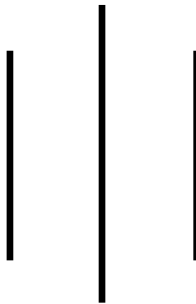# LA GRANDEE INTERNATIONAL COLLEGE

## Simalchaur, Pokhara Nepal

A Mid term Progress Report

On

## "Car Rental System"

**Submitted to:**

Bachelor of Computer Application (BCA) Program

In partial fulfilment of the requirements for the degree of BCA under

Pokhara University

**Submitted by:**

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# TABLE OF CONTENTS

# Table of figures

# 1. Introduction

A car rental management system is a crucial software solution designed to streamline and automate the operations of car rental businesses. This system facilitates the efficient management of vehicle fleets, reservations, customer information and overall business process is as the car rental industry continues to grow an evolve, the need for a robust and user-friendly software solution become increasingly evident.

Car rental services have become an essential component of modern transportation solutions, serving various purposes from personal trips to business travel. This project aims to offer a comprehensive, user-friendly, and efficient solution for both customers and rental agencies.

The project is built using VB.NET and starts with a login system to provide access. Users can then add, view, edit, remove, and book cars. When adding cars, users must input details like the license plate number, car ID, car name, colour, and daily rental price. Additionally, users can add customer and admin profiles. All bookings and booking details can be efficiently managed through this system, saving time and effort.

## 2. Problem Statement

Car rental businesses face a myriad of challenges in their day-to-day operations. These challenges include:

➢ Inefficient manual processes

➢ Fleet management

➢ Reservation conflicts

➢ Customer management

➢ Security concerns

## 3. Objectives

➢ To create an intuitive and user-friendly booking interface for customers, ensuring swift and hassle-free rental vehicle reservations,

➢ To establish a comprehensive database for storing car details, ensuring accessibility at any given time,

➢ To maintain a user database with information from registration, streamlining the process of vehicle rental and reservations, eliminating the need for time-consuming phone calls and waiting for available vehicles.

# 4. Requirement Analysis

We collected several requirements for project from our primitive research, website visits, and interview to the concerned personnel and their experiences regarding the concepts of its development. Here, we analysed, documented, validated, and managed software or system requirements.

## 4.1 Functional Requirements

The description of the services that the system should provide to the user. Some functional requirements are:

- **Users Login**

  For log in people must have verified account.

- **Add Car**

  The user can enter new car information in the add new car section.

- **Edit Car Details**

  The user can edit/update the car information in the edit section.

- **Delete Car Details**

  The user can delete their car information using the delete car option.

- **Admin Login**

  Admin can enter the username and password to get access of the application.

## 4.2 Non-Functional Requirements

Non-Functional requirements are set of specifications that describe the system's operation capabilities and constraints and attempt to improve its functionality. Some non-functional requirements are:

- **Usability**

  The system should provide easy access to the users without any barriers and should be able to support multiple languages.

- **Portability**

  The system should be able use on different platforms without change in its behaviour or performance.

- **Security**

  The system should be secured, and it should not show customer's name, password, and their other date to any other users.

# 5. Methodology

A system development methodology in software engineering is the main guidance for constructing planning and controlling the process of developing an information system. Here, we are going to the block car rental management system using iterative method. An iterative method in software development is an approach that involves breaking the project into smaller, manageable iterations or cycles. Each iteration involves the process of planning, designing, implementing, testing, and delivering a functional part of the software. Iterative development allows for continuous improvement and adaptability throughout the project.

