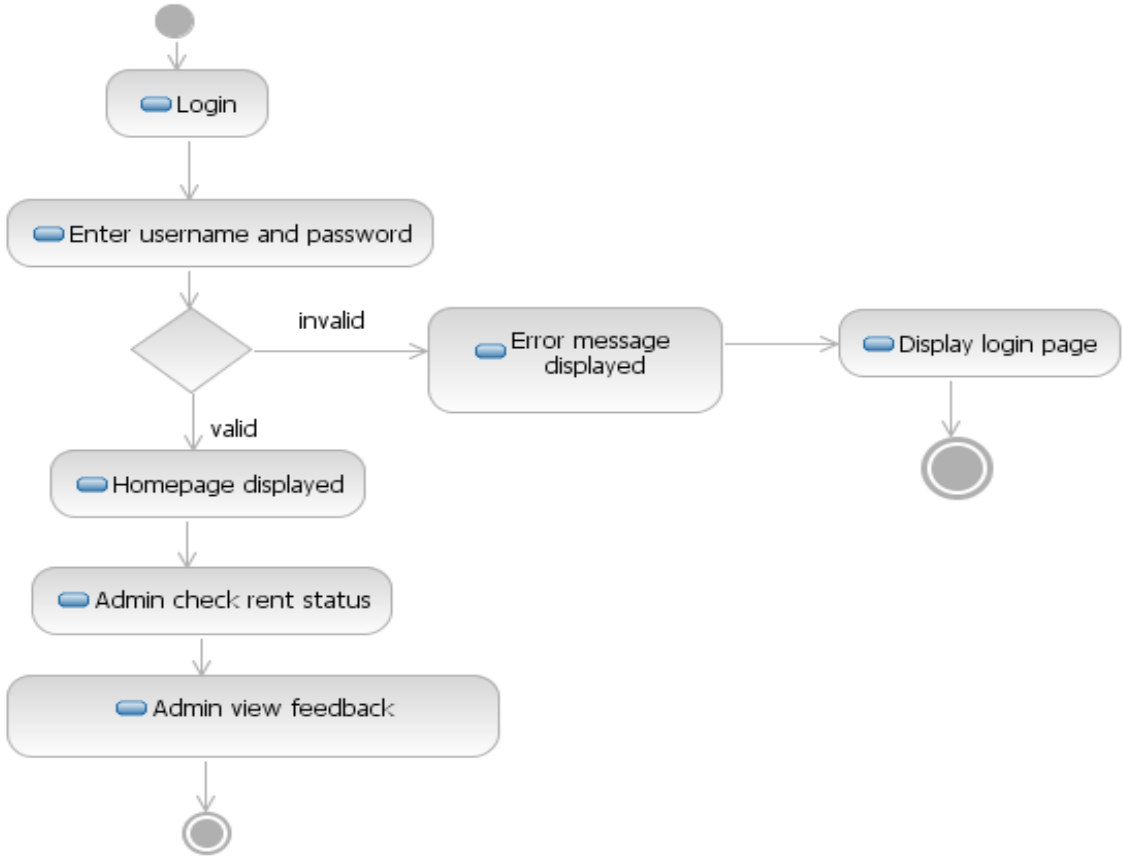

Fig 3.3.10 Admin check rent,view feedback Activity Diagram

UC4: Admin add, delete and view driver details

- Flow of Events:

Admin enters login page.Admin enter the username and password.If the username and password is correct displays admin homepage.If the username and password is incorrect then return back to login page.Admin add or delete vehicles to the database.Admin view the vehicle list.Admin checks the rent status.Admin views the feedback.Admin add, delete,view driver details

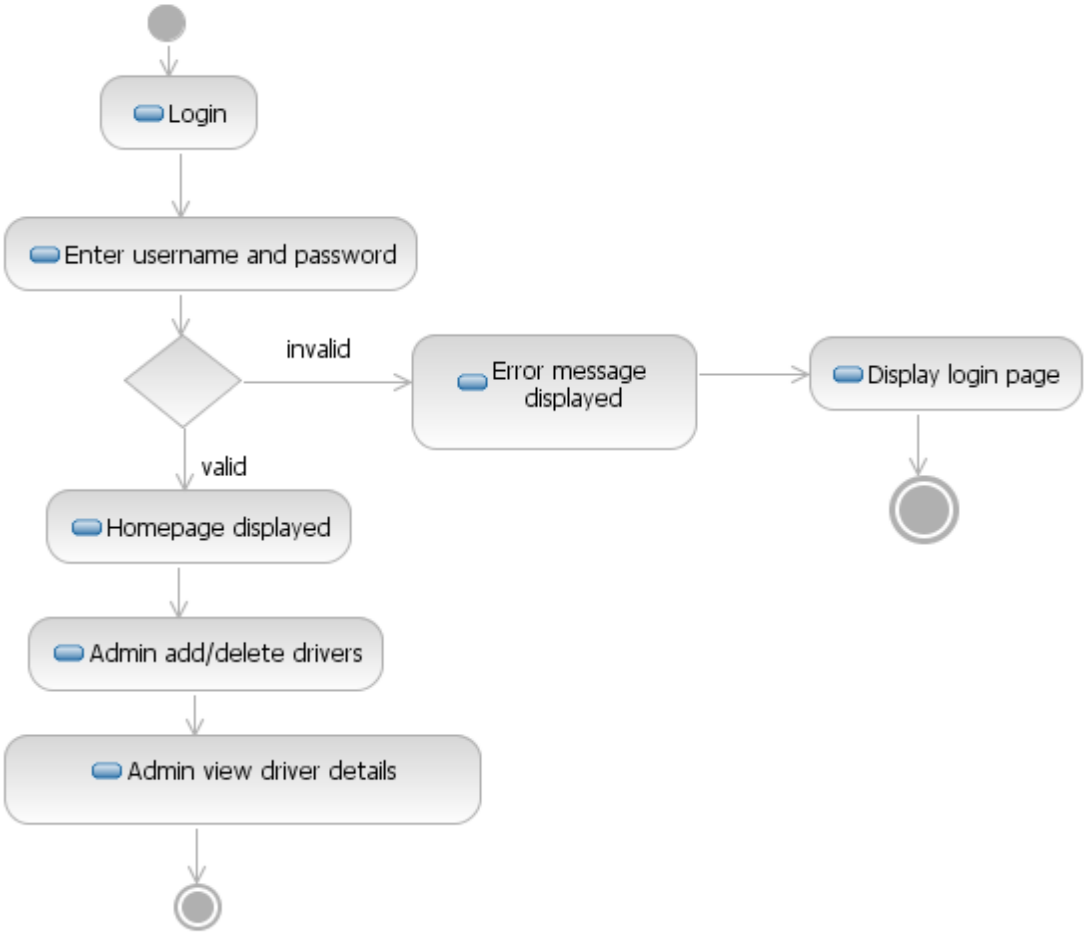

Fig 3.3.11 Admin add,delete,view driver Activity Diagram

UC5: Admin add, delete and view guide details

- Flow of Events:

Admin enters login page. Admin enter the username and password. If the username and password is correct displays admin homepage.If the username and password is incorrect then return back to login page. Admin add or delete vehicles to the database.Admin view the vehicle list. Admin checks the rent status. Admin views the feedback. Admin add, delete and view driver details. Admin add, delete and view guide details.

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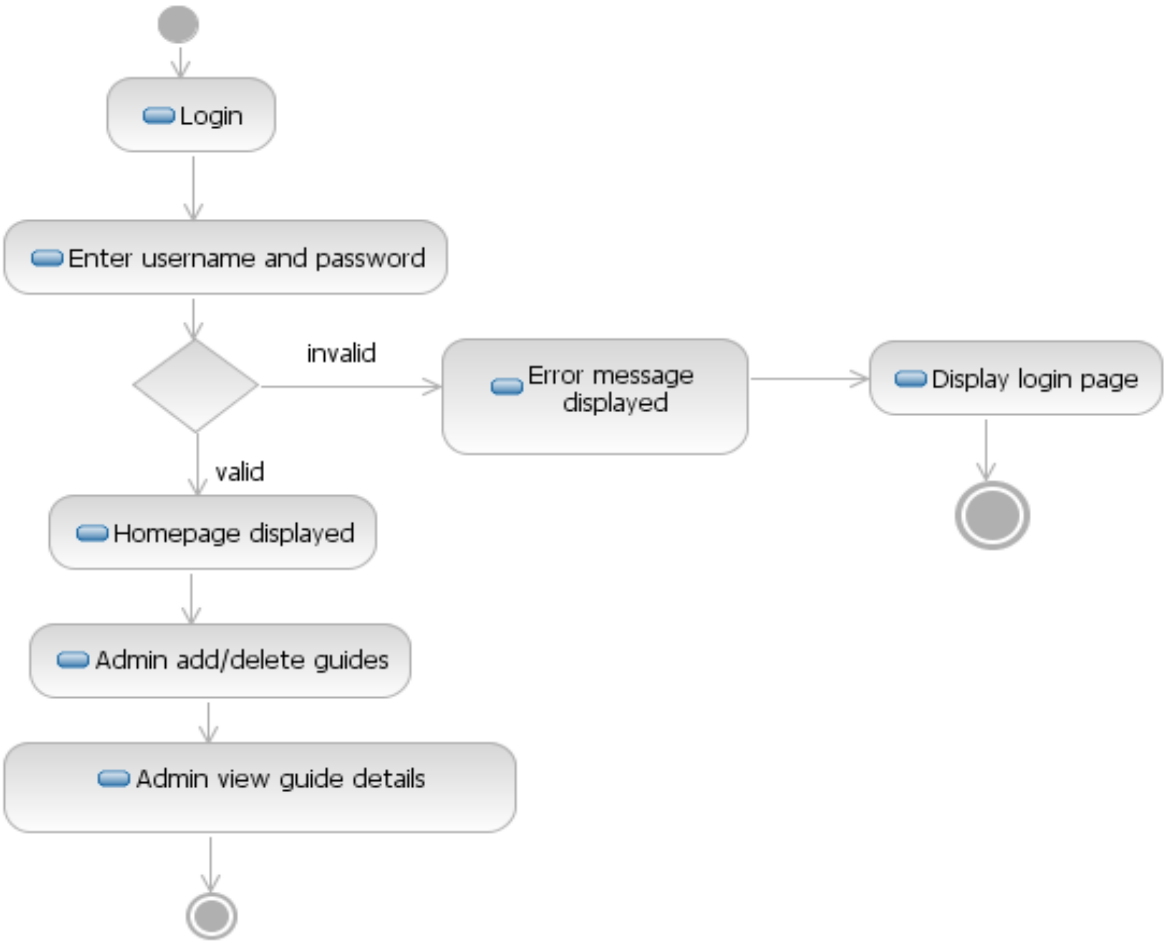


Fig 3.3.12 Admin add,delete,view guide Activity Diagram

UC6: Admin view user

- Flow of Events:

Admin enters login page. Admin enter the username and password. If the username and password is correct displays admin homepage. If the username and password is incorrect then return back to login page. Admin add or delete vehicles to the database. Admin view the vehicle list. Admin checks the rent status. Admin views the feedback. Admin add, delete and view driver details. Admin add, delete and view guide details. Admin view the user list.

