Tribhuvan University

Faculty of Humanities and Social Sciences

A Project Report on

"ONLINE VEHICLE RESERVATION SYSTEM"

In partial fulfillment of the requirements for the Bachelors in Computer Application

Submitted To:

Department of Computer Application

Triton International College

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June 2022

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Supervisor's Recommendation

I hereby recommend that this project prepared under my supervision by **Basanta Chapagain** entitled "**Online Vehicle Reservation System"** in the Partial Fulfillment of requirement for the degree of Bachelor in Computer Application is recommended for that final evaluation.

……

SIGNATURE

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Tribhuvan University

Faculty of Humanities and Social Sciences

Triton International College

LETTER OF APPROVAL

This is certified that this project prepared by **"Miraj Shrestha** and **Bikal Prajapati"** entitled "**Online Vehicle Reservation System"** in the Partial Fulfillment of requirement for the degree of Bachelor in Computer Application has been evaluated. In our opinion it is satisfactory in the scope and quality as a project for the required degree.

…….. **Mr. Basanta Chapagain** **Supervisor** **Subidhanagar, Kathmandu**	**……..** **Mr, Shree Krishna Maharjan** **Coordinator** **Subidhanagar, Kathmandu**
…….. **Internal Examiner**	**……..** **External Examiner**

ABSTRACT

In the partial fulfillment of the requirement for the degree of BCA project titled “Online Vehicle Reservation” has been an online portal to search for self-driving rental vehicle. This developed system is built to let the vehicle owners able to rent their vehicle without any third party in between. And, people willing to get a vehicle on rent to drive throughout the journey by them. This website has search options where users can easily search for Vehicles in your desired area. Users can easily review the vehicles rented. This standalone web application is built with object-oriented approach.

The developed solution includes Eclipse as design & development software, Web browser as frontend, HTML as a markup language, Core Java & JSP as programming language and MYSQL database as backend or the development.

Keyword: Car rental, Reservation, Vehicle rental, XAMPP, JSP.

ACKNOWLEDGEMENT

We would like to express our special thanks of gratitude to our supervisor **Mr. Basanta Chapagain** who gave us the golden opportunity to do this wonderful project on the topic of **Online Vehicle Reservation System**, which also helped us in doing a lot of research and we came to know about so many new tools and technologies.

We would like to express my special gratitude and thanks to our BCA Program Coordinator **Mr. Shree Krishna Maharjan** for his support and help for our personnel development and mainly for the completion of this Project.

We are highly indebted to **TRITON INTERNATIONAL COLLEGE** for their guidance and constant supervision as well as for providing necessary information regarding the Project and support in the completion.

We would also like to express my gratitude towards library and member of Triton International College for their kind co-operation and encouragement which help me in completion of this Project

We would also like to thank our parents and friends who helped us a lot in finalizing this project within the limited time frame.

In the end, we would also like to thank Tribhuvan University for giving us this opportunity via the course of Computer Application to help us understand the project ethics at this early stage and helped us to evaluate my knowledge and expand it a little more.

TABLE OF CONTENTS

ABSTRACT ..... **i**

ACKNOWLEDGEMENT ..... **ii**

LIST OF ABBREVIATIONS ..... **v**

LIST OF FIGURES ..... **vi**

LIST OF TABLES ..... **vii**

CHAPTER:1 ..... **1**

INTRODUCTION **1**

1.1. Introduction 1

1.2. Problem Statement 1

1.3. Objectives 1

1.4. Scope and Limitation 2

1.4.1 Scope 2

1.4.2 Limitation 2

1.5. Report Organization 2

CHAPTER: 2 ..... **4**

BACKGROUND STUDY AND LITERATURE REVIEW **4**

2.1 Background Study 4

2.2 Literature Review 4

CHAPTER: 3 ..... **6**

SYSTEM ANALYSIS AND DESIGN **6**

3.1 System Analysis 6

3.1.1 Requirement Analysis 7

3.1.2 Feasibility Study 10

3.1.3 Data Modeling (Er-Diagram) 12

3.1.4 Process Modeling 12
3.2 System Design 15
3.2.1 Architectural Design 15
3.2.2 System Flow Diagram 15
3.2.3 Data Schema` 19
3.2.4 Interface Design 19
3.2.5 Physical Data Flow Diagram 23
CHAPTER: 4 IMPLEMENTATION AND TESTING 25
4.1 Implementation 25
4.1.1. Tools Used 25
4.1.2 Implementation Details Of Modules 26
4.2 Testing 27
4.2.1 Test Cases For Unit Testing 28
4.2.2 Test Cases For System Testing 31
CHAPTER: 5 34
CONCLUSION AND FUTURE RECOMMENDATIONS 34
5.1 Lesson Learnt / Outcome 34
5.2 Conclusion 34
5.3 Future Recommendations 35
REFERENCES 36

LIST OF ABBREVIATIONS

CSS	Cascading Style Sheet
DFD	Data Flow Diagram
ER Diagram	Entity Relationship Diagram
GUI	Graphical User Interface
HTML	Hypertext Markup Language
MySQL	Structured Query Language
OVRS	Online Vehicle Reservation System

LIST OF FIGURES

Figure 3.1Agile Method 6
Figure3.2 Use Case Diagram of Online Vehicle Reservation System 8
Figure3.3 Gantt Chart for Online Vehicle Reservation System 11
Figure 3.4 ER Diagram of Online Vehicle Reservation System 12
Figure 3.5 : Context Level Diagram of Online Vehicle Reservation System 13
Figure 3.6 Level 1 DFD of Online Vehicle Reservation System 14
Figure3.7 Three-Tier Architecture Design of Online Vehicle Reservation System 15
Figure 3.8 System Flow Diagram for Admin of Online Vehicle Reservation System 16
Figure 3.9 System Flow Diagram for Vehicle Owner of OVRS 17
Figure 3.10 System Flow Diagram for User of Online Vehicle Reservation System 18
Figure 3.11 Data Schema Diagram 19
Figure 3.12 Registration Page of OVRS 20
Figure 3.13 Vehicle Owner Login Page of OVRS 20
Figure 3.14 User Login Page of OVRS 21
Figure 3.15 User Dashboard Page 21
Figure 3.16 Vehicle Page of OVRS 22
Figure 3.17 Featured Vehicle Page of OVRS 22
Figure 3.18 Physical DFD for Owner of Online Vehicle Reservation System 23
Figure 3.19 Physical DFD for User of Online Vehicle Reservation System 23
Figure 3.20 Physical DFD for Admin of Online Vehicle Reservation System 24

LIST OF TABLES

Table 4.1 Test Case of admin login of OVRS 28
Table 4.2 Test Case of vehicle owner registration of OVRS..... 29
Table 4.3 Test Case of vehicle owner login of OVRS..... 29
Table 4.4 Test Case of User registration of OVRS..... 30
Table 4.5 Test Case of user login of OVRS..... 31
Table 4.6 Test Case of Add-Vehicle of OVRS..... 32
Table 4.7 Test Case of Vehicle Deletion 33
Table 4.8 Test Case of Search-Vehicle..... 33

CHAPTER:1

INTRODUCTION

1.1. Introduction

The project "Online Vehicle Reservation System" is an online portal which is specially designed & developed to resolve the current market problem of renting a vehicle directly through a web portal. The vehicle owners will be provided the full privileges of managing their vehicle information from data entry to booking management. And, the vehicle renters to upload & manage required legal documents and also view their booking history. The system has been given a smart search engine for searching the vehicle according to journey locations & date required. Once the vehicle has been booked for the certain time period the vehicle is automatically not bookable for that time period.

1.2. Problem Statement

The problem statement of this project is to develop an online process of vehicle rental service. The current system is time consuming as customers have to call manually to rent or reserve a vehicle.

Many vehicle owners buy vehicles but do not use regularly. There are middle class people who want to buy vehicles but cannot afford to do so. Rather than hiring a driver people prefer to self-drive as most as possible. Tourists that like to drive while visiting cannot rent it in affordable price.

The goal of this project is to automate vehicle rental and reservation so that customers do not need to call and spend unnecessary time in order to reserve a vehicle and the passive owners can utilize their unused vehicle.

1.3. Objectives

- To target for vehicle owners who intend to rent their vehicle for some extra income,
- To manage details of vehicle, payment, user and owner,

- To reduce manual work for managing vehicle, payment, user and vehicle owner.

1.4. SCOPE AND LIMITATION

1.4.1 Scope

Vehicle Owners,

In this online portal a vehicle owner can rent their vehicle online in this platform and can also get cash even in the leisure time or holidays when their vehicles are not being used or can also earn enough money by continuously let rent their vehicle in this platform. A vehicle owner can also rent their vehicle in this portal according to their feasible Location and time.

Users,

A user can book a self-drive vehicle which was listed in the portal by the vehicle owner and can take that vehicle to the place he/she desired to be with a freedom to use the vehicle efficiently. A user will get different facilities and discounts on the booking as well and can get varieties of option in vehicle he wants to take for a few days. There will be no involvement of third party, generally known as broker as this online portal will be a platform for both the vehicle owner and user to get in touch once booking is done and mutually discuss whether the vehicle will be delivered or the user will come to pick up the vehicle.

1.4.2 Limitation

- It’s an online portal, so wouldn’t be efficient on area where internet connectivity is a major problem
- A mobile app supporting will be a great add on.

1.5. Report Organization

Introduction

This chapter deals with the introduction of the system with its objectives, scope and limitations along with the reason why the system is made.

Background Study and Literature Review

This chapter summarizes the work that has been carried out in the field of data mining and also describes the features about some existing applications related to the Vehicle Reservation Systems.

System Analysis and Design

This chapter focuses on the different requirement of the system, which describes about the functional, non-functional, feasibility analysis, Data Modelling, Process modelling, System design like: architectural diagram, database schema diagram and many more.

Implementation and Testing

This chapter emphasizes tools used in system development, implementing details and result of test performed.

Conclusion and Future Recommendation

This chapter highlights brief summary of lesson learnt, outcome and conclusion of the whole project and explain what have been done and what further improvements could be done.

CHAPTER: 2

BACKGROUND STUDY AND LITERATURE REVIEW

2.1 Background Study

For Online Vehicle Reservation System, it has been assumed that vehicle owners would be able to use the online portal along with updating their vehicle details with pictures to upload. The vehicle information entity has been designed assuming common specification titles provided in the market. The availability of the vehicle has been managed using the date & location of the vehicle recorded into the database. The search engine is accordingly designed too. Three different users are managed according to the system requirement. The entities in database are strongly related so that the data is consistent over the system. Once the vehicle is booked, it is reserved for the booked timeframe to the specific user only.

2.2 Literature Review

For this project, we researched and reviewed some of the related websites and applications. Throughout the research, we get to find out that there are very few websites or applications related to Vehicle reservation websites. So, the users aren't able to get the quality services and suitable offer. If some websites are available for users, we found the websites are looking for many features regarding the vehicles. Especially, the users are not convinced with the quality of services given to them.

After our research, we came to know that there are various kinds of websites for Vehicle Reservation System like 'rentalcars', 'autoeurope', 'enterprise' etc. But however, there are certain limitations which we are trying to overcome through our project.

Rentalcars:

In Rentalcars an user must be 21 years to be able to rent a vehicle and the prices are also different for different age groups users. Rentalcars provide insurance for collision damage of vehicles. A user must pre-book the car before 2 or 3 days and can prebook for future for fair

price if an user is in urgency the Rentalcars charges high chaege to the customer and also need to choose the location which cannot be edited without cancelling the booking. [1]

Autoeurope:

In Autoeurope an user does not get refund or cannot cancel the reservation after the 48 hours of the reservation and the pricing is done with the 24-hour basis for example if a user takes a vehicle at 4am then the user has to return the vehicle before 4 otherwise the user will be charged of another 24 hours. Here an user can only rent the car that the company owns and don't gave an opportunity to utilizes their car as it does not let other people to rent their car because it's more of a profit oriented system rather than the service oriented system. [2]

Enterprise:

In Enterprise a user can't rent a car on an hourly basis. An user must be able to rent a car in an hourly basis as it would be a service for a user which will cost reasonable cost for user and the repeating booking of a customer will be a way for a greater success of an company in the future and the user will only be charged of an exact time he/she uses the vehicle. Only user with 25 years age is able to rent vehicle in enterprises and targets the small space of the people which will affect the company for the wellbeing of it.