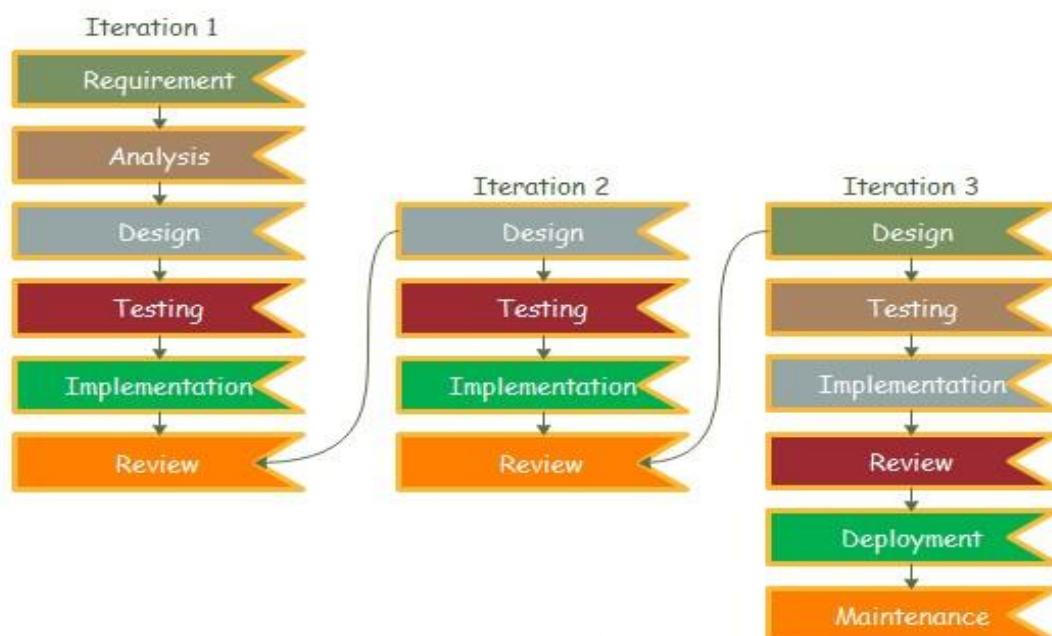The following illustration represents different phases of iterative method:



Figure5.1Iterative Model

### i. Requirement and planning stage

During this phase, the business requirements are collected, and an analyst determines whether they will be met within the allocated budget. It is used to layout the business needs in detail and the System information (hardware or software) are gathered and evaluated for feasibility.

### ii. Design

In this phase, the project team gets the complete set of requirements to begin their work in a particular direction. They use different figures like a data flow diagram, class diagram, activity diagram, state transition diagram, etc to get a clear understanding of the software design and help them proceed with the development.

### iii. Coding

The actual construction of the system begins at this point in the project. This stage will be guided by the analysis and design resulted from the Design Stage. All the requirements, planning, and design plans are executed and coded. The developer will implement the chosen design using predetermined coding and metrics standards.

### iv. Testing

This step involves testing the current build iteration to a set of standards and norms to see if it meets them. Performance testing, stress testing, security testing, requirements testing, usability testing, multi-site testing, disaster recovery testing, and so on are all examples of this type of testing.