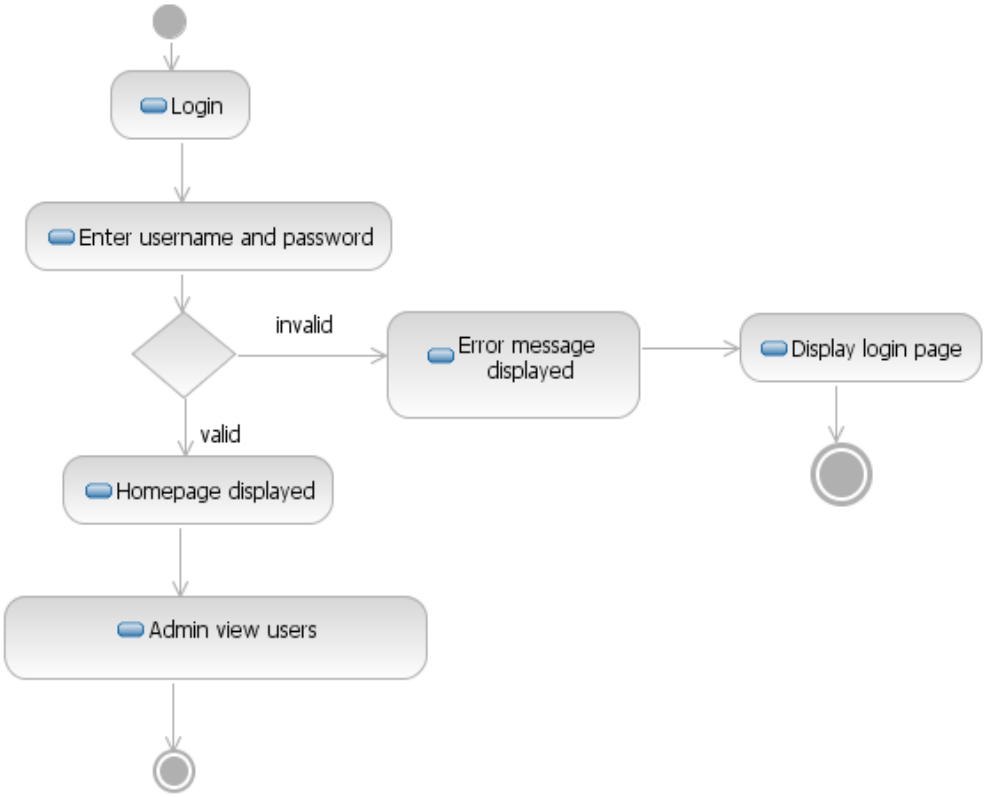


Fig 3.3.13 Admin view user Activity Diagram

3. 4 Sequence Diagram

A sequence diagram is an interaction diagram that shows how objects operate with one another and in what order. It is a construct of a message sequence chart. A sequence diagram shows object interactions arranged in time sequence. Sequence diagrams are sometimes called event diagrams or event scenarios.

A sequence diagram shows, as parallel vertical lines , different processes or objects that live simultaneously, and, as horizontal arrows, the messages exchanged between them, in the order in which they occur.

In our sequence diagram, first the user login and the corresponding details are retrieved from the database and it is verified by the admin. A new user can register his details and it is stored in the database. Once the user enters the homepage he can search the required vehicle or vehicles .The corresponding vehicle details are retrieved from the database by the admin. The user can book the required vehicle and make the payment online. Once the booking process is confirmed the corresponding details are stored in the database. The admin can retrieve the data from the database when required. The user can give feedback which is stored in the database and this can be viewed by the admin later on. Once the user is finished, he can logout.

When the admin login, the login details are verified with those in the database and an acknowledgement is sent back to the admin. Once the admin enters the homepage he can add/delete vehicles, drivers, guides and details are updated in the database and an acknowledgement is sent back to the admin. The admin can also view users, drivers, guides by retrieving from the database. Once the admin is finished, he can also logout.