A reliable service oriented rather than maximum profit-oriented Vehicle Reservation System is proposed which will keep track of the user and the vehicle. Vehicle reservation system is a service provided by a company to the customers who are willing to rent different vehicle for their small period of use in case to pick up somebody , or for a vacation with family in a luxurious car or a small ride to the nearest hill station and many more in a affordable price and we are willing to have two platform one for an user who will rent the car or vehicle from our website and another one for a vehicle owner who will be willing to give his/her car or vehicle and earn some money as well as will utilize his/her resources when unneeded for him/her better standing in a corner rusting inside. A fair priced and better website is needed with maximum facility for a user and also the vehicle owner to get a well serviced conditioned vehicle for an user to rent and to get some extra money in a leisure time for a vehicle owner in a website. [3]

CHAPTER: 3

SYSTEM ANALYSIS AND DESIGN

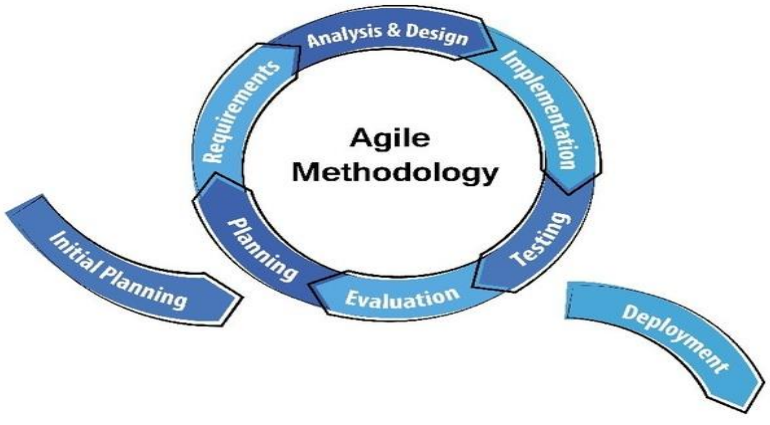
3.1 System Analysis

Online Vehicle Reservation System is developed under the process of agile methodology. Agile methodology focuses on obtaining functional requirements through iterations. Since this project cannot be completed in one phase, agile methodology is ideal for the development of this project.

The Agile methodology is a way to manage a project by breaking it up into several phases. It involves constant collaboration with stakeholders and continuous improvement at every stage. Once the work begins, teams' cycle through a process of planning, executing, and evaluating. Continuous collaboration is vital, both with team members and project stakeholders.

Here are some concepts for using the agile method in this project:

- It suits small size project, with rapidly changes in the requirements as customer is involved during each phase and empowers the team.
- Very limited planning is required to get started with the project.
- Risks are minimized because of its versatile nature.
- Project are divided by short and transparent iterations. [4]



[5]

Figure 3.1Agile Method

3.1.1 Requirement Analysis

The requirements are to be collected before starting projects' development life cycle. To design and develop system, functional as well as non-functional requirement of the system has been studied.

I. Functional Requirements

These are the requirements that the website fulfills. It shows outlines of workflows performed by the website. The functional requirements of the website are to allow user to rent a vehicle at the convenience of their homes and allow owners to put up vehicles for rent.

The list of functional requirements for admin of the website include:

a. The system should allow the system administrator to login and logout from the system.
b. The system should allow the system administrator to approve the request for feature vehicle.
c. The system should allow the system administrator to block the vehicle owner.

The list of functional requirements for Vehicle Owner of the website include:

a. The system should let Vehicle Owner to register in to the system.
b. The system should let Vehicle Owner to login to the system.
c. The system should let Vehicle Owner to request to feature vehicle.
d. The system should let Vehicle Owner to add/register new vehicles.
e. The system should let Vehicle Owner to delete the vehicle.
f. The system should let Vehicle Owner to edit the vehicle details.

The list of functional requirements for User of the website include:

a. The system should let User to register in to the system.
b. The system should let User to login to the system.
c. The system should let User to Browse or Search the Vehicles.
d. The system should let the User to rent or book the vehicle.
e. The system should let the User to write the review of the vehicle.
f. The system should let the User to cancel the booking.

USE CASE DIAGRAM

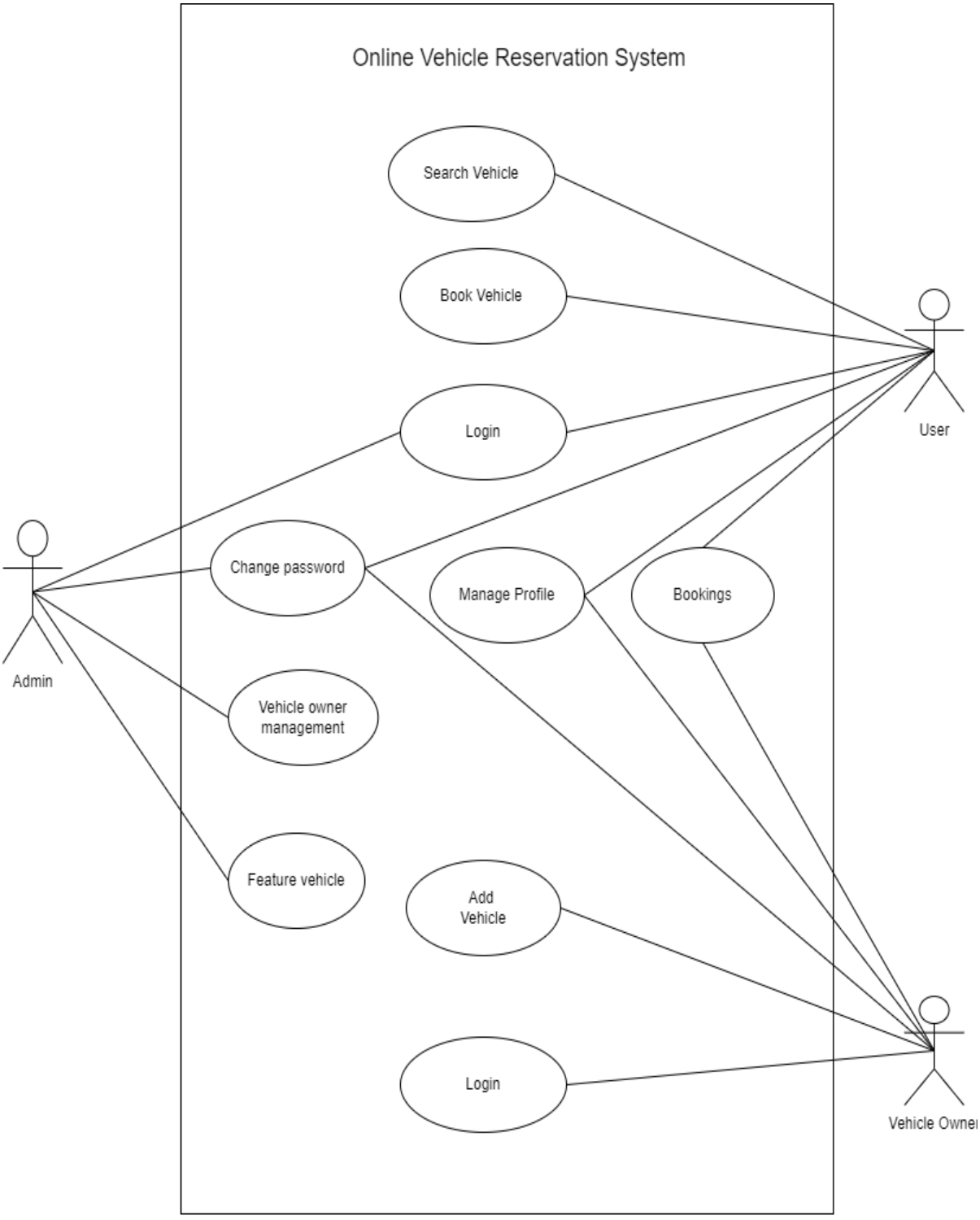


Figure3.2 Use Case Diagram of Online Vehicle Reservation System

II. Non-Functional Requirements

These requirements are the constraints or the requirement imposed on the system. Some of the lists of non-functional requirements are listed below:

a. **Maintainability:**

   An interface should be well maintainable and should be easy to maintain when the errors arise and should be maintained by the support before the system crashes and should be able to upgradable.

b. **Efficiency Requirement**:

   The efficiency of a software system refers to how well it handles capacity, throughput, and response time. With the deployment of the Online Vehicle Reservation system, Vehicle Owners , Users and admins can be in the same portal and vehicle owner can post vehicles for renting and users can book the vehicles and the admins cam manage the vehicle owners.

c. **Reliability Requirement:**

   The degree to which the software system regularly executes the stated functions without failure is referred to as reliability. User registration, user login, owner registration, owner login, adding vehicle and booking vehicle were all performed accurately by the system.

d. **Usability Requirement:**

   The system's usability criteria states how simple it must be to use. The system was created in a user-friendly environment so that users and administrators could easily and successfully complete various activities in the system.

e. **Implementation Requirement:**

   The process of turning strategies and plans into actions in order to achieve strategic objectives and goals is known as implementation. The frontend was created using HTML, CSS and JS, with JSP serving as the server-side programming language for database connectivity at the backend, i.e., MYSQL was utilized to develop the database.

3.1.2 Feasibility Study

The feasibility study concludes that the project is able to be implemented successfully as it was carefully planned.

i. **Technical feasibility study**

The system is technically feasible as the requirement for the development of the system is easily accessible. The necessary hardware and software required for the development and implementation of the system is available. The basic programming language which is suitable for project is available and the libraries required for project is capable of achieving the result that we are aiming for. All the existing resources can be used for the development and maintenance system.

ii. **Operational feasibility study**

The system is easy to operate with the basic knowledge of computer and internet and well-trained manpower is not necessary. User can also easily access the system as it is user friendly in many aspects with good User Interface (UI). This system includes all the requirements used for OVRS and this Website is completely operational and can be successfully implemented and administration feel easy to use this Website as it is user-friendly.

iii. **Economic feasibility study**

The system is economically feasible and cost effective. After the completion of the system organization didn't need to deploy any new hardware and software as the required software and hardware. The existing resource of the system can be used.

iv. **Schedule feasibility**

A system is said to be scheduled feasible if it is implemented within the planned schedule. We carried out the study on how much it will take to complete the task after studying the requirements and proposed plan.

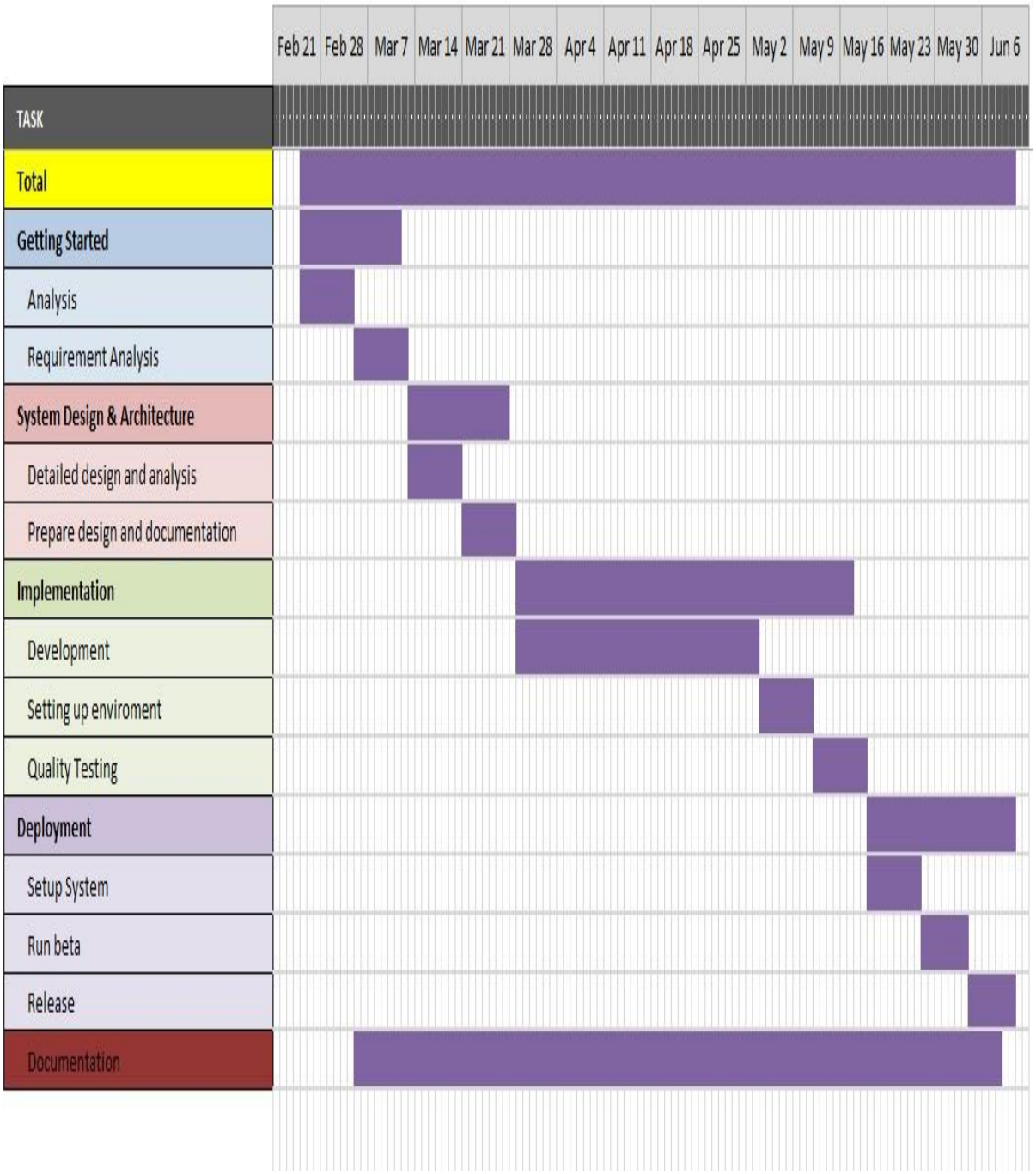


Figure3.3 Gantt Chart of Online Vehicle Reservation System

3.1.3 Data Modeling (ER-Diagram)

This ER (Entity Relationship) Diagram represents the model of the project (Online Vehicle Reservation System). The entity-relationship of project shows all the visual instrument of database table and the relations between admin, Bookings, user Vehicle Owner. It uses structured data to define the relationship between structured data group of Online vehicle Reservation System functionalities.