### v. Evaluation

This is the last stage of the iterative model. After all the processes are complete, the system constructed up to this point is thoroughly evaluated. The system is examined by the development team, stakeholders, and other teams responsible for developing the project to see if the outcomes satisfy their expectations.
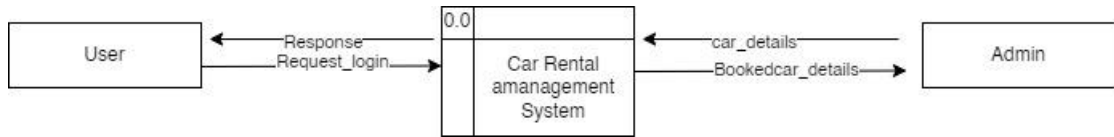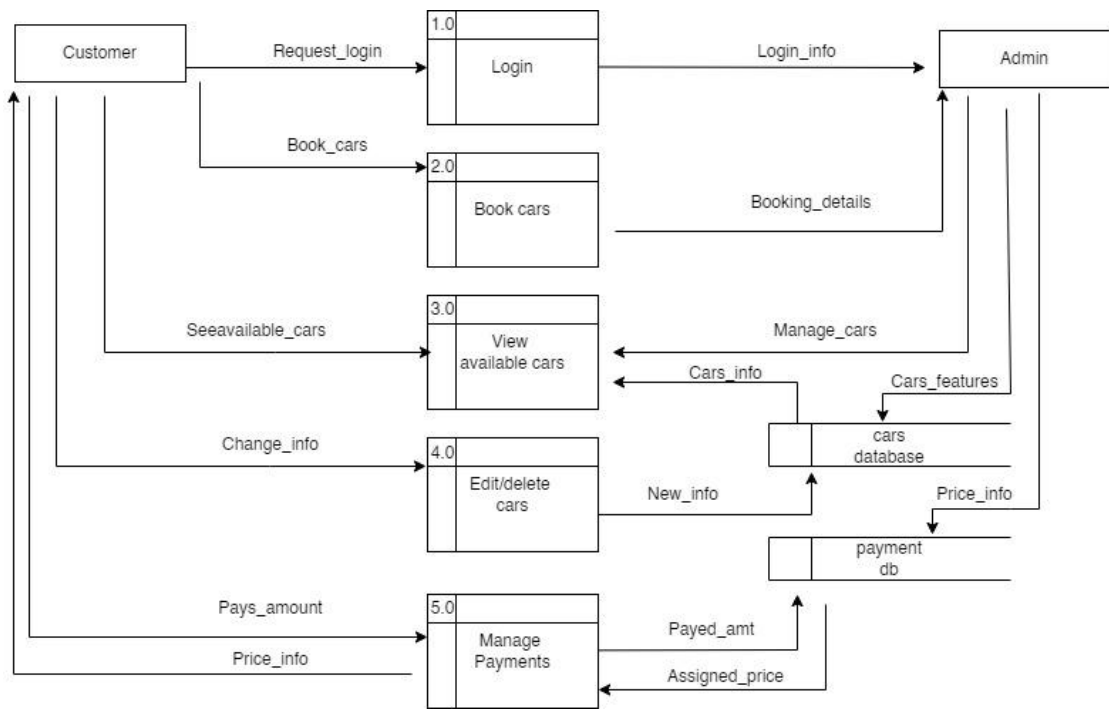
# 6. Data Flow Diagram
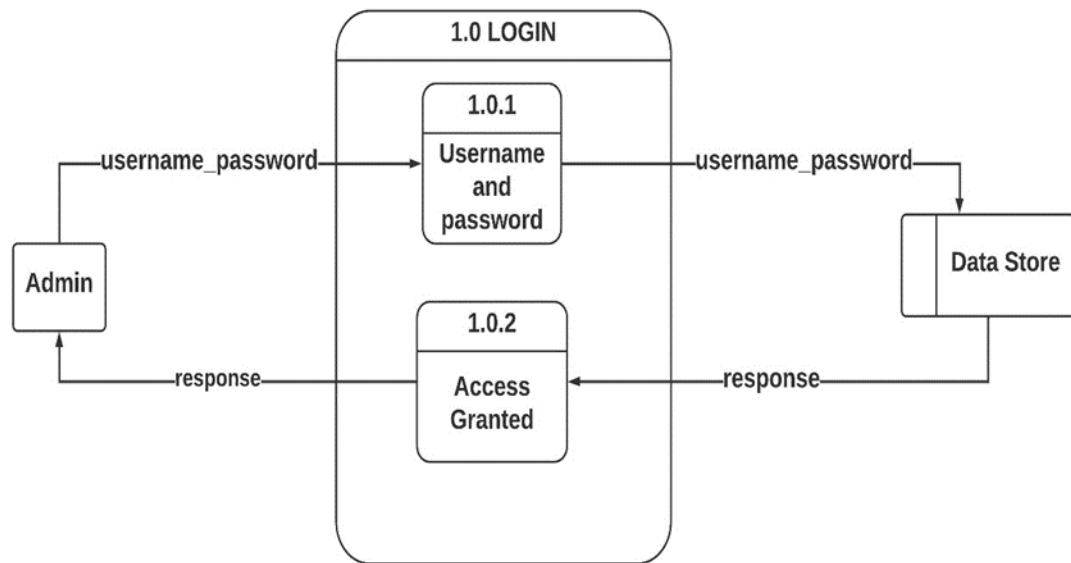