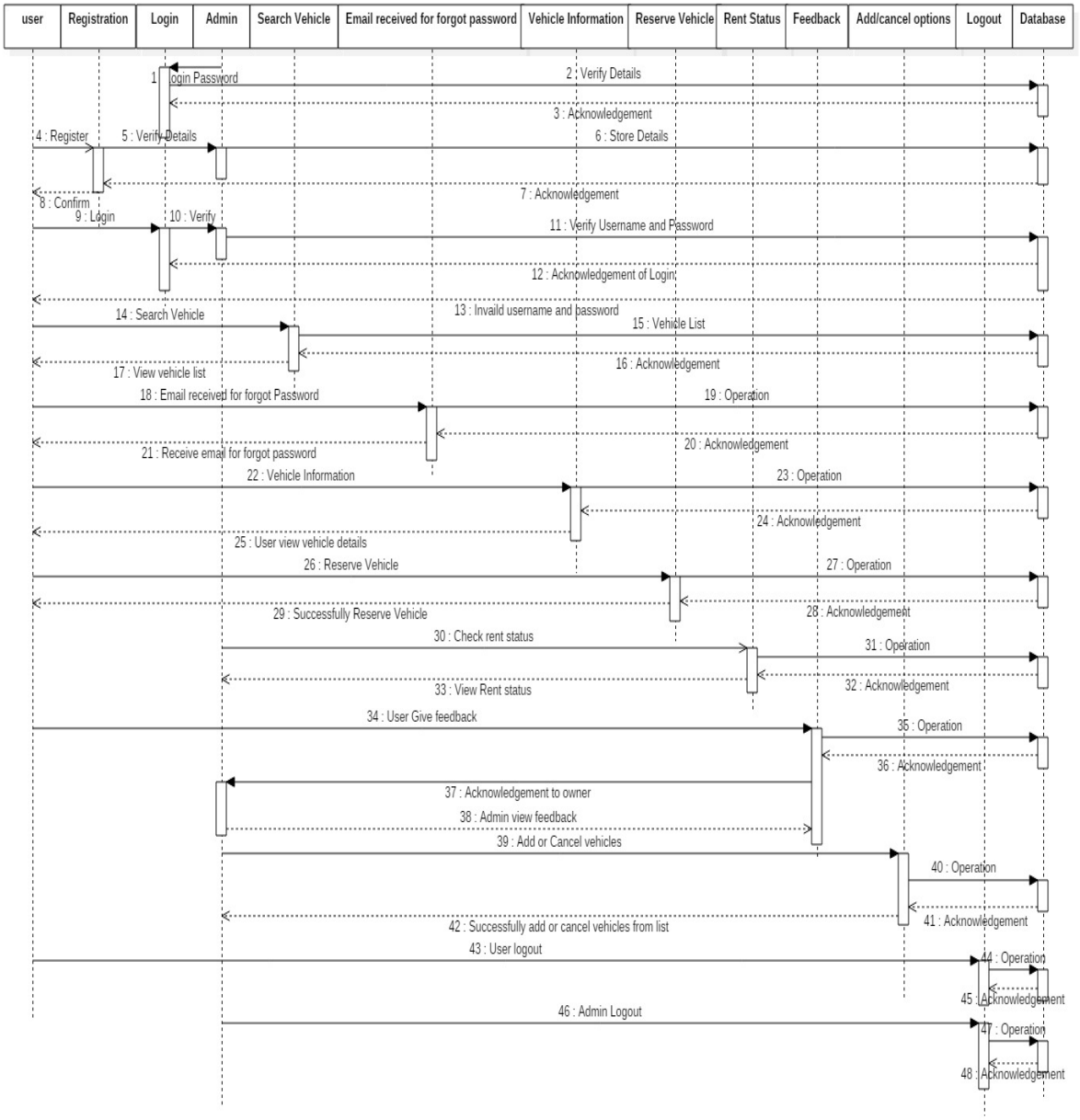


Fig 3.4 Sequence Diagram

3. 5 Layouts

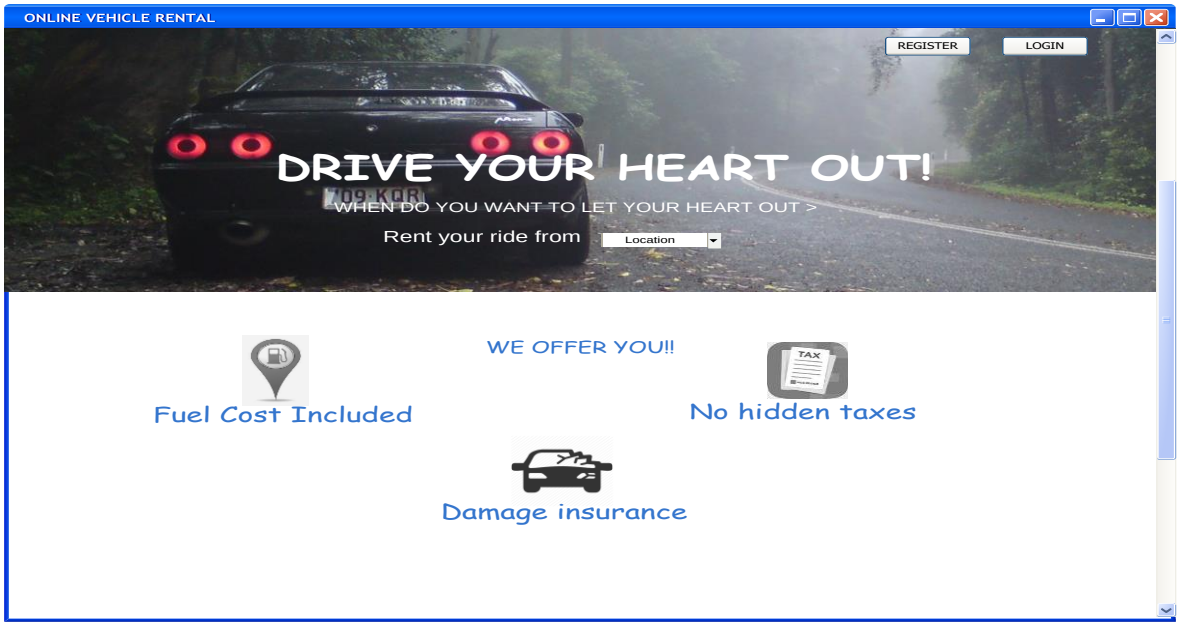


Fig 3.5.1 Homepage

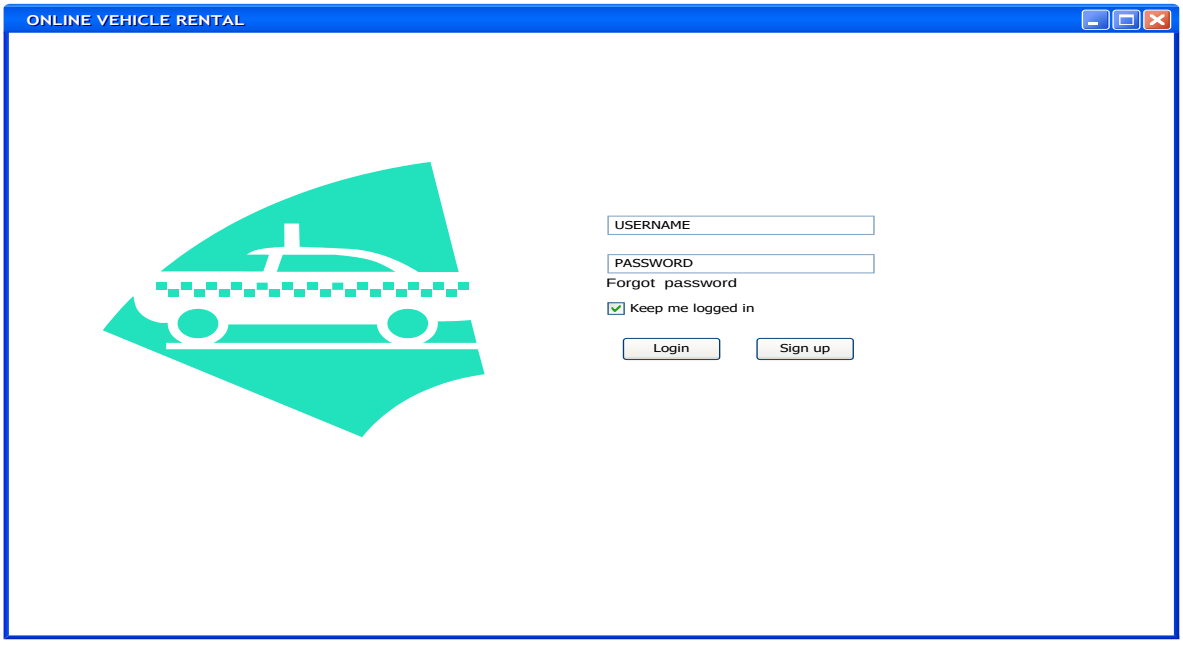


Fig 3.5.2 Login page

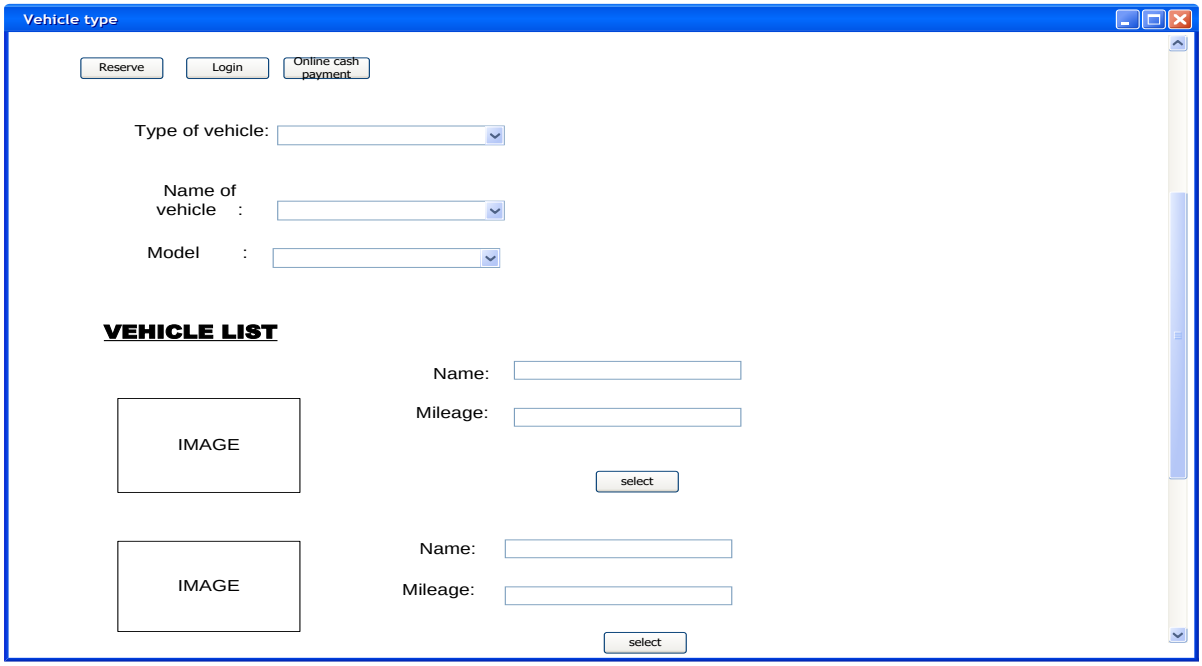


Fig 3.5.3 Checks required vehicle page

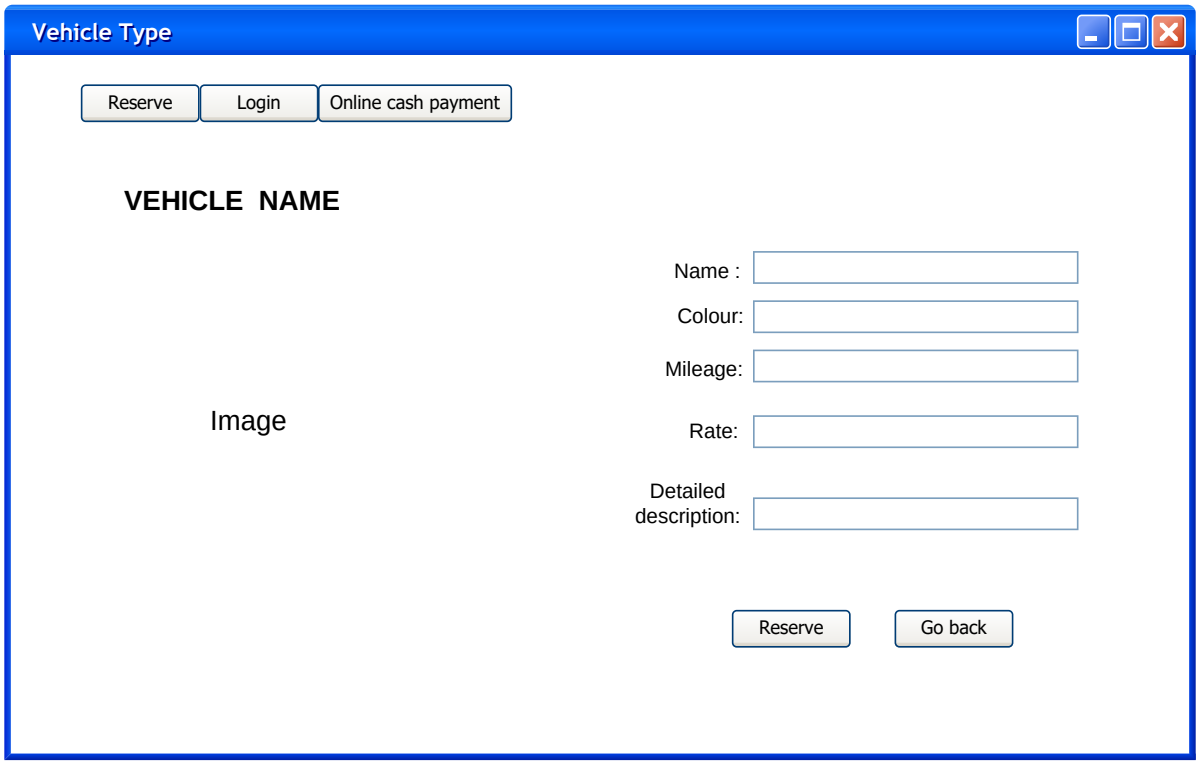


Fig 3.5.4 View vehicle Details page

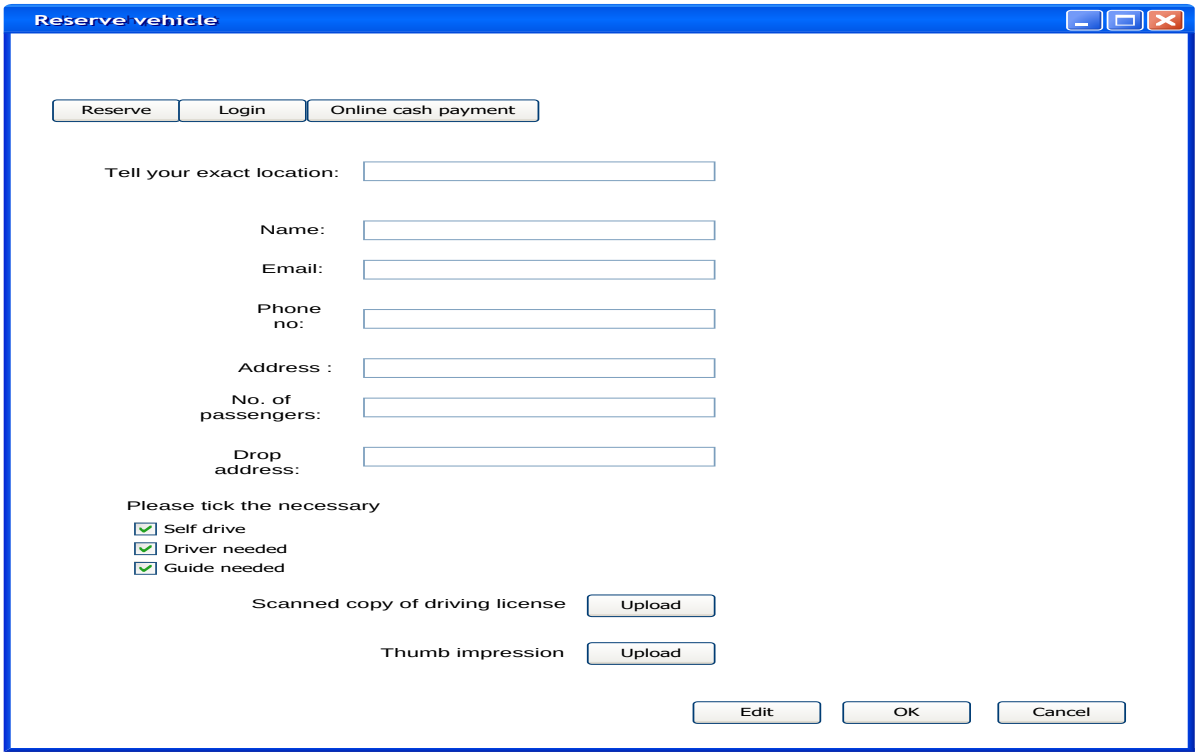


Fig 3.5.5 Vehicle Booking page

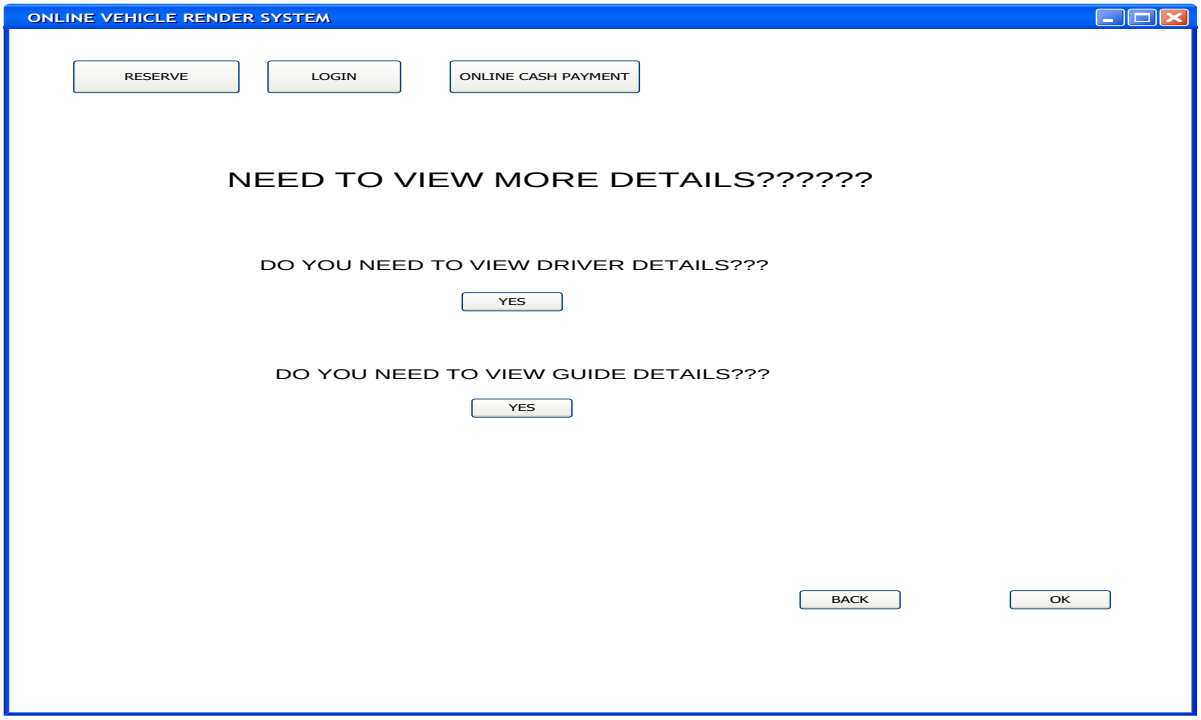


Fig 3.5.6 View additional details page

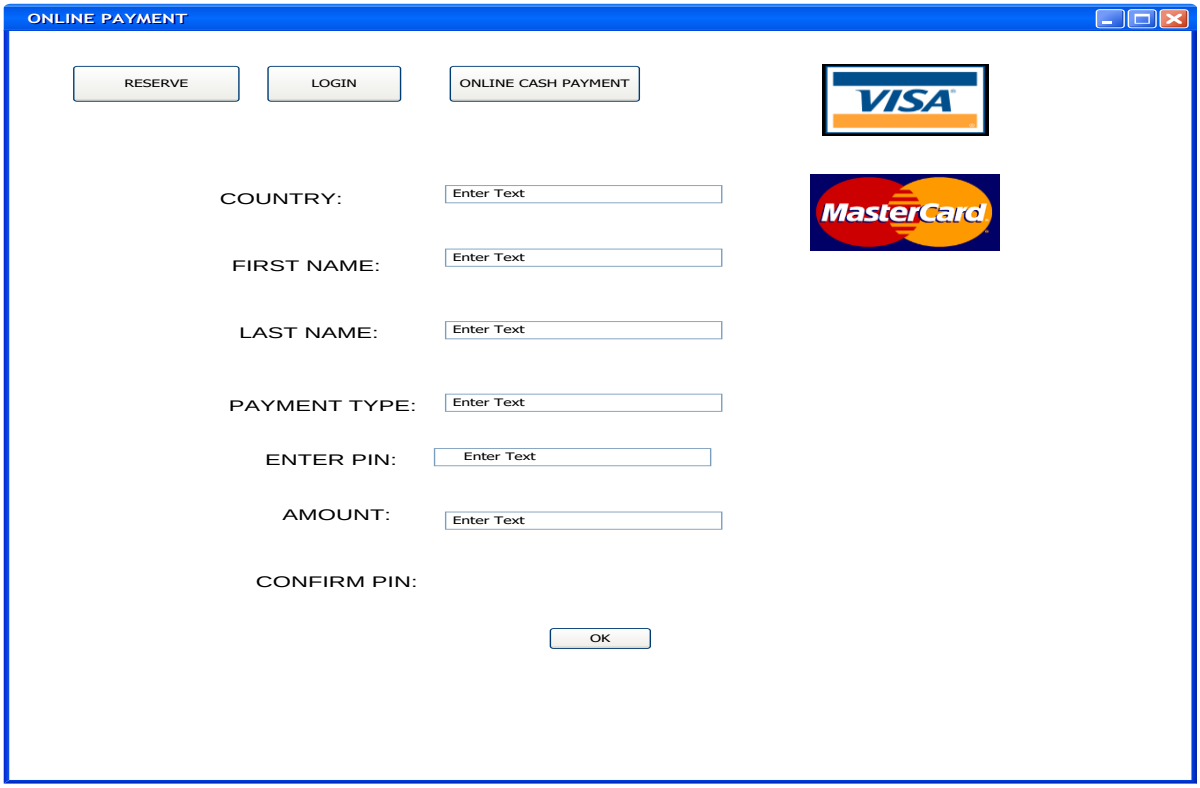


Fig 3.5.7 Online Payment page

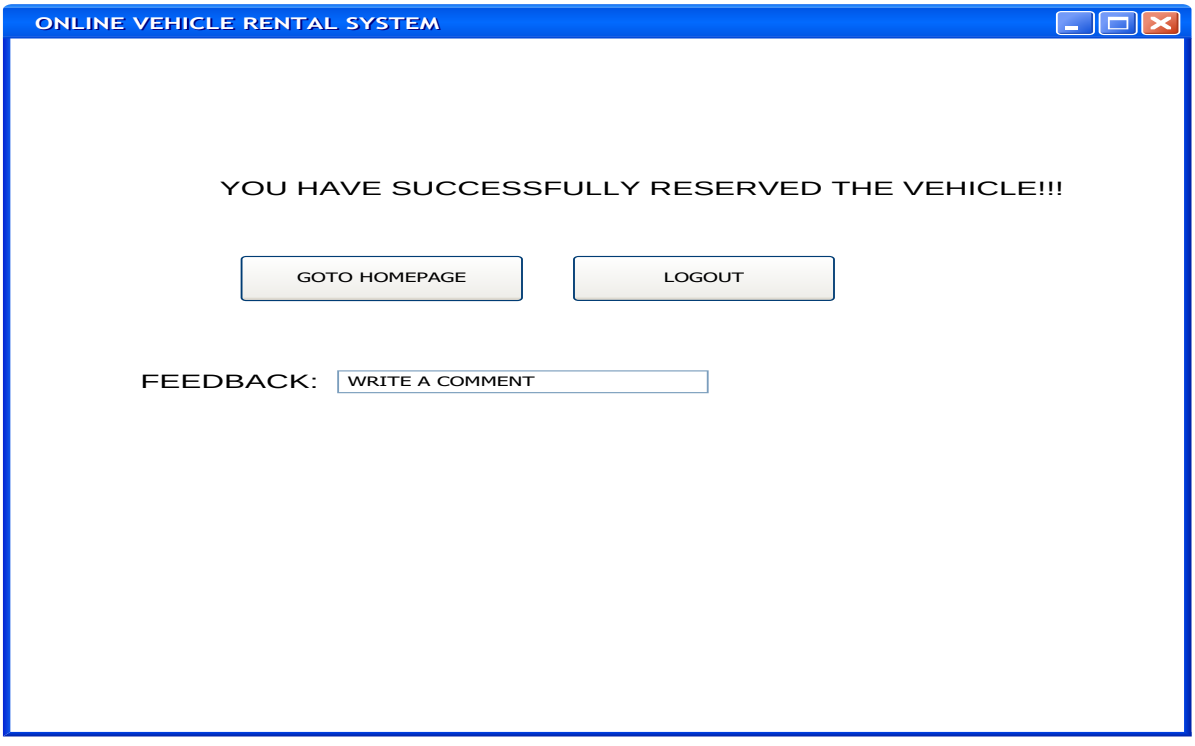


Fig 3.5.8 Feedback page

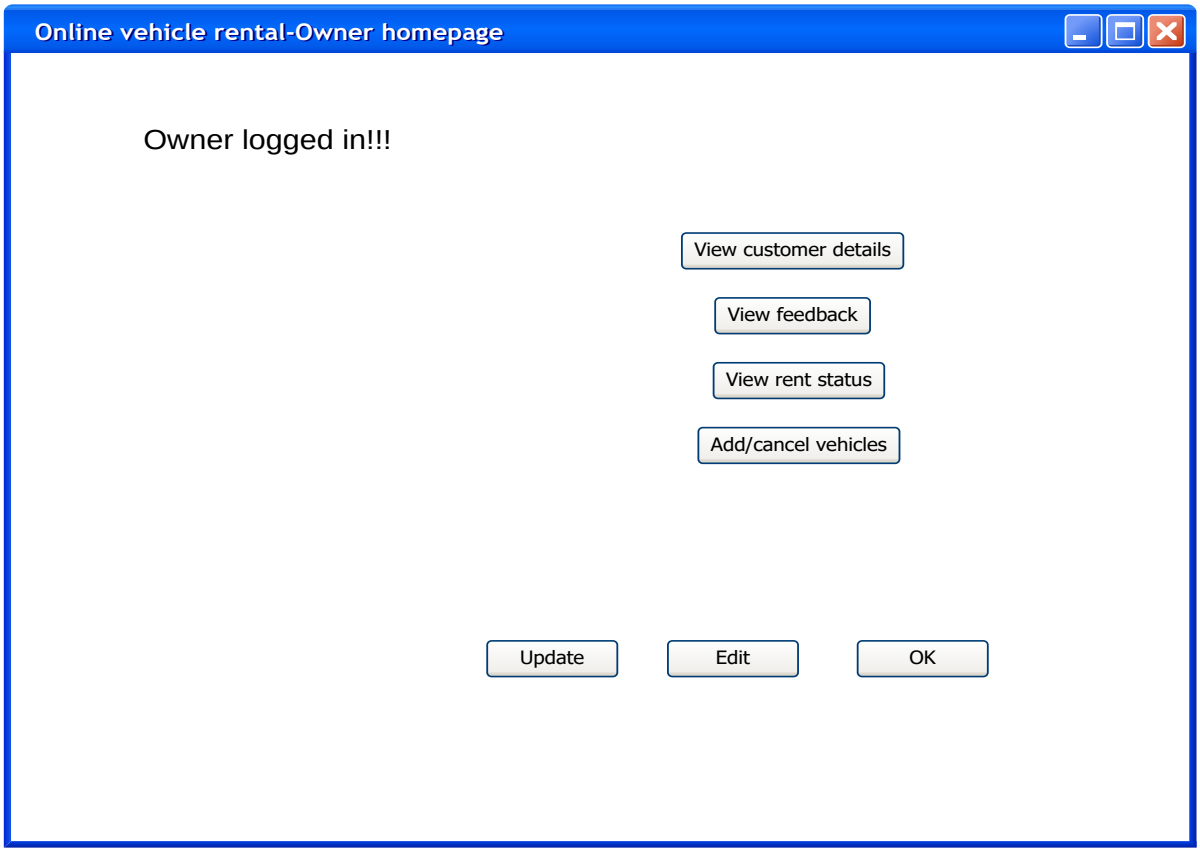


Fig 3.5.9 Admin homepage

CHAPTER 4

SOFTWARE AND HARDWARE REQUIREMENTS

Computer instructions, data or anything that can be stored electronically is software. The storage devices and display devices are hardware. The distinction between software and hardware is sometimes confusing because they are so integrally linked. Clearly, when you purchase a program, you are buying software. But to buy the software, you need to buy the disk (hardware) on which the software is recorded.

Net Beans IDE :

The Net Beans IDE is modular, standards-based open-source integrated development environment.Net Beans IDE supports development of all Java application type.

Features:

1. Modularity:

All the functions of the IDE are provided by modules. Each module provides a well-defined function

2. Support for other programming languages.
3. User interface Development.
4. Easy & Efficient Project Management
5. Storage management

User Interface (HTML) :