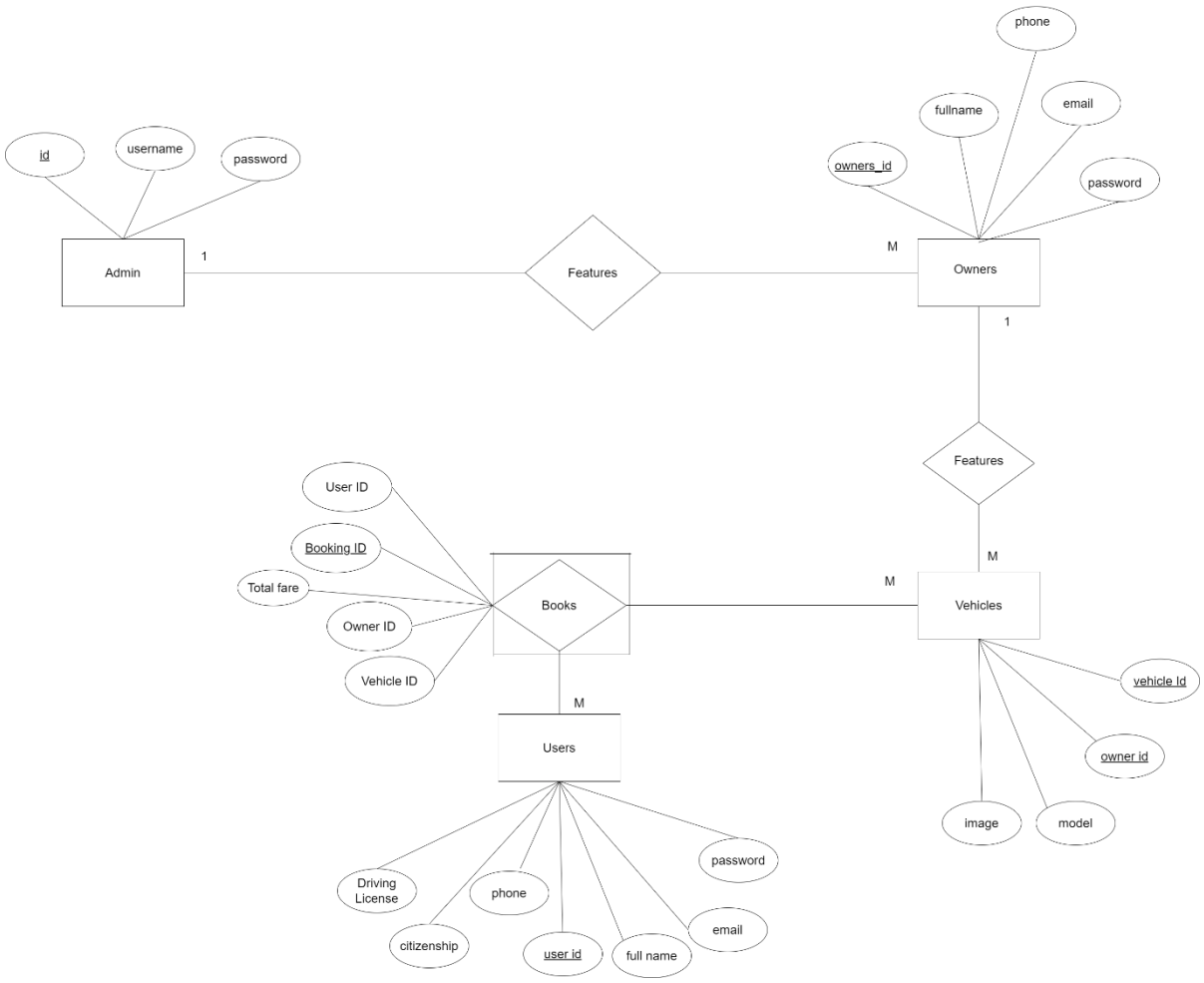


Figure 3.4 ER Diagram of Online Vehicle Reservation System

3.1.4 Process Modeling

Data Flow Diagram show the flow of data from external entities into the system and from one process to another within the system. Following are the Data Flow Diagrams for the current system. Each process within the system is first shown as a context Level DFD and the

later as Detailed DFD. The Context Level DFD provides a conceptual view of the process and its surrounding input, output and data stores. The Detailed DFD provides a more detailed and comprehensive view of the interaction among the subprocesses within the system. Which is explained below in figure.

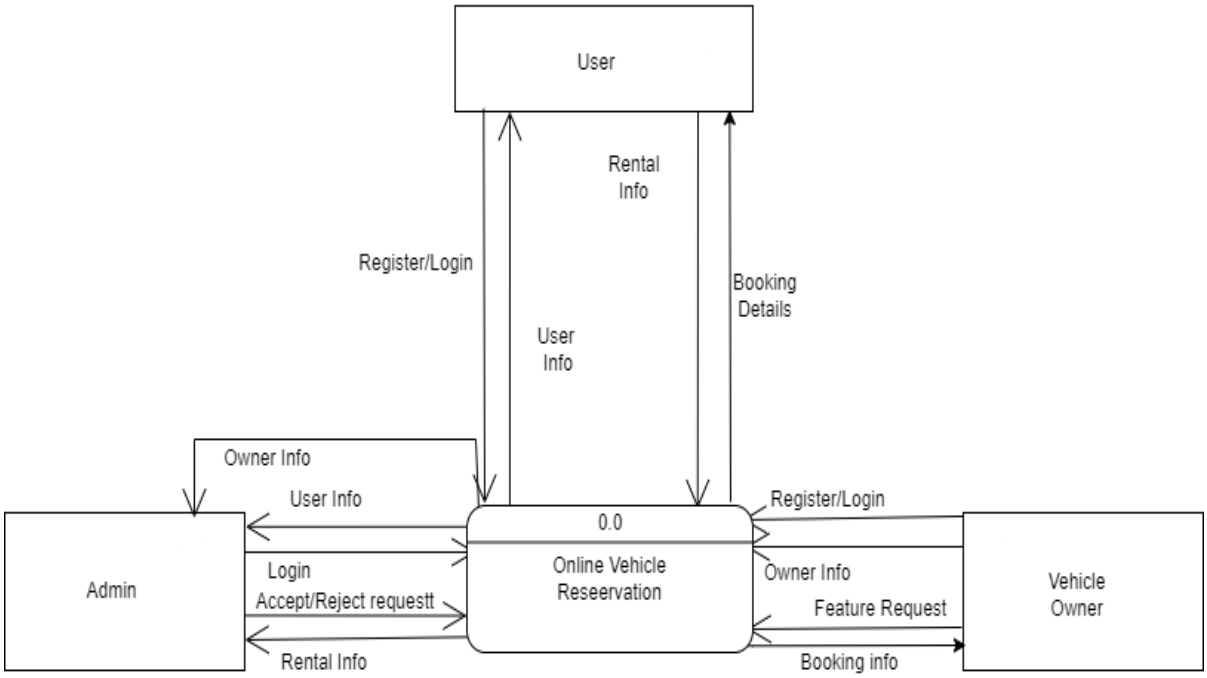


Figure 3.5 : Context Level Diagram of Online Vehicle Reservation System

Level 1 DFD of OVRS:

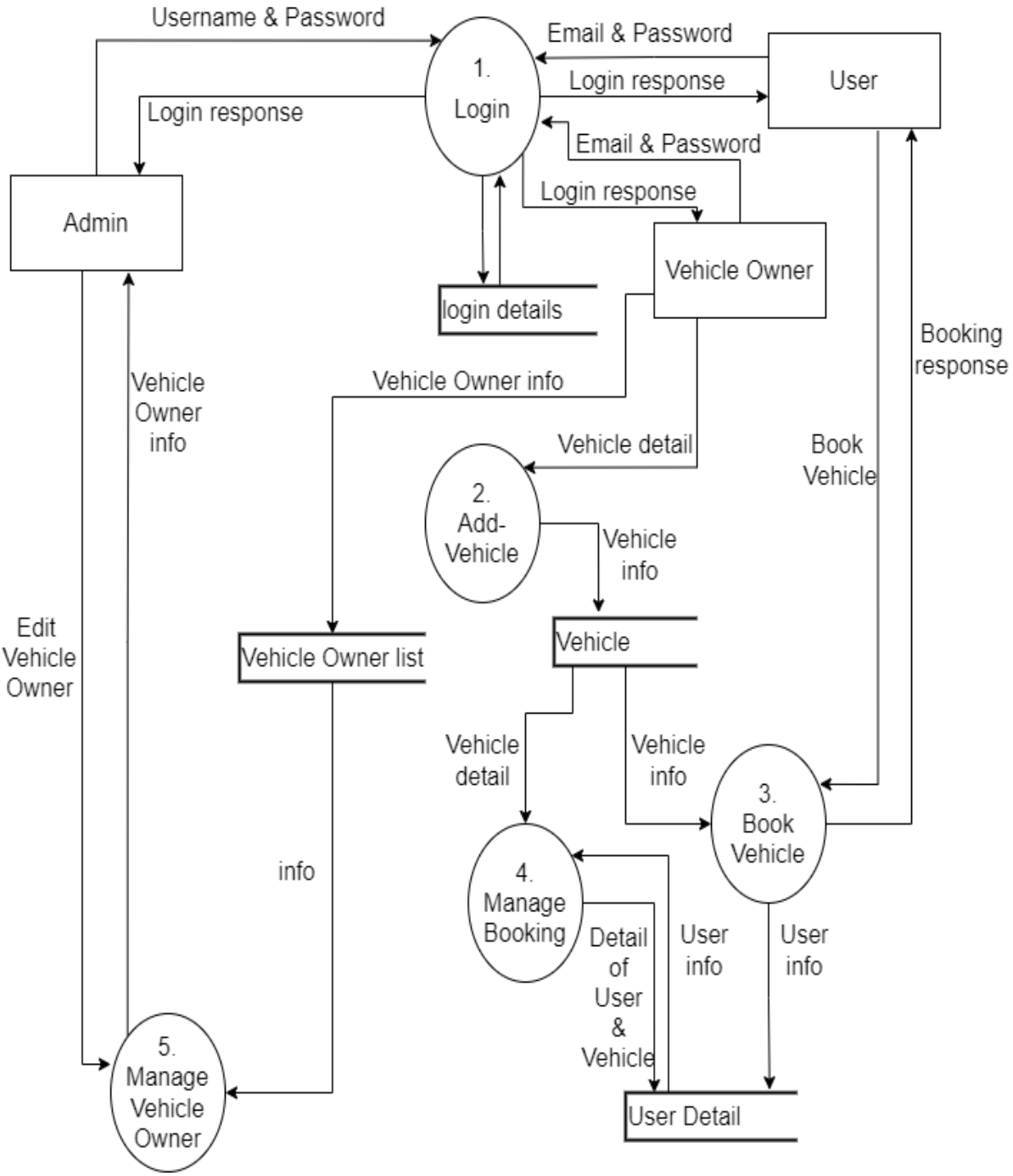


Figure 3.6 Level 1 DFD of Online Vehicle Reservation System

3.2System Design

3.2.1 Architectural Design

The next phase of design will be planning the architecture of the application. There will be in some cases a separation of the user interface and data. The business layer will be totally independent and not embedded in the views of the website. Data will be sorted in an SQL database. To query the database and code behind for server-side scripting will be in JAVA. The other business objects will have their own layer. The architecture of the application is shown below in figure:

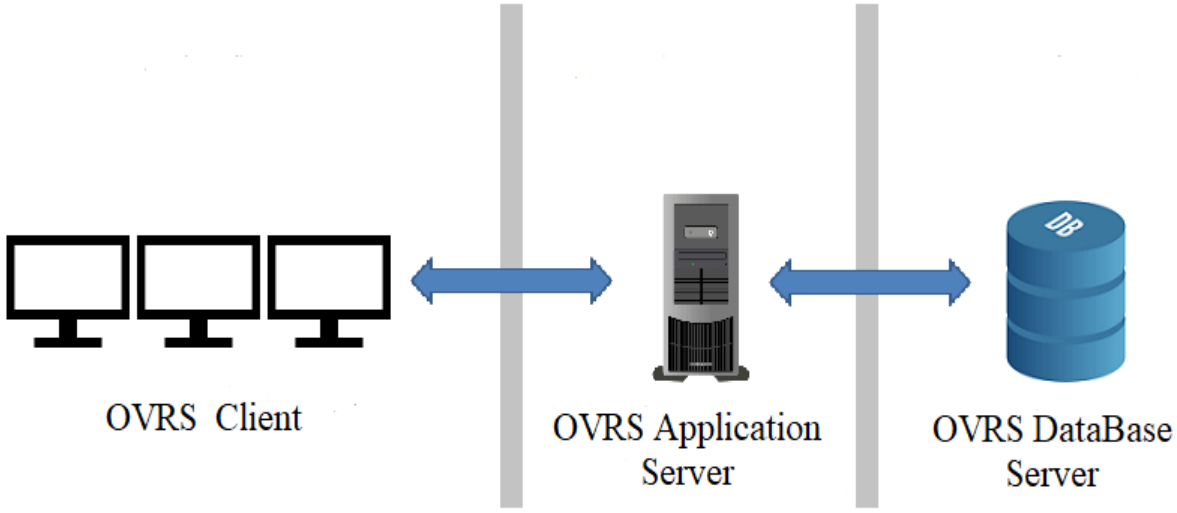


Figure3.7 Three-Tier Architecture Design of Online Vehicle Reservation System

3.2.2 System Flow Diagram

The figure below is the flowchart of Online Vehicle Reservation System. Here, admin and users such as admin, Vehicle Owner and User login the system and if user and vehicle owner is not register then they need to register first. After login success, it redirects to dashboard of admin, owner and user then owner adds the vehicle to the system so that the user will get vehicles to rent. Likewise for user, user search the vehicle to rent. The admin do not need to register they can directly login the system and after login success it redirects to dashboard of admin and admin manage vehicle owner.