Figure 6.1Level-0-DFD



Figure 6.2Level-1-DFD

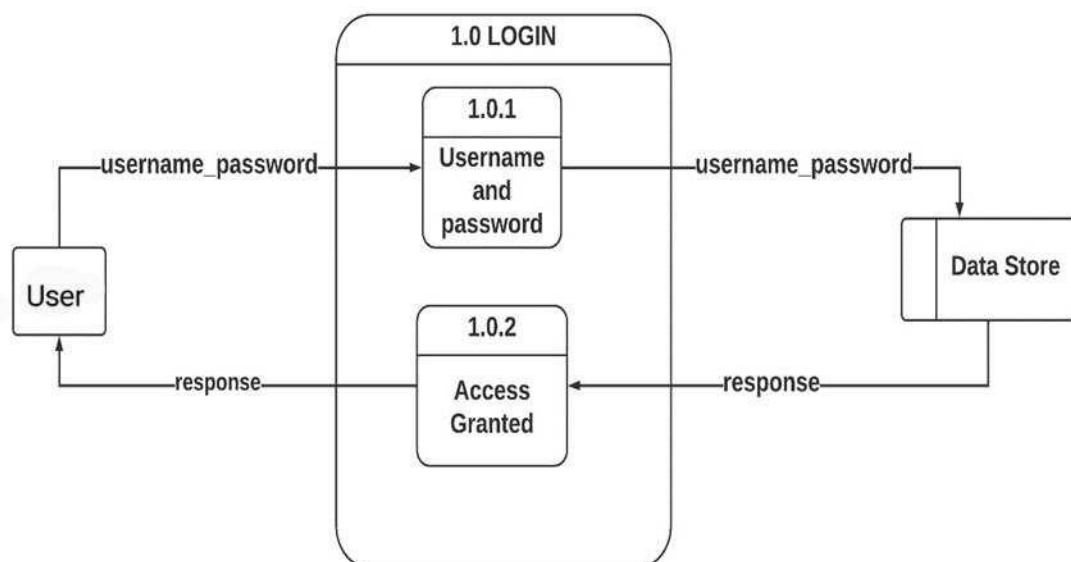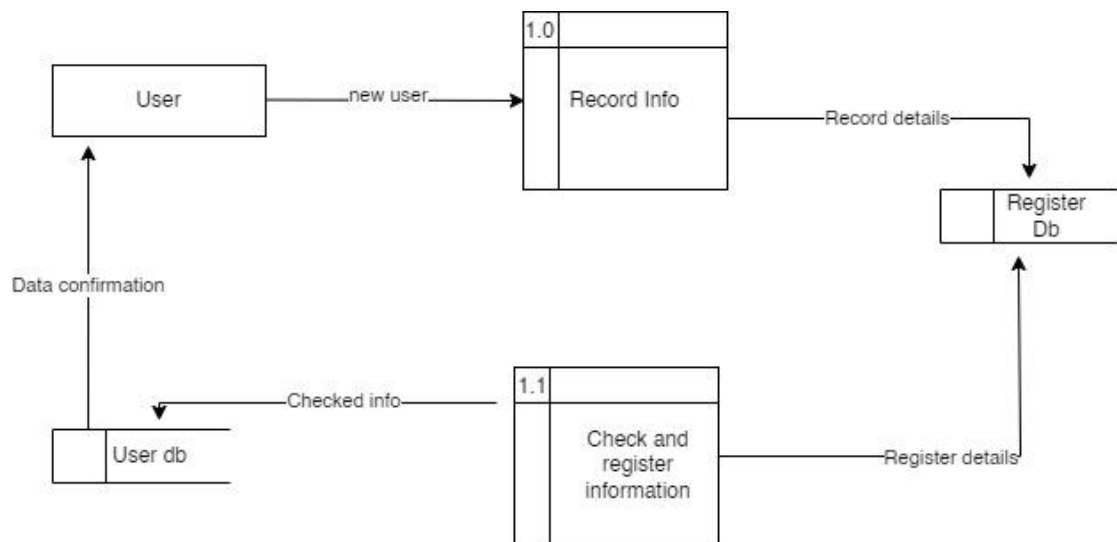Figure 6.3Level-2-DFD Admin Login