Hypertext Mark up Language (HTML) is the standard mark up language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript it forms a triad of cornerstone technologies for the World Wide Web. Inclusion of CSS defines the look and layout of content. The HTML language is based on an existing, international formatting standard SGML, Standard Generalized Mark-Up Language, which is used for text processing.

Mid end (JSP) :

Java Server Pages (JSP) is a technology that helps software developers create dynamically generated web pages based on HTML, XML, or other document types.JSP technology creates web application just like Servlet technology. A JSP page consists of HTML tags and JSP tags. The JSP pages are easier to maintain than servlet because we can separate designing and development. JSP is similar to PHP and ASP, but it uses the Java programming language.

Features:

- Extension to Servlet.
- Powerful.
- Portable.
- Flexible.
- Easy.

To deploy and run Java Server Pages, a compatible web server with a servlet container, such as Apache Tomcat or Glass Fish Server, is required.It controlls the content or appearance of Web pages through the use of servlets.

Back end (SQL Database) :

SQL stands for Structured Query Language. SQL is used to communicate with a database.SQL statements are used to perform tasks such as update data on a database, or retrieve data from a database.In our project we use Wamp server for implementing SQL database. WampServer is a Web development platform on Windows that allows you to create dynamic Web applications with Apache2, PHP, and MySQL. It also comes with PHPMyAdmin to easily manage your databases.

4.1 HARDWARE SPECIFICATION

- **Processor** : Dual core processor with IDE, Netbeans,wamp and JSP.
- **System Bus** : 64 bit
- **RAM** : 512MB
- **HDD** : 40GB

4.2 SOFTWARE SPECIFICATION

- **User Interface** : HTML
- **Mid end** : JSP
- **Back end** : SQL Database
- **OS** : NetBeans IDE 8.1