For Admin,

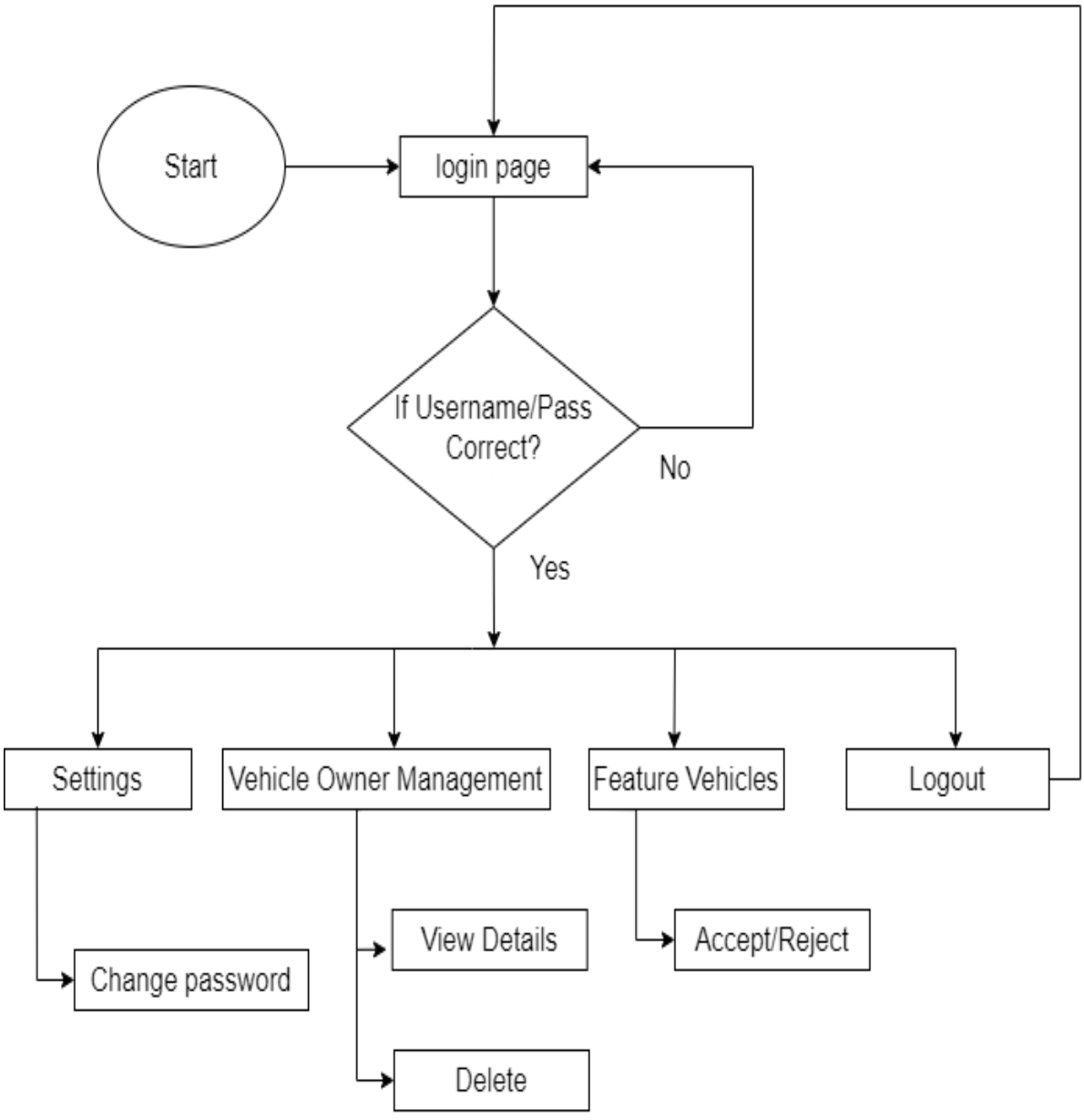


Figure 3.8 System Flow Diagram for Admin of Online Vehicle Reservation System

For Vehicle Owner,

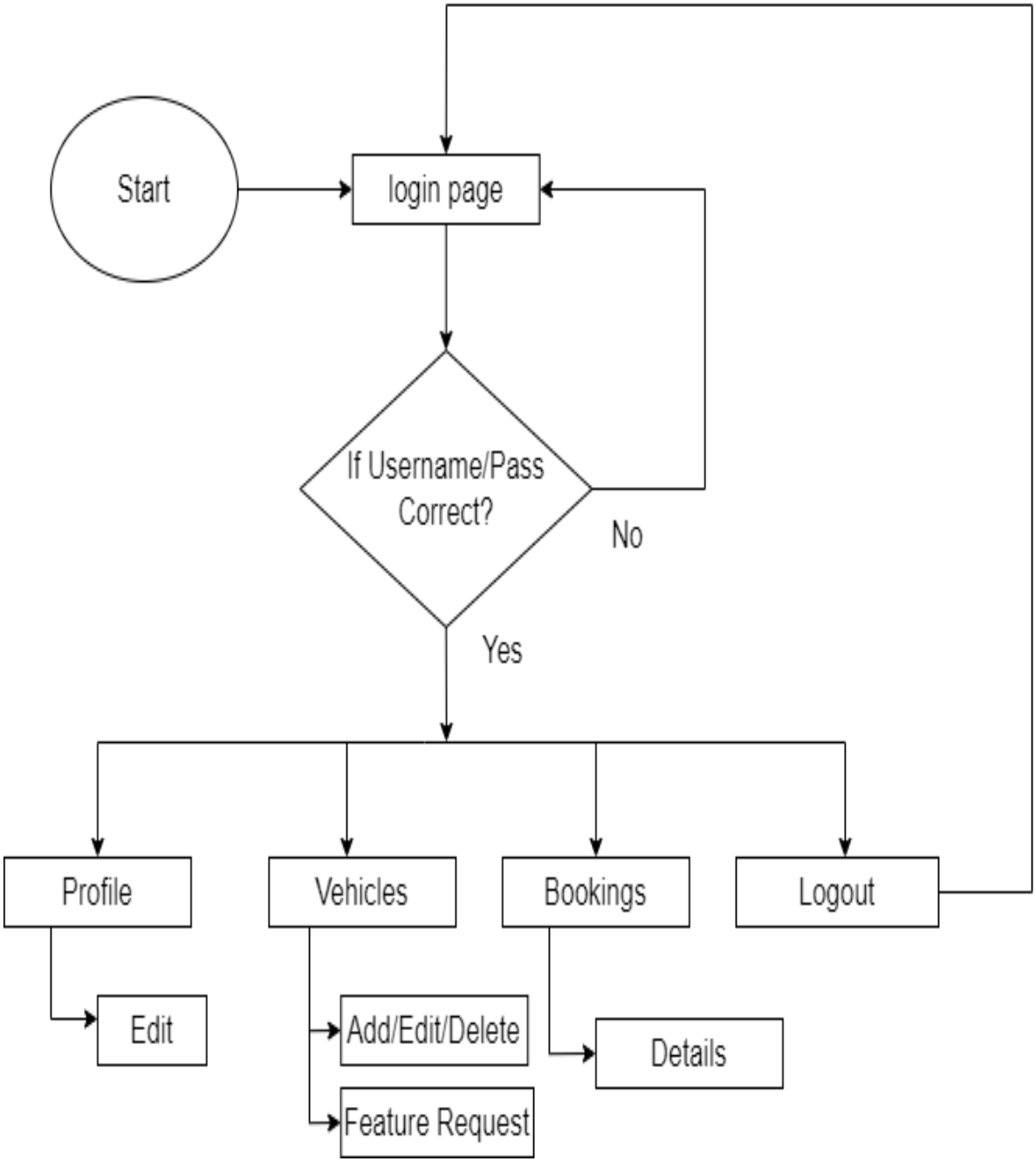


Figure 3.9 System Flow Diagram for Vehicle Owner of OVRS

For user,

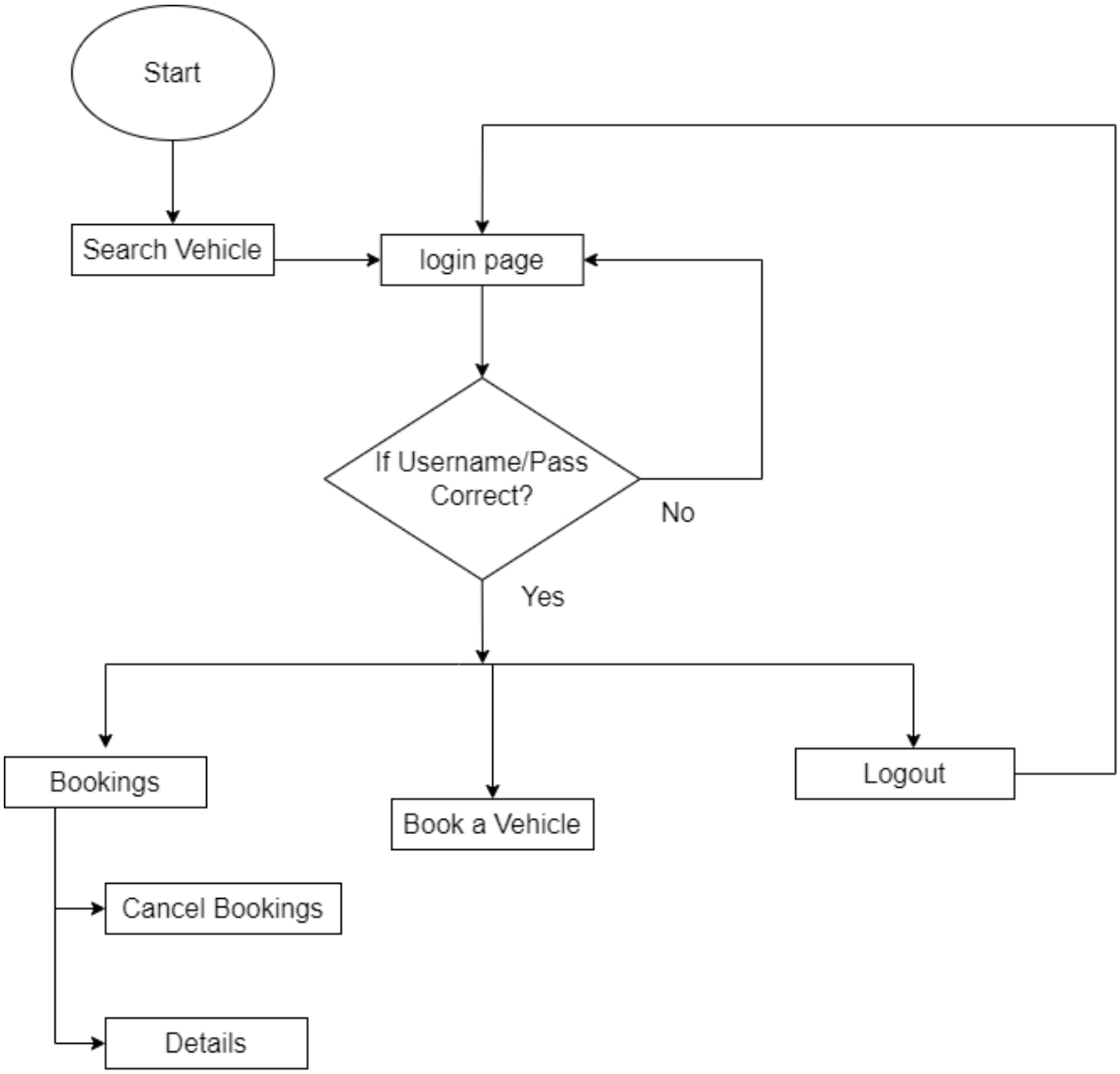


Figure 3.10 System Flow Diagram for User of Online Vehicle Reservation System

3.2.3 Data Schema`

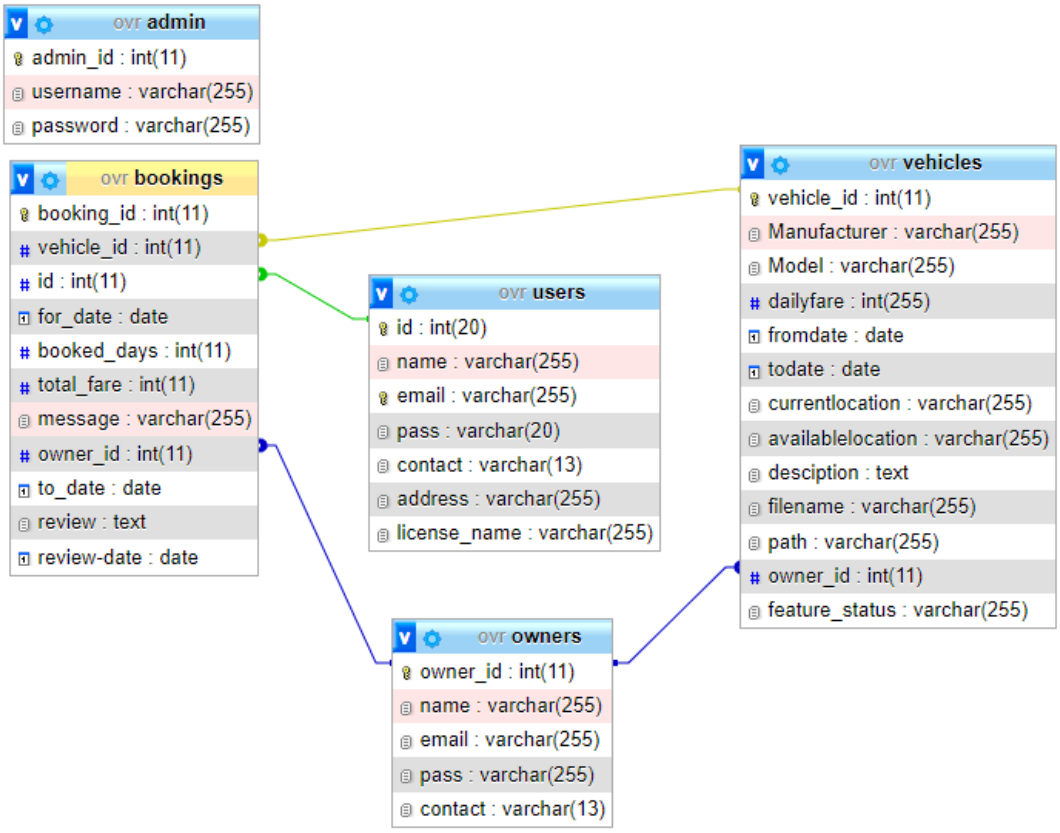


Figure 3.11 Data Schema Diagram

3.2.4 Interface Design

Before implementing the actual design of the project, a few user interface designs are constructed to visualize the user interaction with the system and the pictures of the system is also listed below:

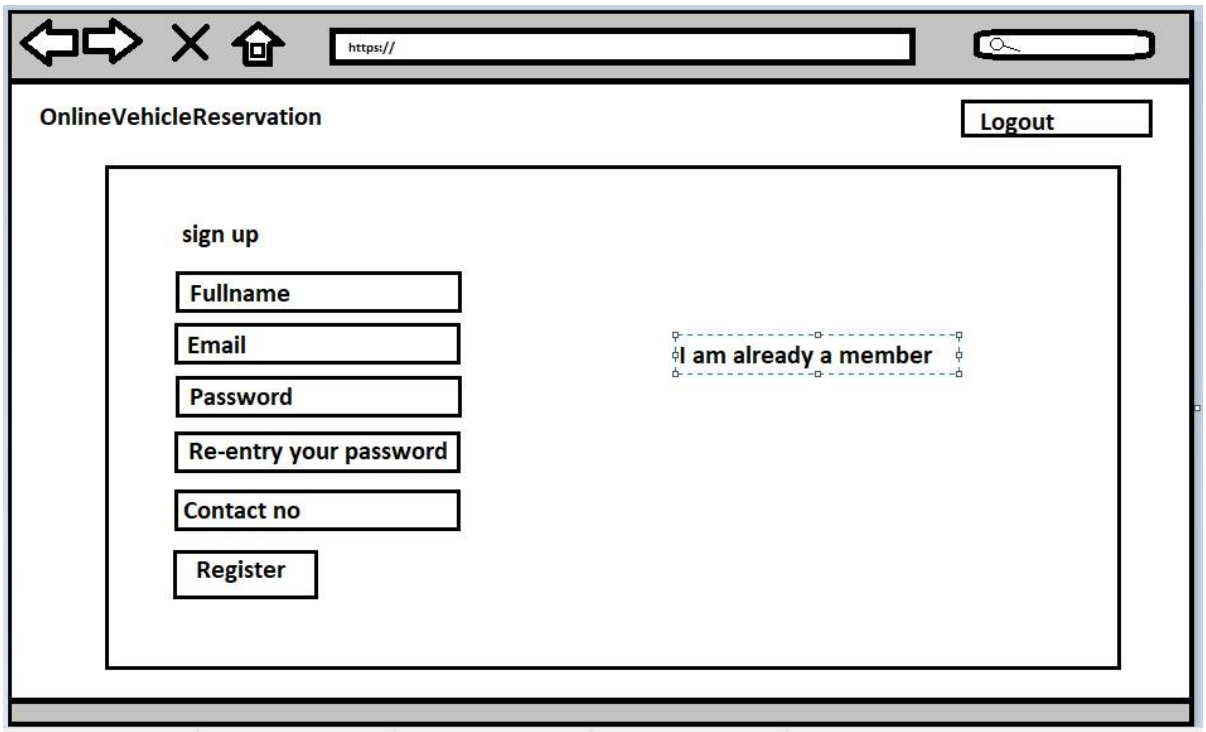


Figure 3.12 Registration Page of OVRS

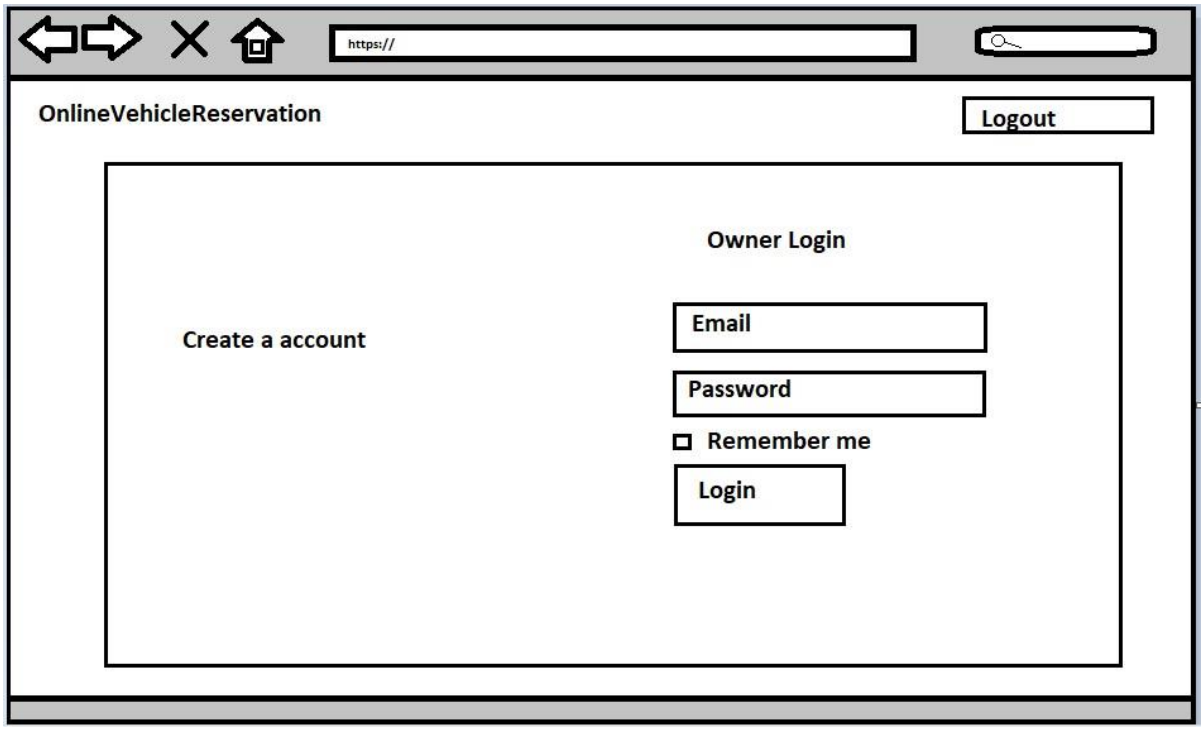


Figure 3.13 Vehicle Owner Login Page of OVRS

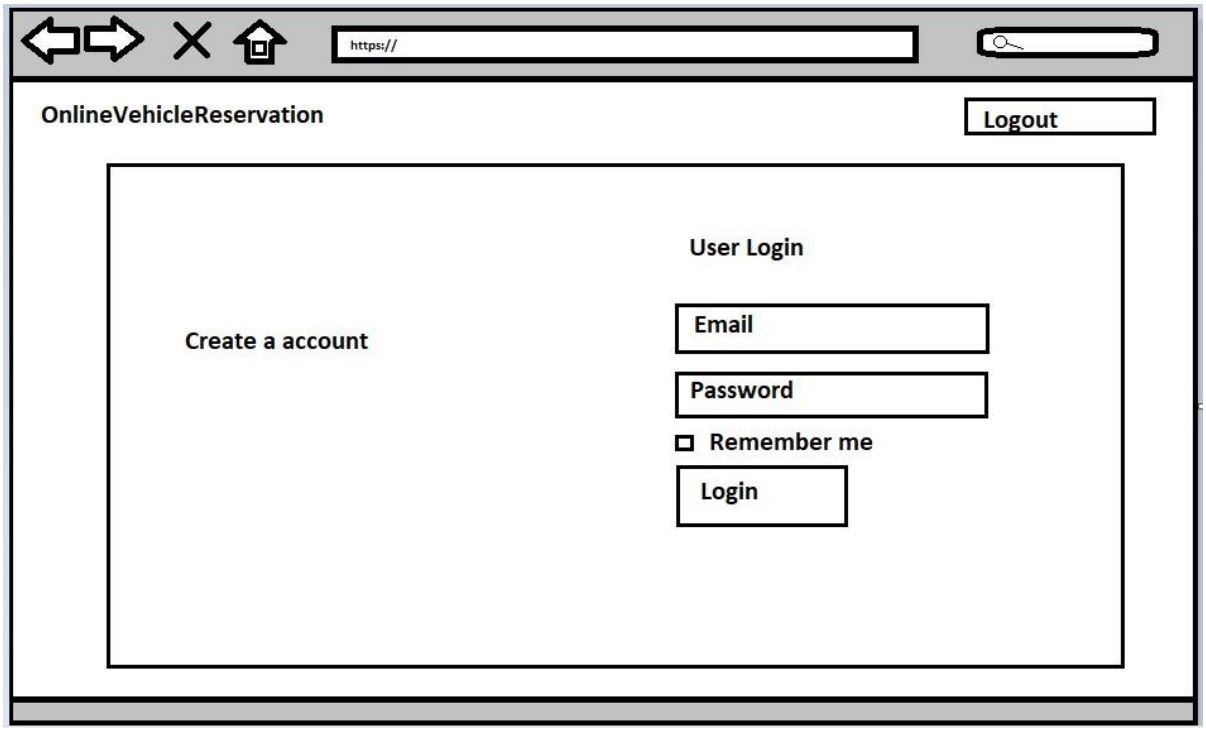


Figure 3.14 User Login Page of OVRS

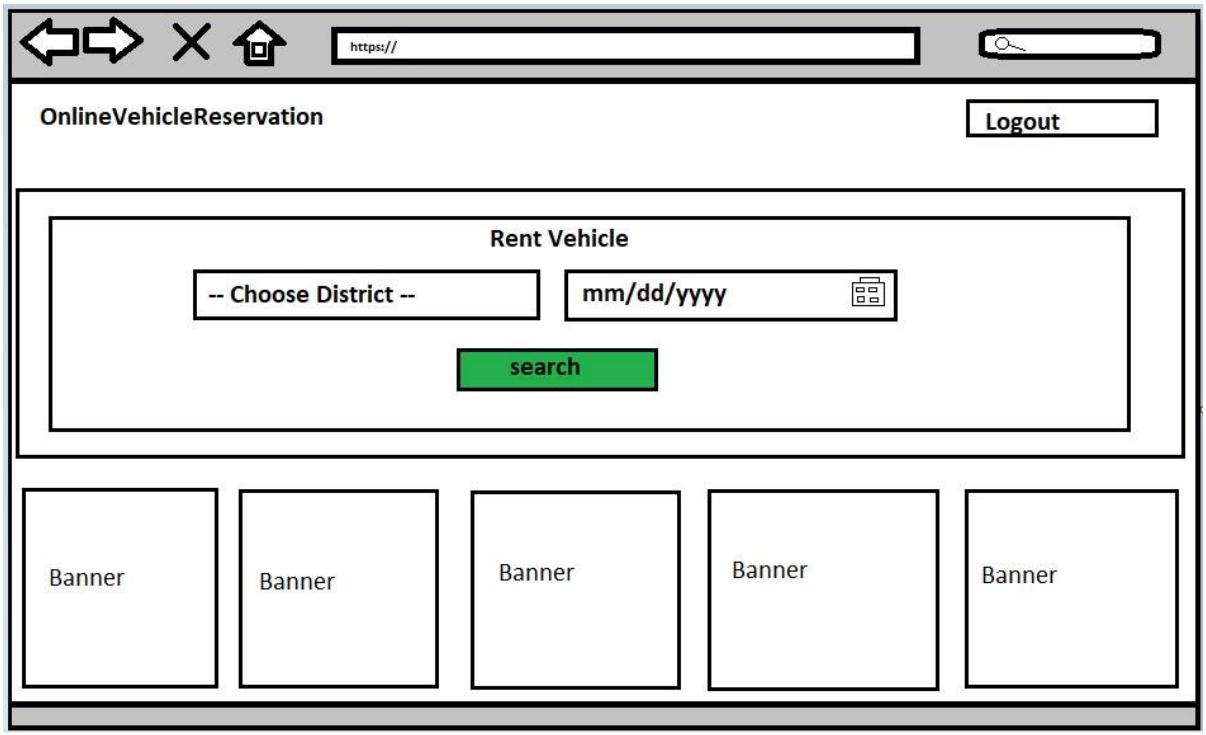


Figure 3.15 User Dashboard Page

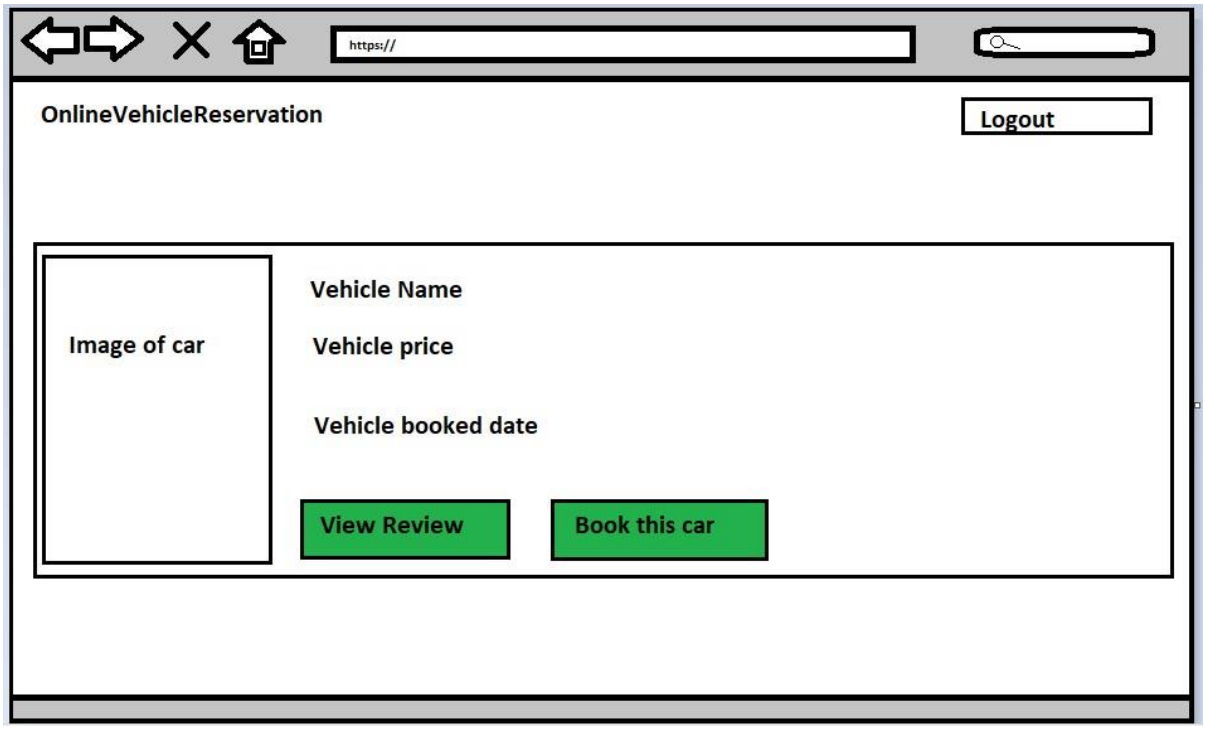


Figure 3.16 Vehicle Page of OVRS

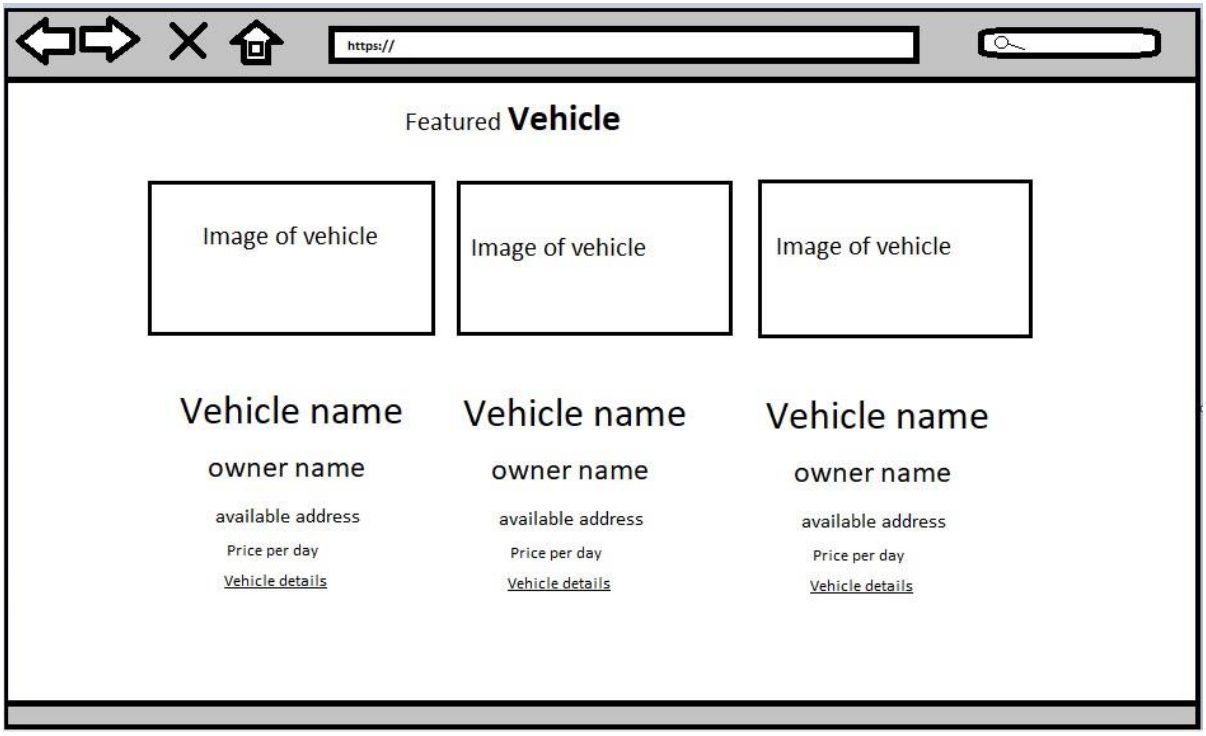


Figure 3.17 Featured Vehicle Page of OVRS

3.2.5 Physical Data Flow Diagram

Here, users such as vehicle owner's and user register and login to the system, if it is successful then the user's information is stored in the database. All the data such as the the vehicle details filled by the owner and the booking detail filled by the user is also stored in the database.