Figure 6.4Level-2-DFD User Login

Figure 6.5Level-2-DFD Registration
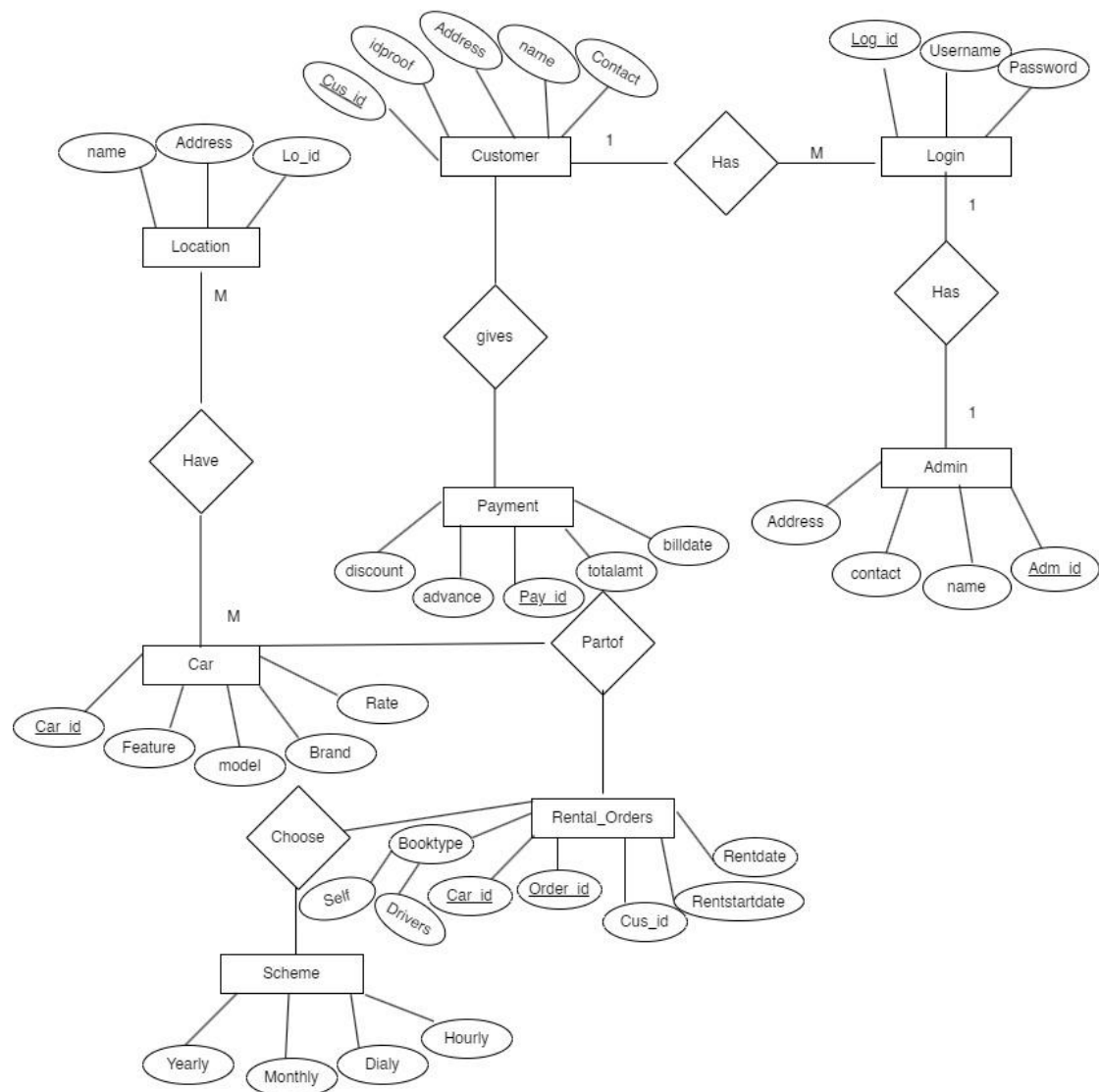
# 7. ER-Diagram