CHAPTER5

RESULT

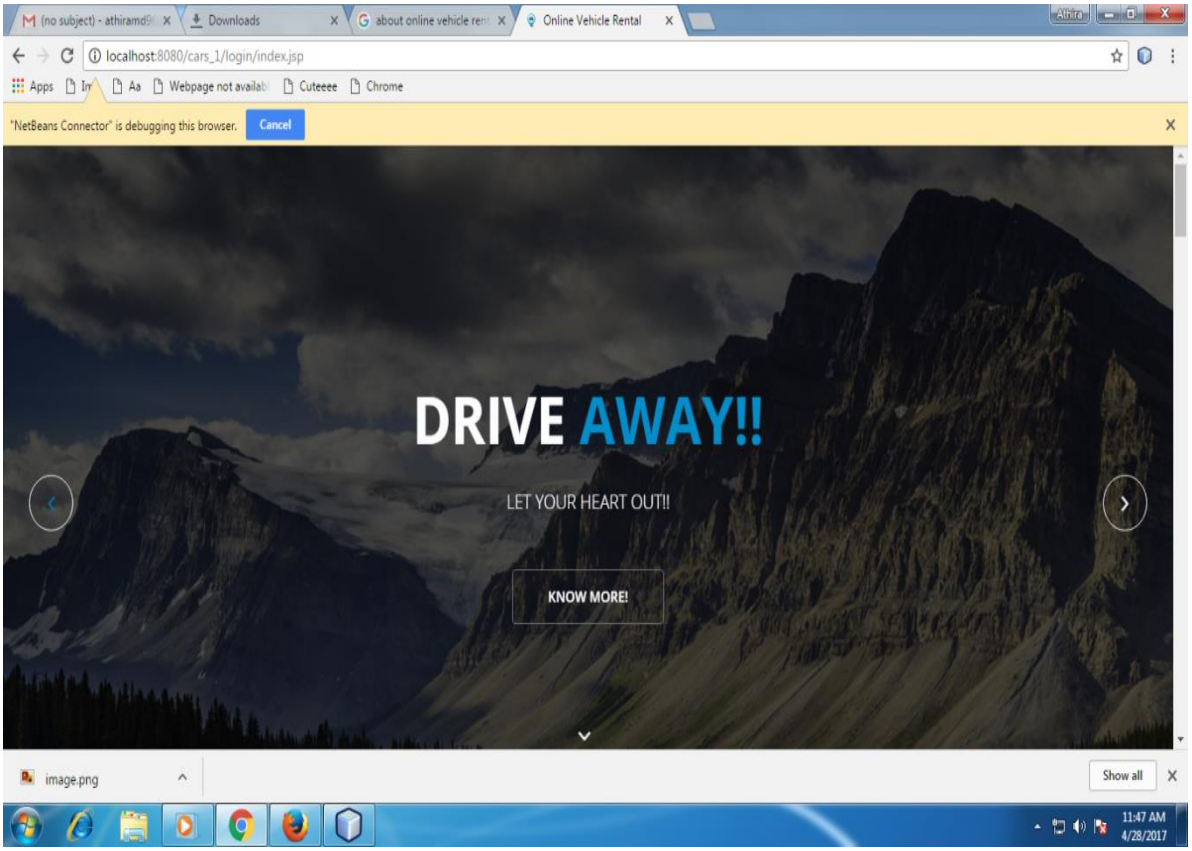


Fig 4.1Main Homepage

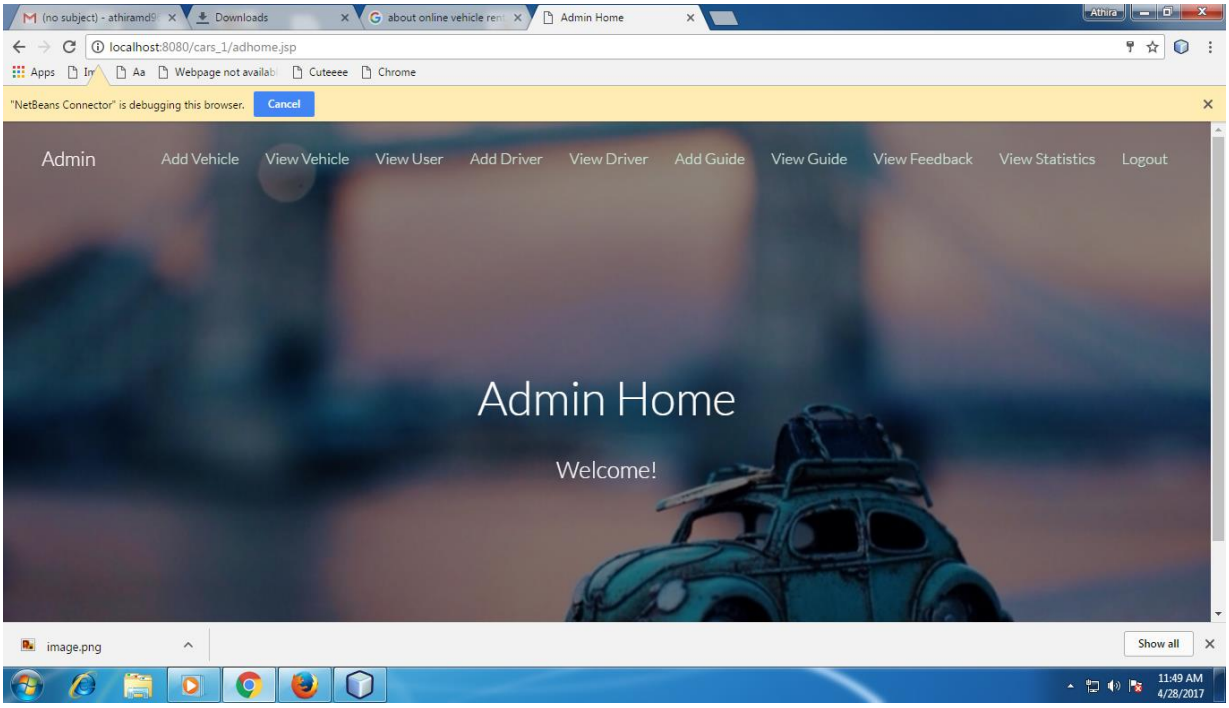


Fig 4.2Admin Homepage

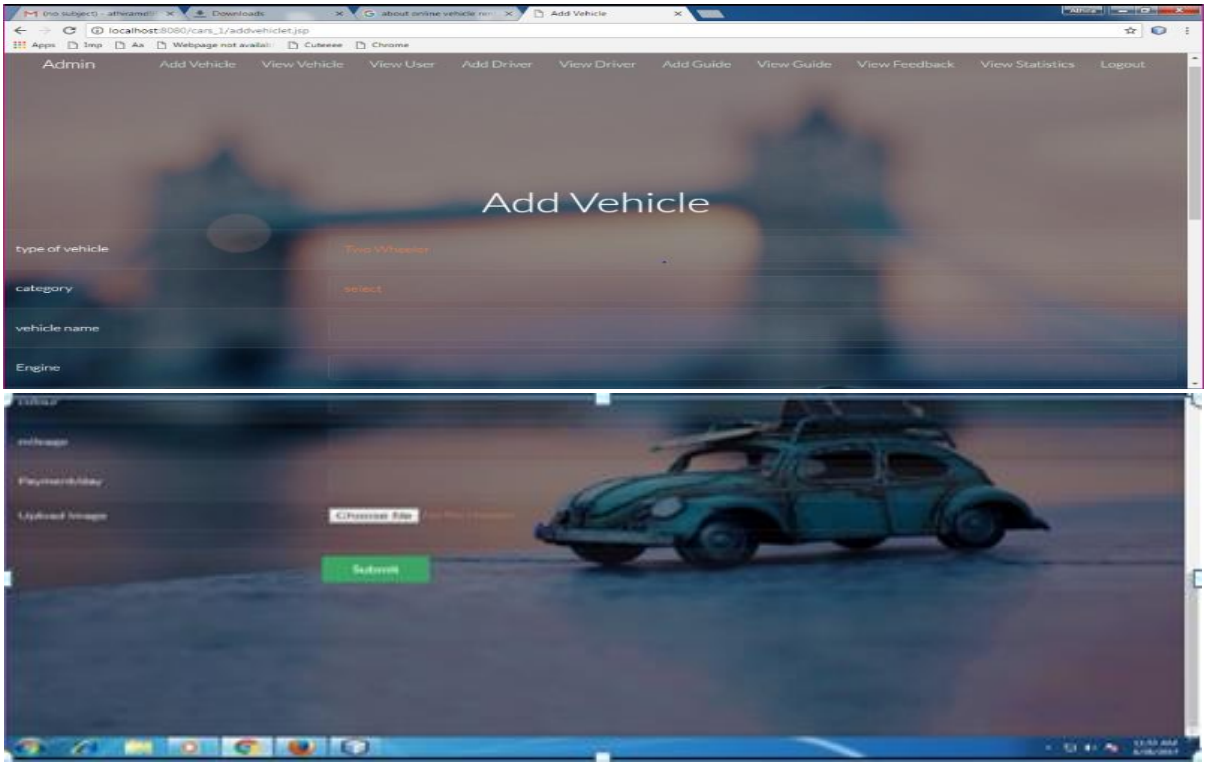


Fig 4.3 Admin Add vehicle page

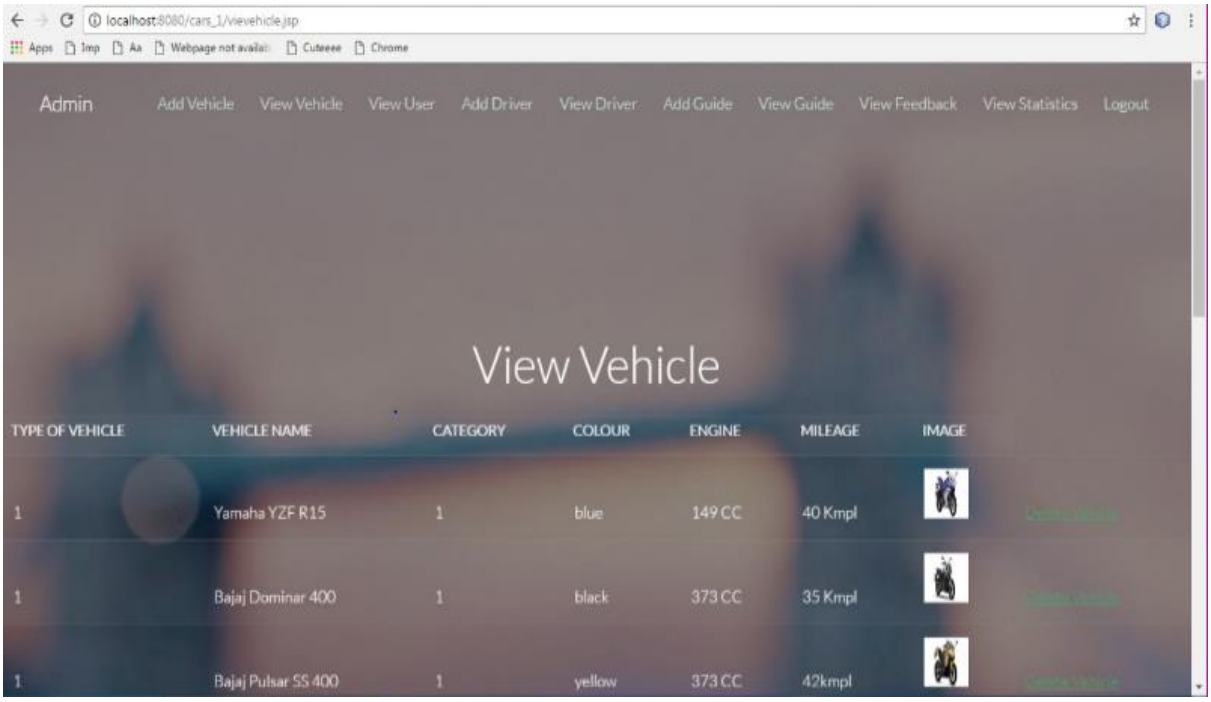