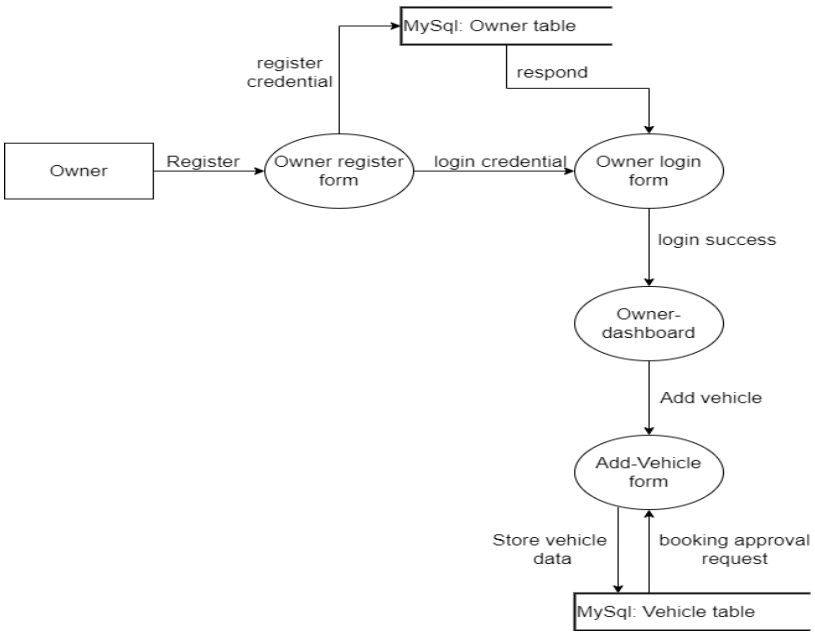


Figure 3.18 Physical DFD for Owner of Online Vehicle Reservation System

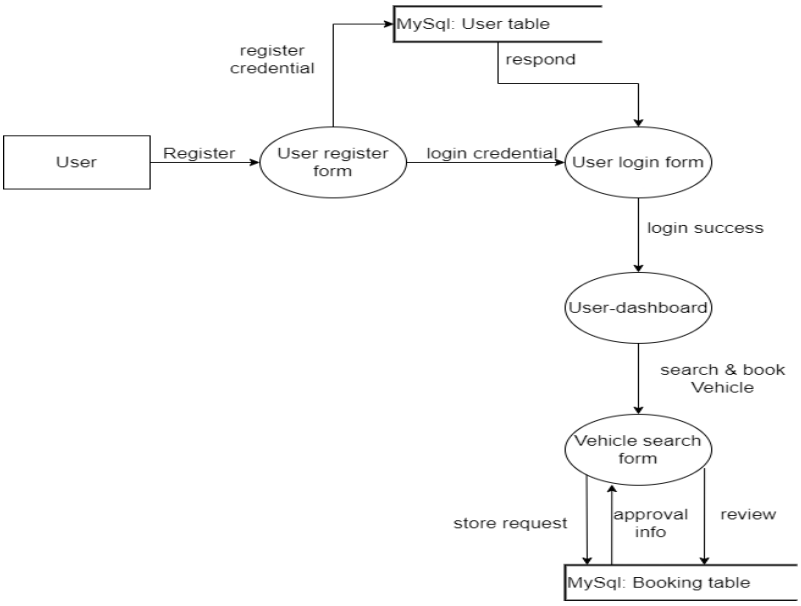


Figure 3.19 Physical DFD for User of Online Vehicle Reservation System

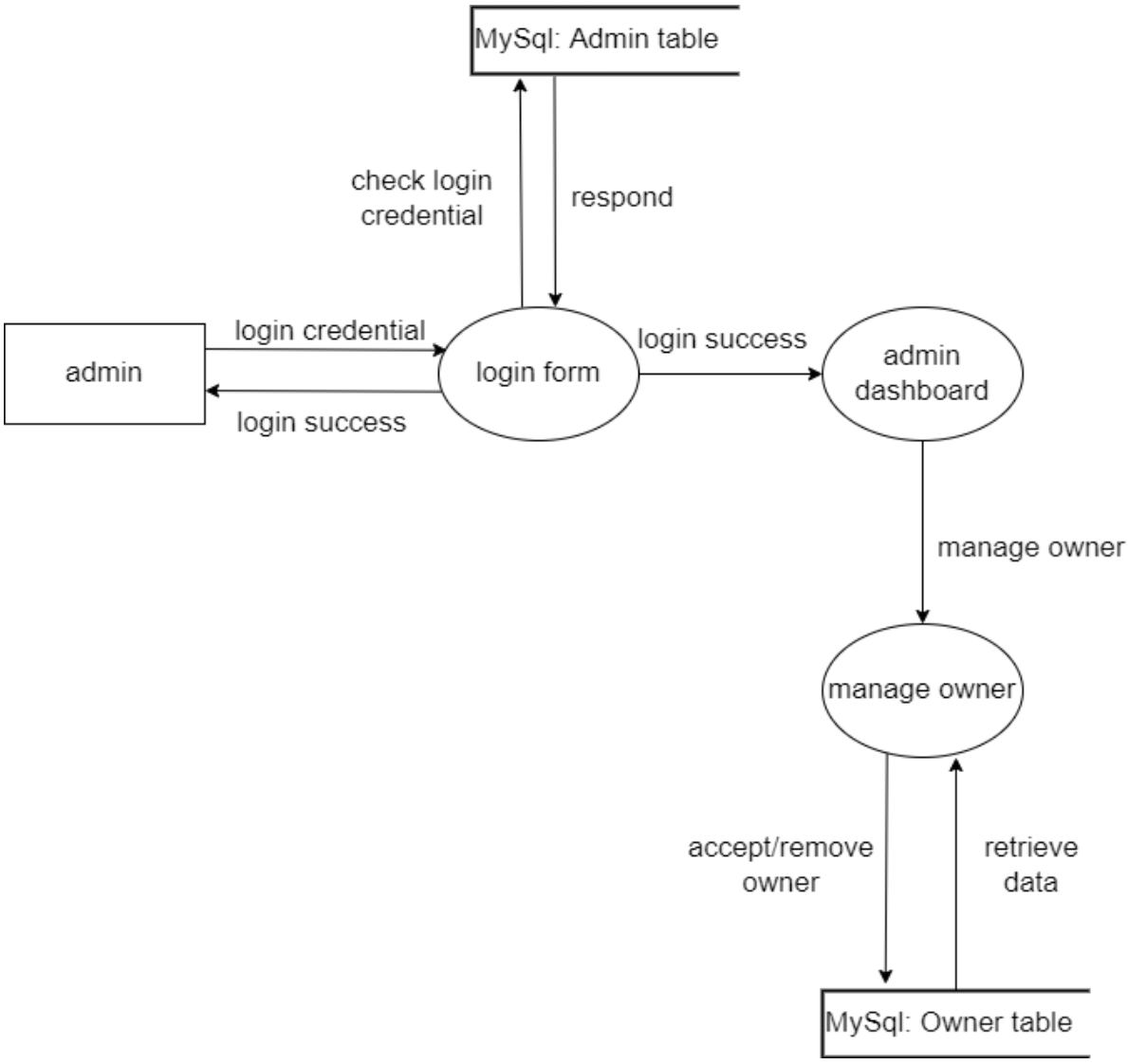


Figure 3.20 Physical DFD for Admin of Online Vehicle Reservation System

CHAPTER: 4

IMPLEMENTATION AND TESTING

4.1 IMPLEMENTATION

Implementation basically means the phase where the system is actually being built. Firstly, all the information that we grabbed is studied and analyzed and implemented a system in operation for users. It is one of the important phases of any project. Implementation usually consists of coding, testing, installation, documentation, training and support. Different tools and technologies that have used to develop the system which are already discuss in the previous chapter. It is basically covering system design specification in to working software.

4.1.1. TOOLS USED

The various tools that have been used in developing both the front-end and back-end of the project are being discussed in this chapter.

Front-End Tools

Html and CSS:

The HyperText Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript. Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML.

Eclipse IDE:

Eclipse is an integrated development environment (IDE) used in computer programming. It contains a base workspace and an extensible plug-in system for customizing the environment.

Back-end Tools

Programming language

- **Java and JSP**

  In Online Vehicle Reservation System, java programming language is used for back-end development of the project.

Database

- **MYSQL**

  MYSQL is use for storing all the information required to the database in women safety alert system. It is used for performing CRUD operation such as create, delete and update data from the database as requested by the user.

Server

- **Apache**

  The Apache Software Foundation developed Apache, also known as Server, which is an open-source Java Servlet Container.

4.1.2 IMPLEMENTATION DETAILS OF MODULES

Modules of this system are listed below:

Vehicle Owner Module,

- Add Vehicle category

  In this module Vehicle Owner who is also an user of the system add vehicles. The vehicle owner start the action by clicking on Add-vehicle button where the Vehicle Owner will fill up the form about the vehicle he/she is thinking of renting in this system and once the form is filled and clicks the add button the vehicle is available for user to book.

User Module,

- Booking category

  User once clicks the get a quote button and then fills the information about the date and location he/she will search the vehicle and the vehicles are shown in user interface by the system and among the vehicles the user selects the vehicle and can book the vehicle by simply pressing the book button.

Register Module,

In register module, we have implemented the Vehicle Owner register and User register as we have two types of users in this system. They can register in to the system by entering all the details such as name, email, contact and password. And then can login to the system using valid email and password.

Login Module,

In login module, we have implemented Vehicle Owner login and User login as this system is the two-user based system. Both Vehicle Owner and User can enter in ti the system using valid username and password.

4.2 TESTING

Testing is done to check the behavior of a complete and fully integrated software product based on the software requirement specification document. For the application or website to be deployed it has to be tested. Hence test cases will be written to test this application. There are many types of test to be carried out in a web application from performance, functionality, database loading time, response time, server time, handling user's action and many others. We will not carry out all types of test for the application considering the time scale to present this project. Hence performance check related to upload time, memory usage will be part of a future test. We will focus the test cases on functionality, security and performance. So that various types of testing procedures were performed in order to check the working mechanism and correctness of the system.

We ran test on various browsers making sure that the application produces the same result and is stable on the major popular browsers. Finally, the last test will be the checking of all input source such as query strings, web services and textboxes. This will help prevent cross-side scripting attacks and SQL injection

System testing is done by giving different training and testing datasets. This test is done to evaluate whether the system is providing accurate summary or not. During the phase of the development of the system, our system is tested time and again. The series of testing conducted are as follow:

4.2.1 TEST CASES FOR UNIT TESTING

System testing is done by giving different training and testing datasets. This test is done to evaluate whether the system is providing accurate summary or not. During the phase of the development of the system, our system is tested time and again. The series of testing conducted are as follow:

Admin Login Table,

Table 4.1 Test Case of admin login of OVRS

S.N	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
1	Admin enters a wrong username/password	Username: admine Password: admine	Invalid username or password	As expected	Pass
2	Admin enters correct username and password	Username: admin Password: admin	Logged in to Admin Page	As expected	Pass

Vehicle Owner Registration Table,

Table 4.2 Test Case of vehicle owner registration of OVRS

S.N	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
1	Enters invalid Name, Email, Password, Confirm-password, contact no. and click register button	Full name: Owner owner Email: owner@gmail.com Password: owner1 Confirm password: owner1 Contact no.:	Please enter your phone number	As expected	Pass
2	Enters invalid Name, Email, Password, Confirm-password, contact no. and click register button	Full name: Owner owner Email: owner@gmail.com Password: owner1 Confirm password: owner1 Contact no.:1234567890	Redirect to Owner login page	As expected	Pass

Vehicle Owner Login Table,

Table 4.3 Test Case of vehicle owner login of OVRS

S.N	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
1	Vehicle Owner enters a wrong Email and Password	Email:own@gmail.com Password: owner5	Invalid Email or Password	As expected	Pass
2	Vehicle Owner enters correct Email and Password	Email: owner@gmail.com Password: owner1	Logged in to owner page	As expected	Pass

User Registration Table,

Table 4.4 Test Case of User registration of OVRS

S.N	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
1	Enters invalid Name, Email, Password, Confirm-password, contact no. and click register button	Full name: User user Email: User@gmail.com Password: user12 Confirm password: user12 Contact no.:	Please enter your phone number	As expected	Pass
2	Enters invalid Name, Email, Password, Confirm-password, contact no. and click register button	Full name: User user Email: User@gmail.com Password: user12 Confirm password: user12 Contact no.:1234567890	Redirect to Owner login page	As expected	Pass

User Login Table,

Table 4.5 Test Case of user login of OVRS

S.N	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
1	User enters a wrong Email and Password	Email: use@gmail.com Password: user15	Invalid Email or Password	As expected	Pass
2	User enters correct Email and password	Email: user@gmail.com Password: user12	Logged in to user page	As expected	Pass

4.2.2 TEST CASES FOR SYSTEM TESTING

Check system behavior,

- If the site launches properly with all the relevant pages, features and logo.
- If the user can register/login to the site.
- If the main features, such as deposit, withdrawal, fund transfer, transaction detail, balance inquiry, and so forth, function as expected.
- If the site works properly in the newest versions of all major browsers.
- If the content of pages is properly aligned, well managed and without spelling mistakes.
- If session is working as expected.
- If a user is satisfied with the site after utilizing it, or if the user does not find it difficult to utilize it.

Test Case for Add-Vehicle,

Table 4.6 Test Case of Add-Vehicle of OVRS

S.N	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
1	Vehicle Owner enters a invalid Daily fare	Manuafacturer:TATA Model:Nexon Daily fare:aaa From Date:05/10/2022 To Date:05/17/2022 Vehicle Current Location:BKT Description:	Please enter number	As expected	Pass
2	Vehicle Owner enters a valid Daily fare	Manuafacturer:TATA Model:Nexon Daily fare:100 From Date:05/10/2022 To Date:05/17/2022 Vehicle Current Location:BKT Description:	Redirent to Vehicle Management page and the added vehicle is displays	As expected	Pass

Test Case for Vehicle Deletion,

Table 4.7 Test Case of Vehicle Deletion

S.N	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
1	Vehicle Owner tries to delete an unbooked vehicle	View the details of vehicle and click on delete button	Vehicle get deleted and redirect to vehicle management page	As expected	Pass
2	Vehicle Owner tries to delete an booked vehicle	View the details of vehicle and click on delete button	Displays message "Vehicle already booked. Sorry, cannot delete vehicle."	As expected	Pass

Test Case for Search vehicle,

Table 4.8 Test Case of Search-Vehicle

S.N	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
1	User searches for vehicle without logging in	View search results and click on book this car button.	Redirects to user login page	As expected	Pass
2	Logged in User searches for vehicle	View search results and click on book this car button.	Procced to Booking Details page	As expected	Pass

CHAPTER: 5

CONCLUSION AND FUTURE RECOMMENDATIONS

5.1 Lesson Learnt / Outcome

Every project makes us to learn and gain the knowledge in different aspects. In the following project, we have learned lots of problem-solving skills and learn things like team work, finding the solution on our own, proper use of guidelines, communication and writing skills and management of team.