Figure 7.1Er-diagram
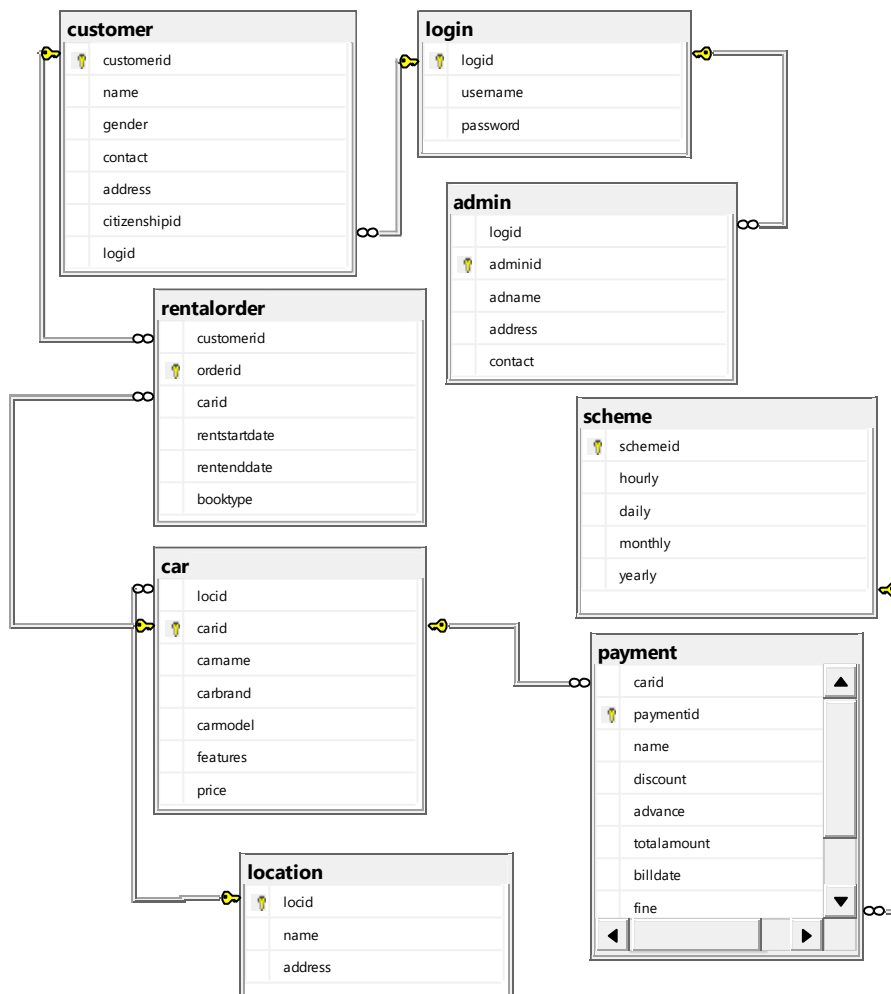
# 8. Database Diagram