Fig 4.4 Admin view vehicle page

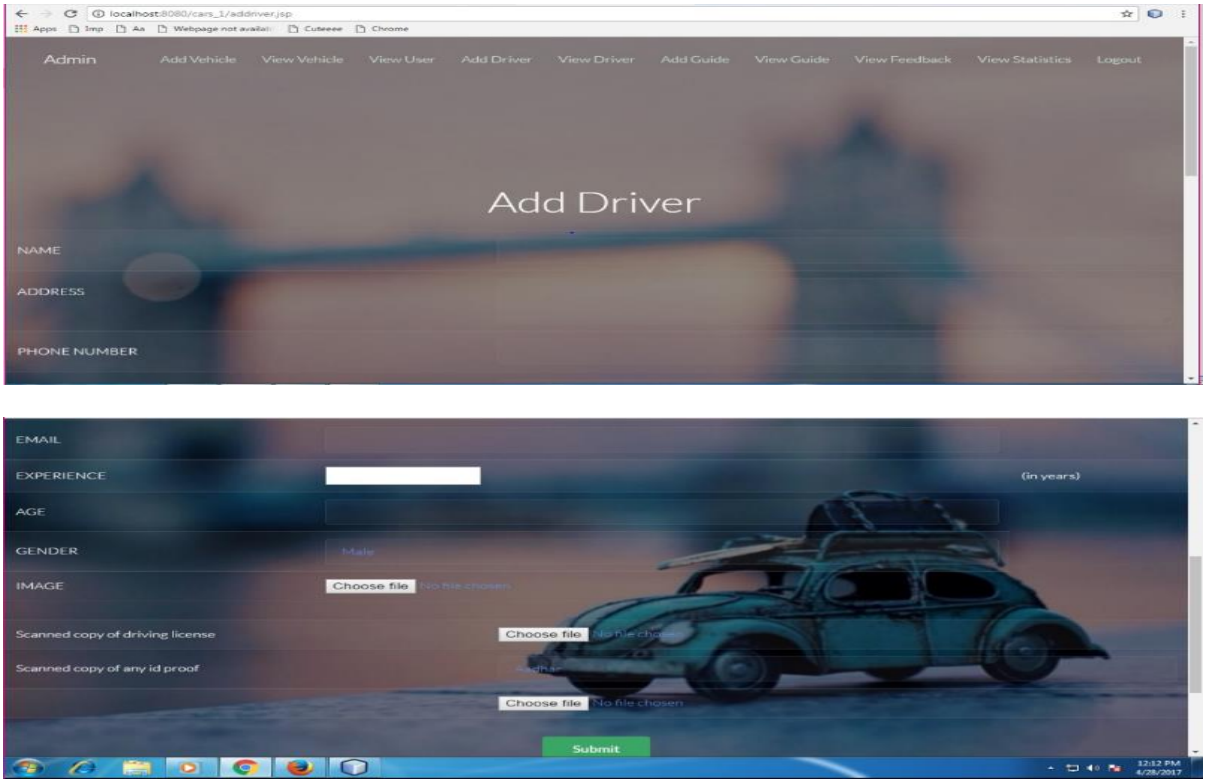


Fig 4.5 Admin add driver page

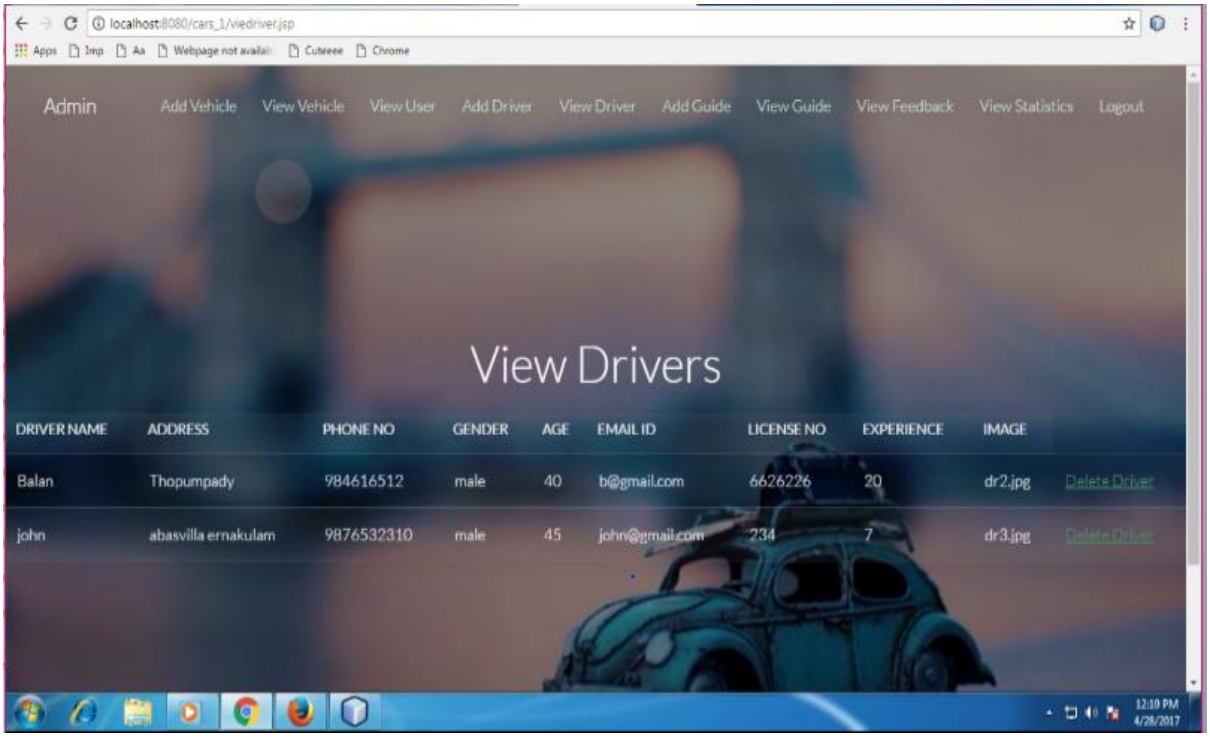


Fig 4.6 Admin view driver page

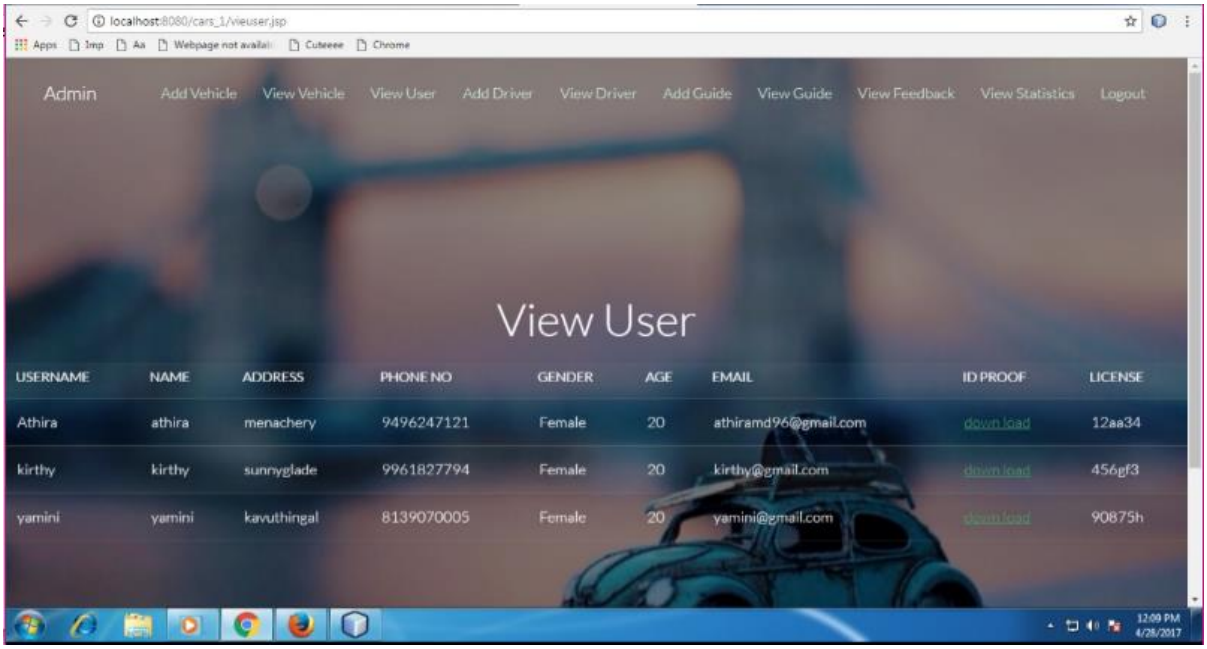
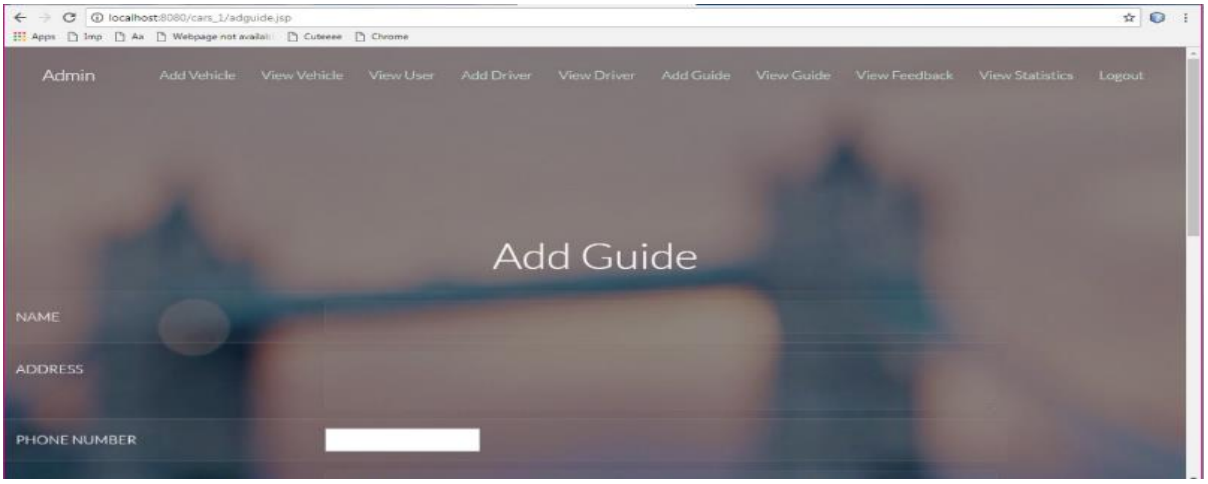