- **Problem Solving Skills**

  From this project, we have learned lots of problem-solving skills and also learned to recognize different errors occur in this system and solve it.
- **Writing Skills**

  We have learned how to prepare proposal and documentation related with project and also learned to use different case tools for use case diagram, schema diagram, data flow diagram, and ER- diagram and so on.
- **Time Management**

  The most important lesson learnt was management of time according to the complexity of the system components i.e: know which components to prioritize.

5.2 Conclusion

Hence, “Online Vehicle Reservation System” will be a very useful online portal for reserving vehicles for self-driving. It will also help the vehicle owners easily rent their vehicle without caring of the third party in between and directly co-ordinate with the person who will be driving the vehicle.

Since the application is online & totally web based, it will cost less for configuring a system to make the project up and running.

5.3 Future Recommendations

In the future this app will be helpful for all humans. The future plans for this app are as follows:

- Accurate location to the saved contact which helps to track the person location.
- Remove bug of users facing website crashes while using it.
- OTP (One Time Password) feature can be added to verify the email address.
- Online Payment functionality will be a great add-on.

We will tie up with the communication and it will be easy for the users. It will be easy to track vehicle location easily. We will try to implement these things in future. We will focus on security issues and helps to solve security issue. This website will be user friendly to all platforms.

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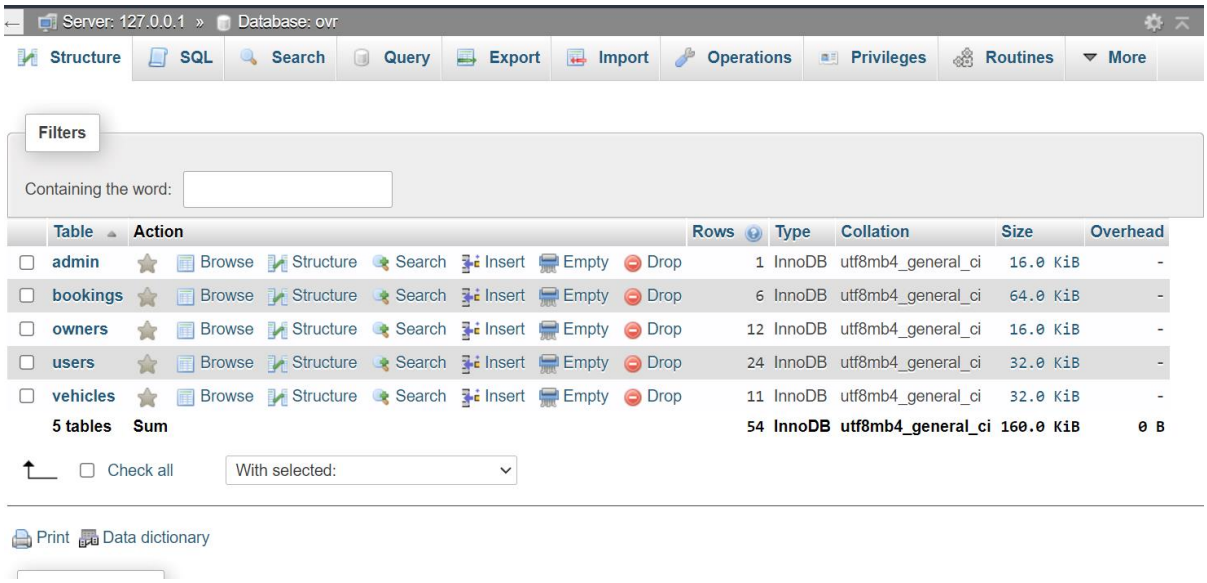
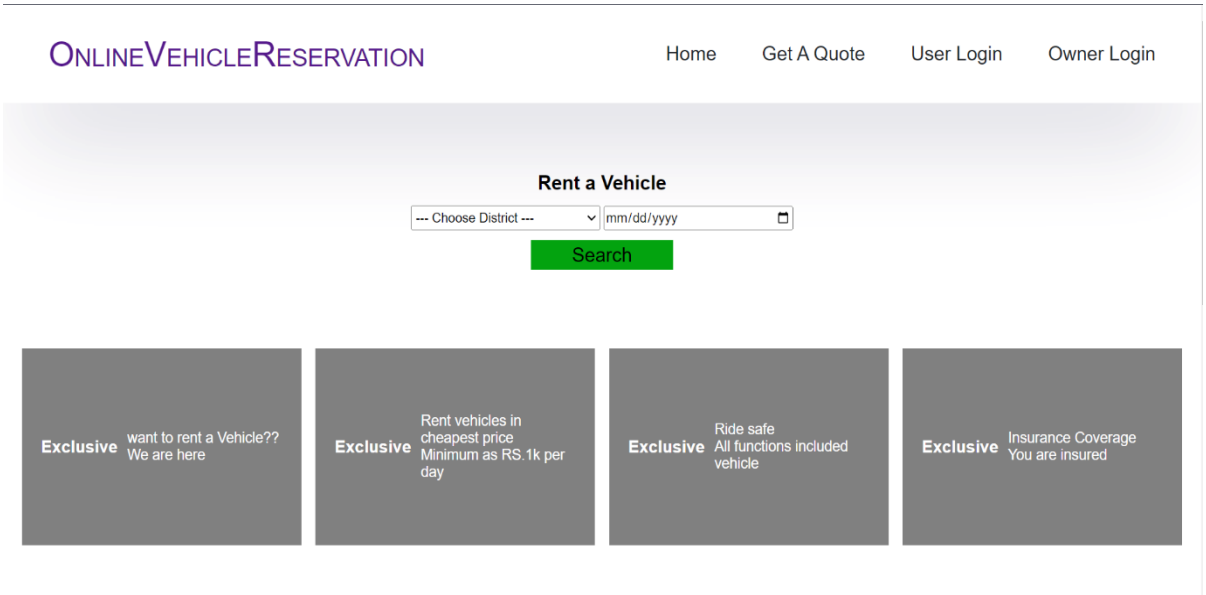
APPENDIX: SYSTEM SCREENSHOTS

- **Database Overview**

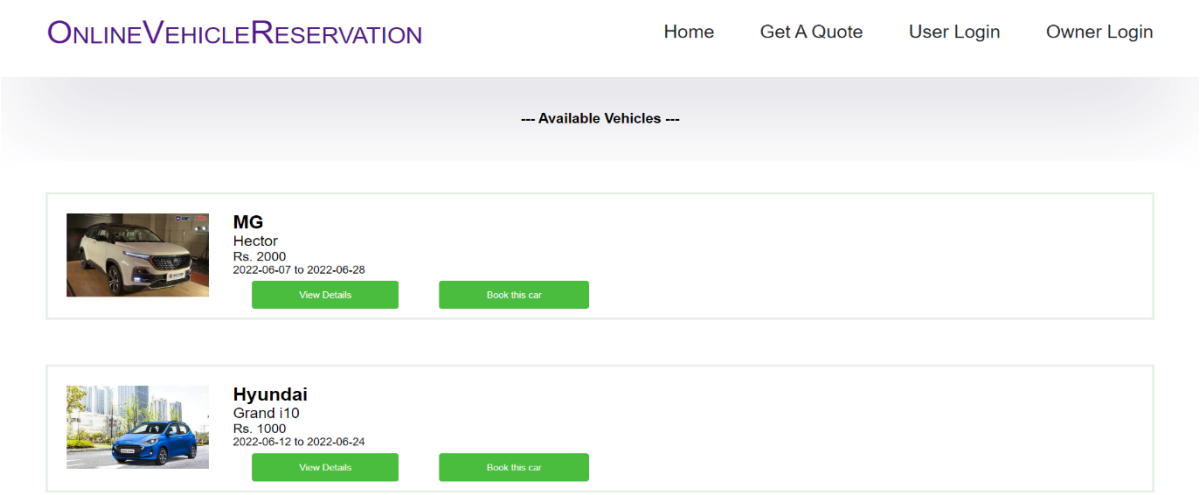


- **Frontend Overview**

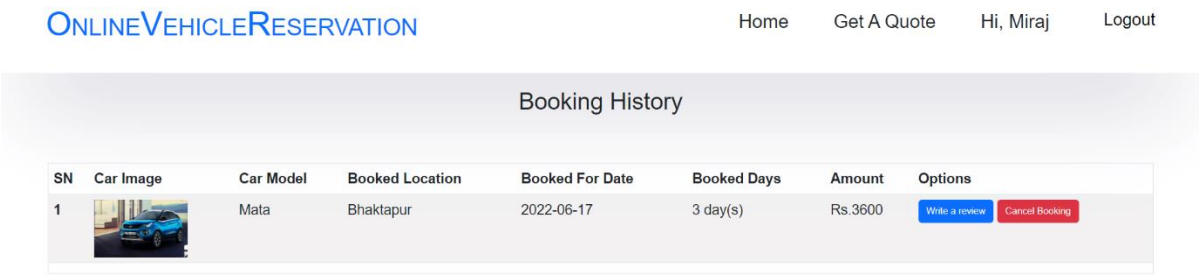
- Home Page (Index)



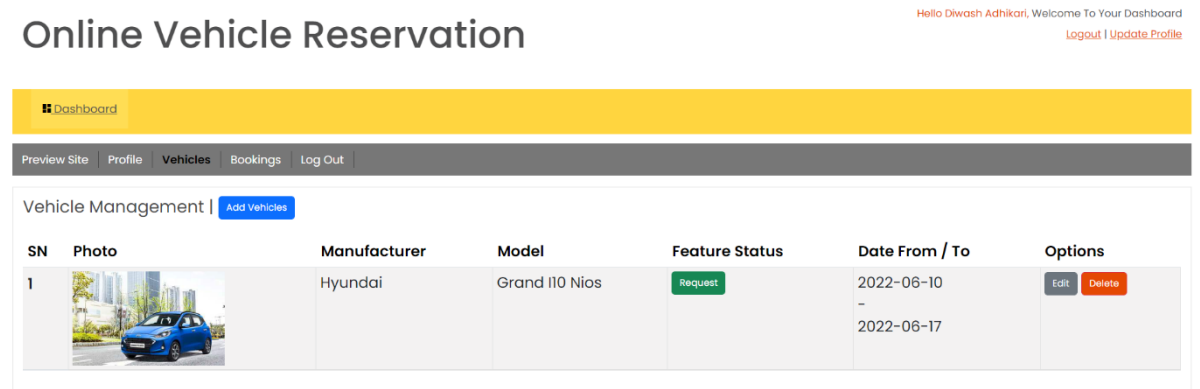
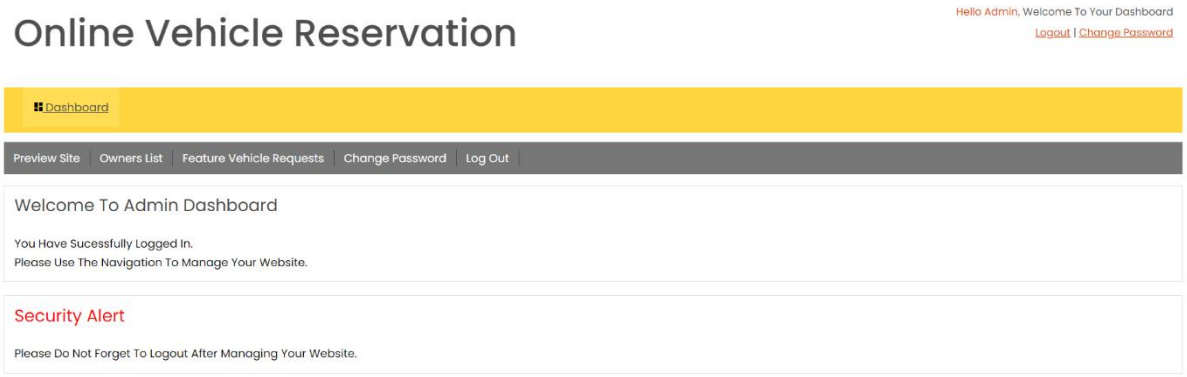
- **Vehicle Search Result**



- User Dashboard



- Owner Dashboard



- Admin Dashboard