Figure 8.1Database diagram
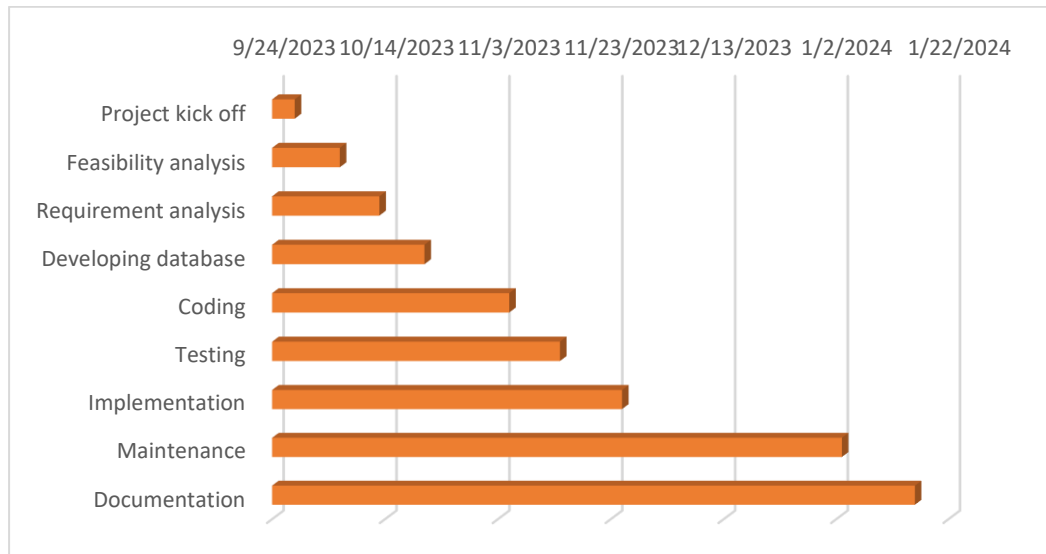
# 9. Project Gantt Chart/ Timeline Chart



Figure 9.1Gantt chart

# 10.  Deliverables

When we develop a software application, we face many problems by maintaining the features of it properly, but the system can't be perfect there may be some problems but after developing the software we always expect a better output. Similarly, by making this car rental system we expect the output equal as the hard work put in it.

With the completion of the project, we will obtain a system where we can add, delete, edit, store and update car information.

- **Testing and Quality Assurance**

  Test cases, test plans, and test reports to ensure the system functions correctly.

- **Deployment Plan**

  A deployment plan outlining how the system will be rolled out to production.

- **Maintenance and Support Plan**

  A plan for ongoing maintenance and support of the car rental system, including updates and bug fixes.

- **Database**

  Database schema and design to store information about cars, customers, reservations, and transactions.

- **Payment Integration**

  Integration with payment gateways for processing customer payments.

# 11.    Progress Report

**Development Status:**

User Interface: The GUI design has been completed using VB.NET forms, focusing on a user-friendly layout for easy navigation.

**Functionalities:**

Core functionalities like user authentication, creating account have been implemented and are being tested.

**Database Integration:**

Successfully integrated the database to store user data.

**User Module:**

Developed user registration and login.

# 12. Conclusion

This project will improve the management of rentals and booking of cars. This system is developed to overcome the problems faced using the manual way. It acts as agent for car owners to rent out their car and the company can also earn profit from each of the transaction.

In conclusion, a Car Rental Management System is crucial for the modern car rental industry. It not only addresses the existing challenges but also positions businesses for growth and success in a competitive market. By adopting this technology, car rental companies can provide better services, reduce costs, and maintain a strong competitive edge.

# 13.    References

- Dan Rahmel, "Database programming with-Visual Basic 6", BPB Publication
- Evangelos Petroutsos, "Mastering Visual Basic 6", Asia Publication

## Web sites:

- www.vbhelper.com

- www.programmersheaven.com