Fig 4.7 Admin view userlist page



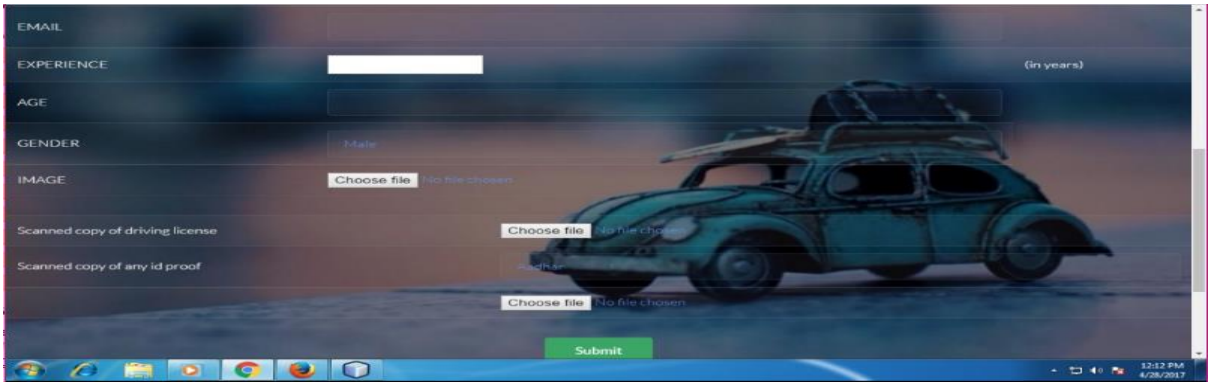


Fig 4.8 Admin add guide page

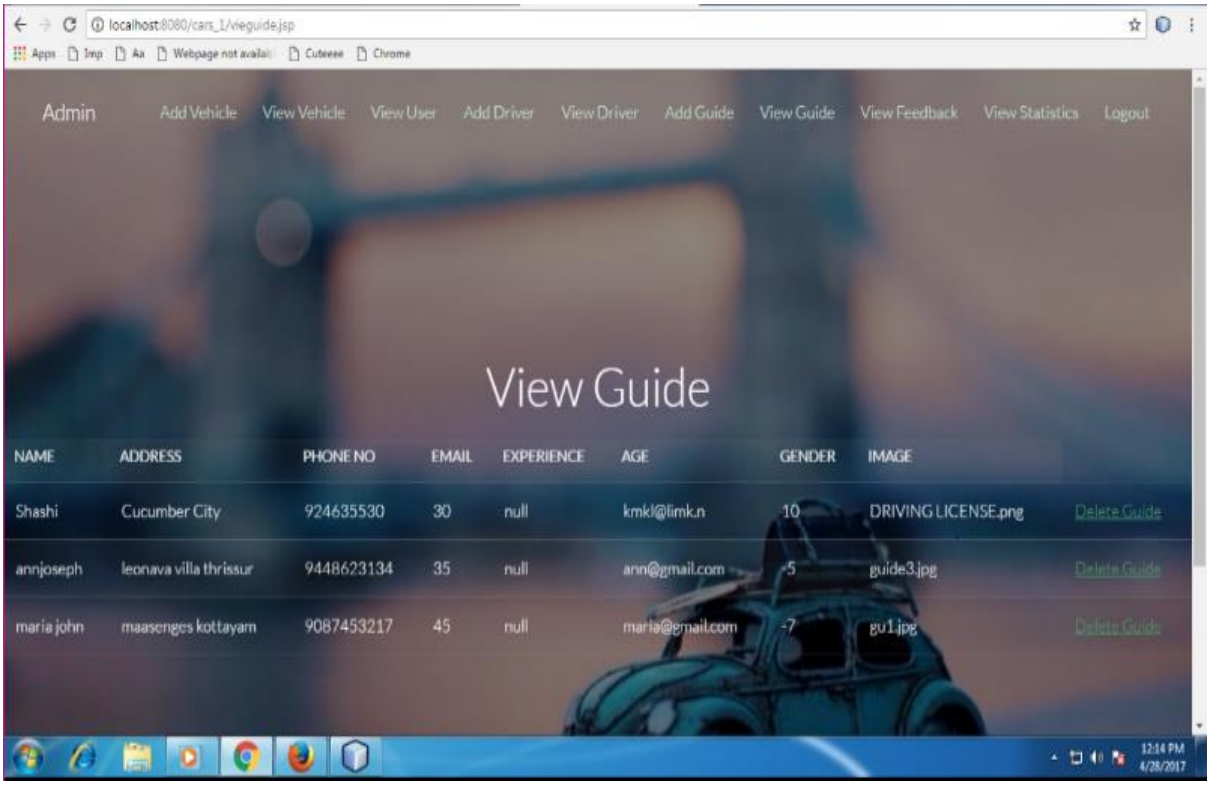


Fig 4.9 Admin view guide page

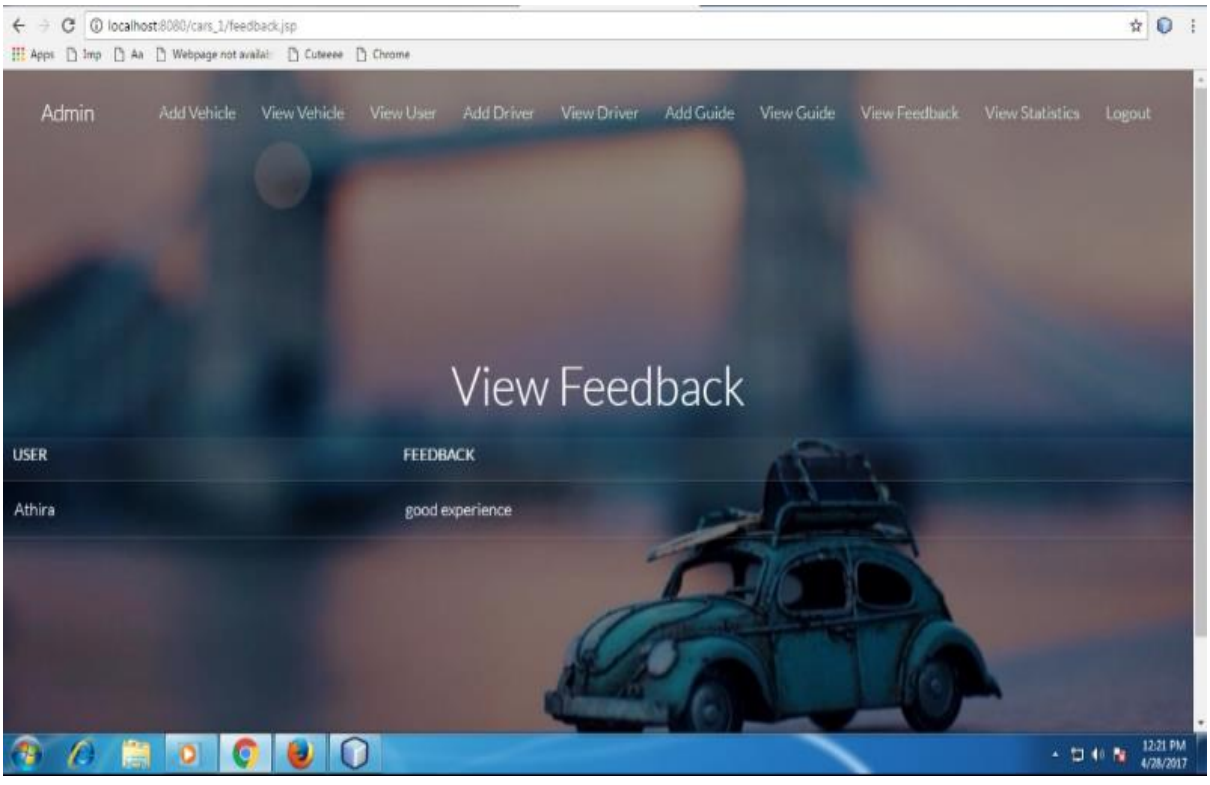


Fig 4.10 Admin view feedback page

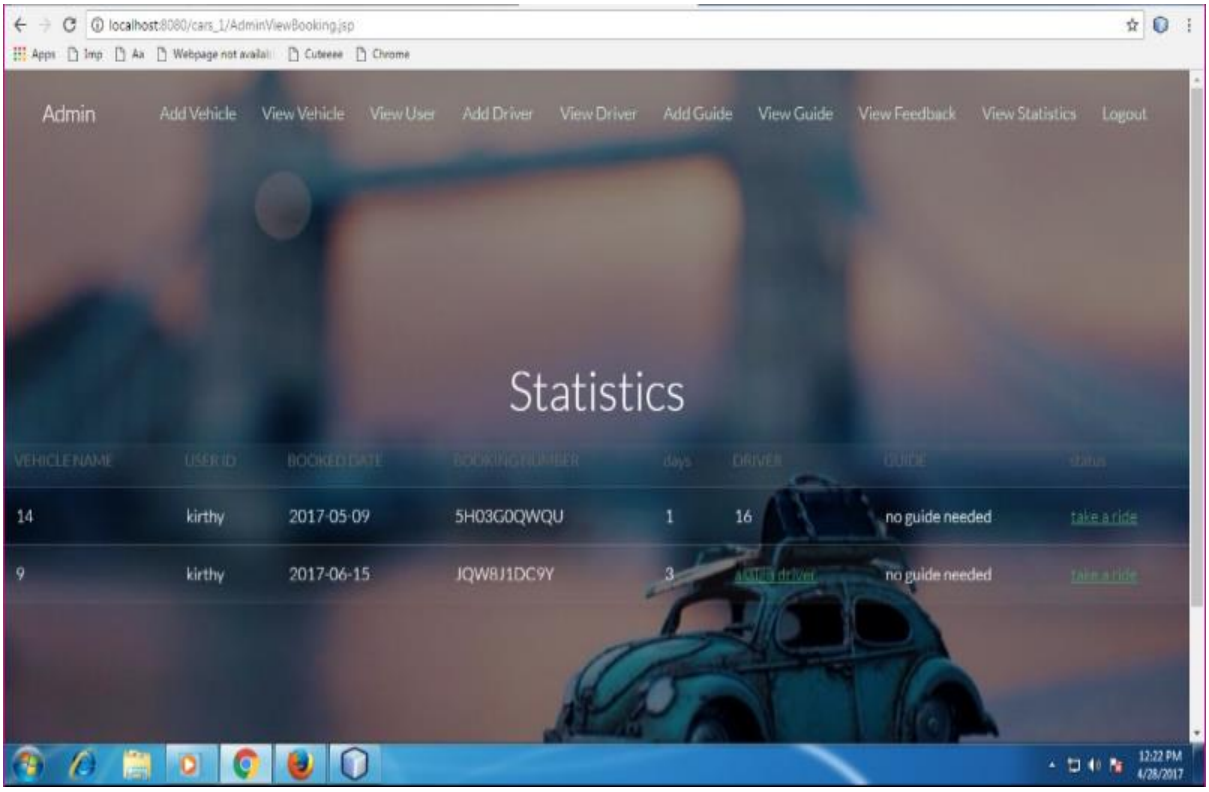


Fig 4.11 Admin view statistics page

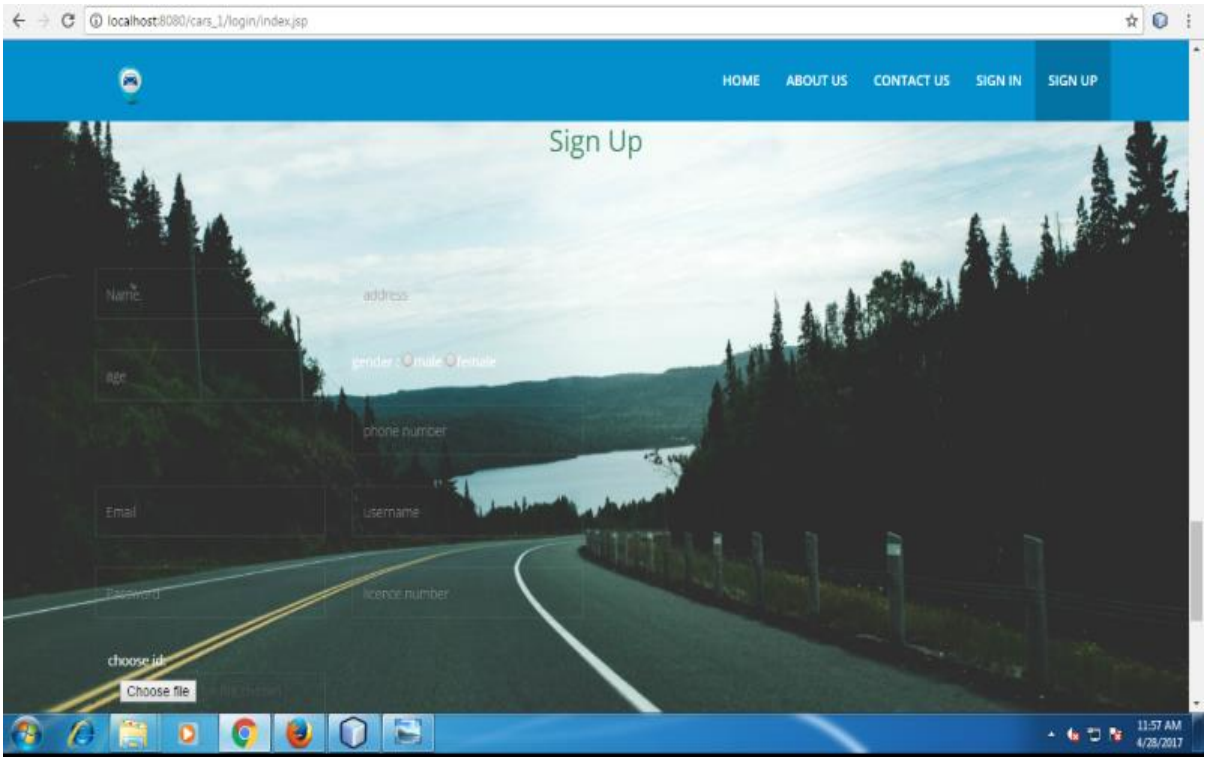


Fig 4.12 User signup page

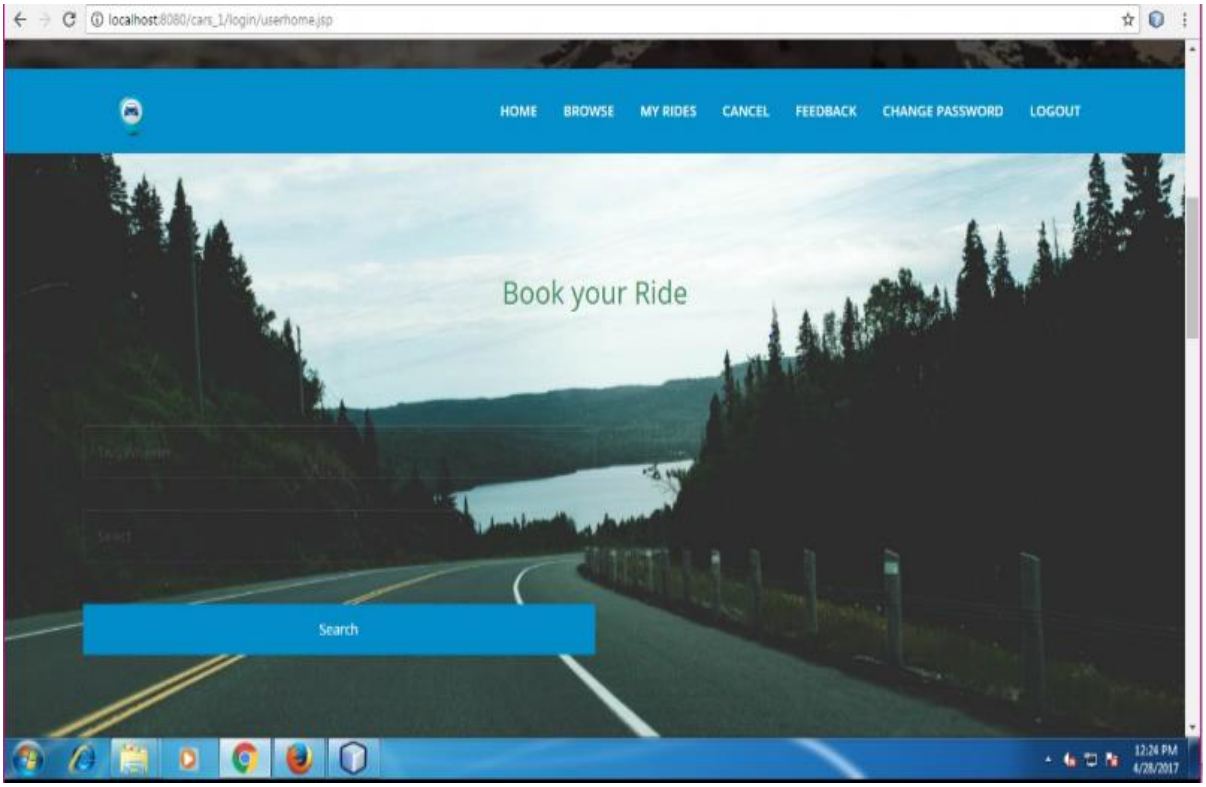


Fig 4.13 User selects vehicle type page

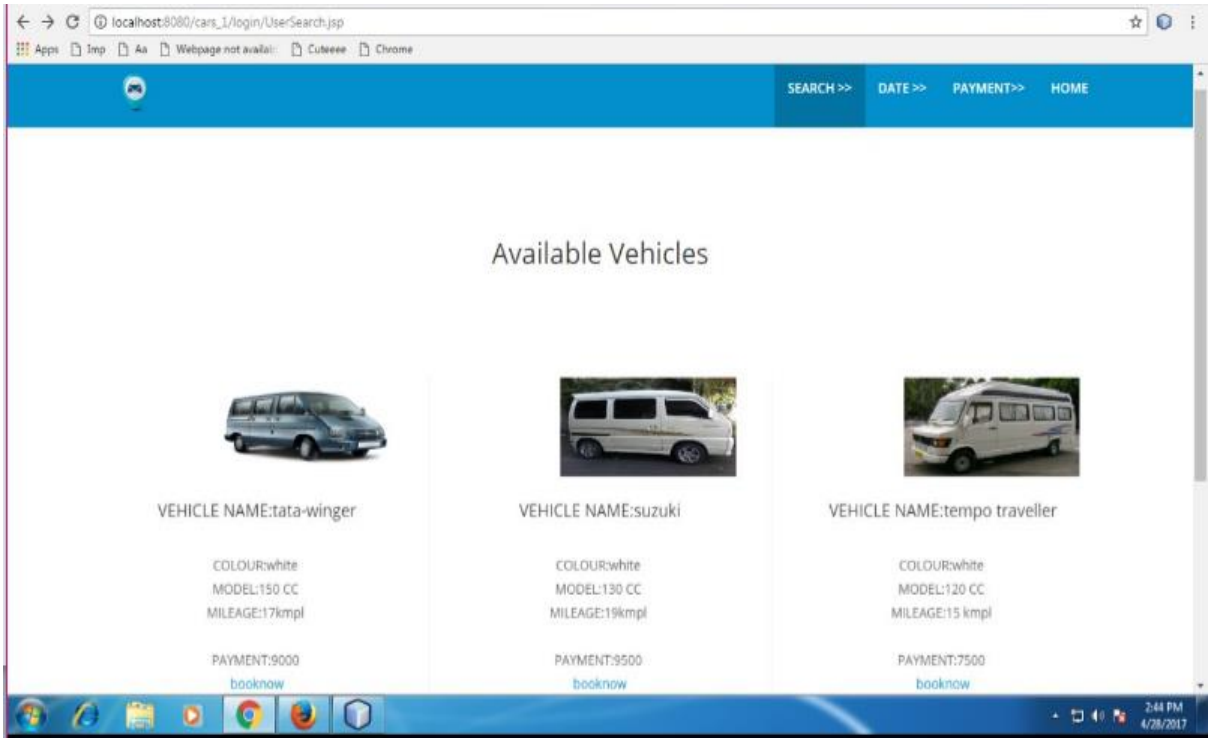


Fig 4.14 Vehicle list page

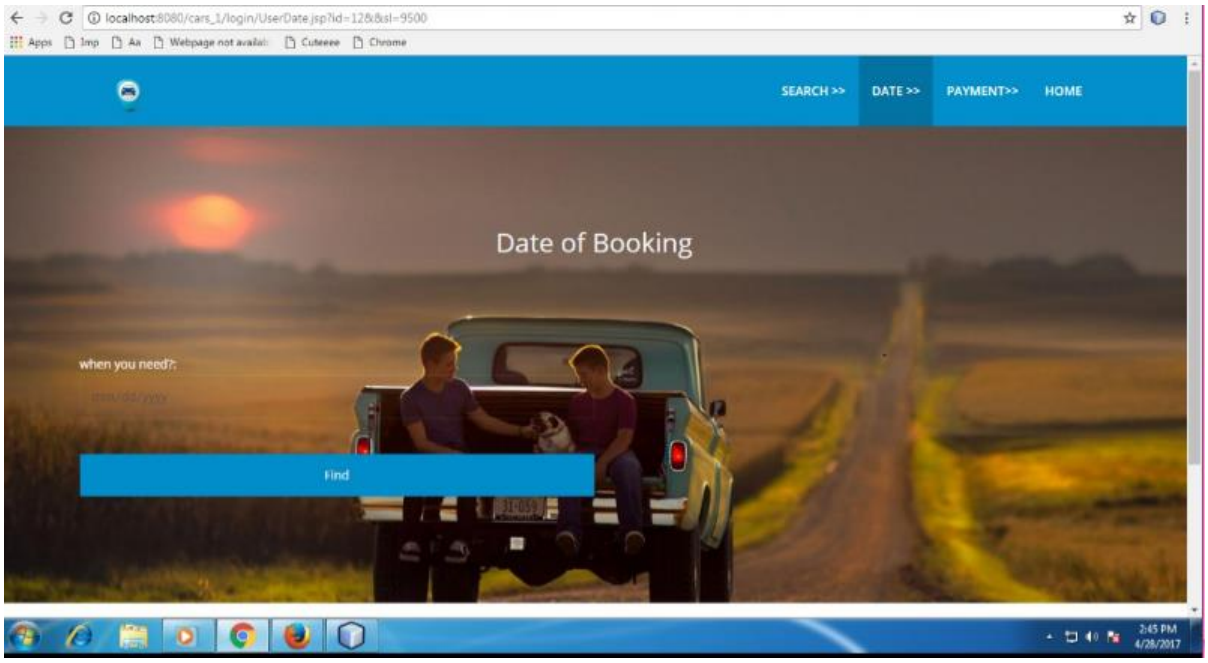


Fig 4.15 Date of Booking page

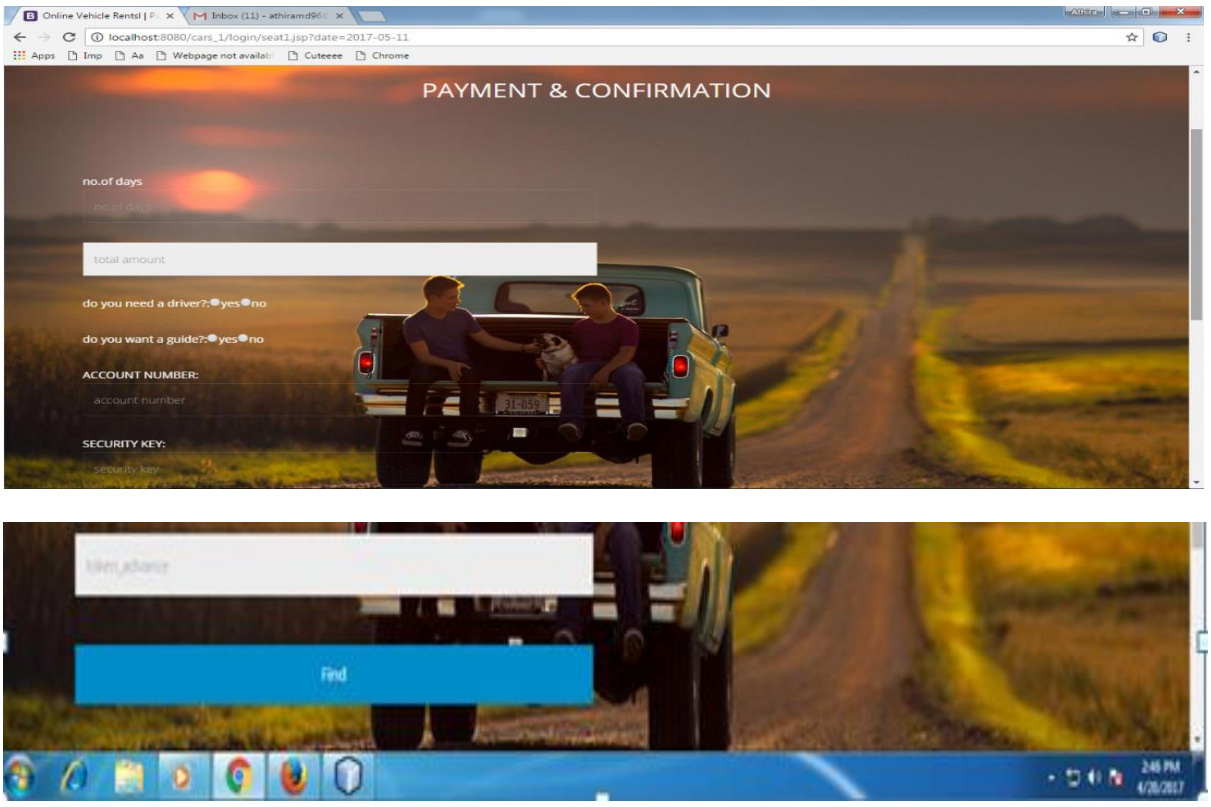


Fig 4.16 Payment and confirmation page

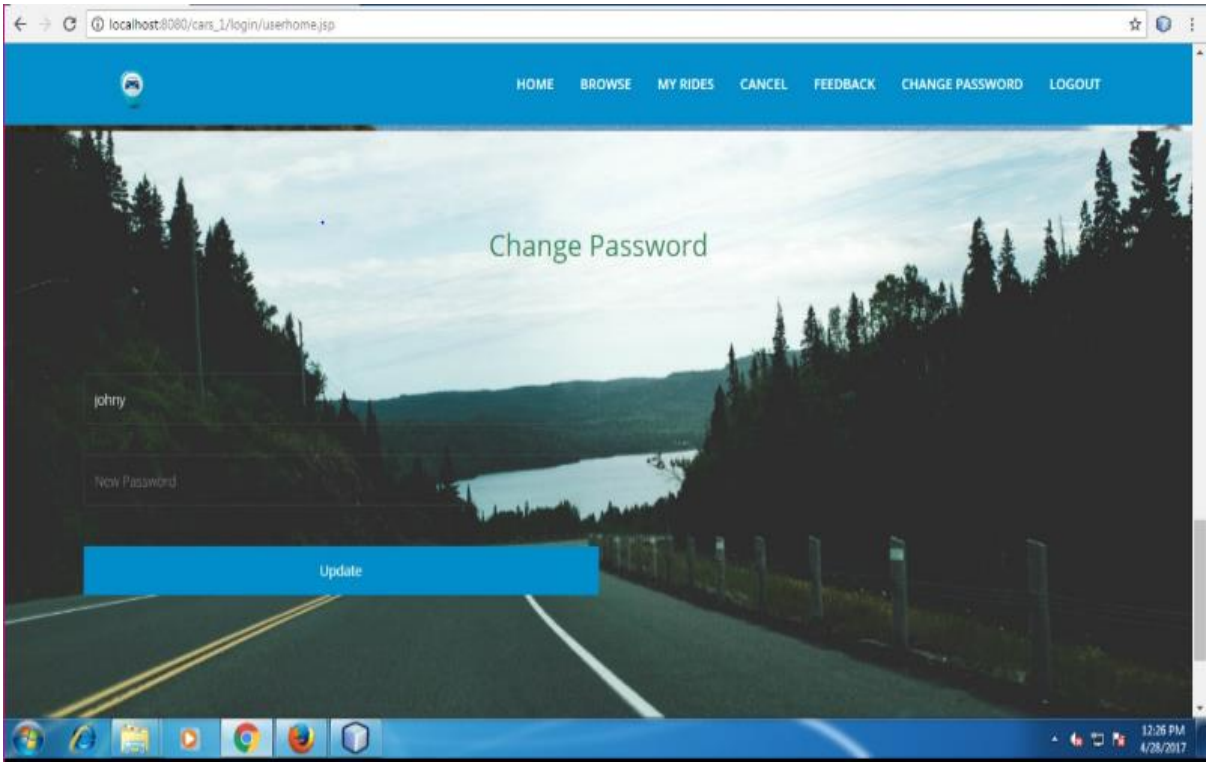


Fig 4.17 Change password page

CHAPTER 6

CONCLUSION

I believe that our proposed system will effectively solves the problems with manual vehicle rental system. The customers can go online and reserve any kind of vehicle of their choice based on their purse and availability of such vehicle at the time of reservation..It completely automates vehicle rental and reservation. One advantage is the user convenience. Our proposed system also exhibits all those characteristics that make web-based systems the most popular. Our system is easy to manage. It is stable and secure. It has fast and reliable access. Our system is online, 24 hours a day –for booking and for changes.

Through the use of Google MAP the admin can track the vehicle location. The admin can always view the rent status and can add/delete vehicles, driver, guide as per the requirements. Thus making our system more user-friendly.Customers were provided with cost efficient and time saving services. As a whole our system is thoughtfully designed to eliminate all the unnecessary hassless of running a manual vehicle rental system and provides a clear and efficient service to the users in all aspects.

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CHAPTER 7

REFERENCES

1) www.journaldev.com
2) JSP-Tutorial-Budi-Kurniawan
3) wampserver.en.softonic.com
4) www.javatpoint.com/sql-tutorial
5) www.tutorialspoint.com/sql/
6) https://netbeans.org/community/releases/81/install.htm
7) Java Tutorial for Beginners by India community.
8) Fundamentals of Database by Elmsari Navathe