



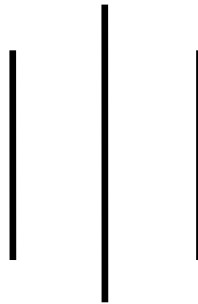
## **LA GRANDEE INTERNATIONAL COLLEGE**

**Simalchaur, Pokhara Nepal**

Project

On

**“Car Rental Management”**



**Submitted to:**

Bachelor of Computer Application (BCA) Program

In fulfilment of the requirements for the degree of BCA under

Pokhara University

**Submitted by:**

<b>Name:</b>	<b>Course</b>	<b>Semester</b>	<b>P.U. Registration Number</b>
Akriti Chapagain	BCA	4 <sup>th</sup>	2019-1-53-0104
Navina Budhathoki	BCA	4 <sup>th</sup>	2019-1-53-0123
Chham Kumari Thapa Magar	BCA	4 <sup>th</sup>	2019-1-53-0112

**Date: 03/11/2022**

## ACKNOWLEDGEMENT

We would like to express our deepest gratitude to the department of Bachelor in Computer Application, Pokhara University, LA GRANDEE International College for providing us with an opportunity to work on a project as a part of our syllabus.

It is an honor to express our gratitude to our project supervisor **Er. Rishi Saran Khanal** for his constant support, motivation, and guidance and give the knowledge on how to prepare the report throughout the project. His constant feedback and suggestions throughout the development of this project helped us to cope with different challenges.

Our faculty teacher **Er. Rishi Saran Khanal** and **BCA** coordinator **Mr. Ramesh Chalise** for encouragement and constructive suggestions that helped us in the preparation of our project. We appreciate **Er. Sujan Tamrakar** comments regarding the software as an external supervisor.

We are grateful to all our teachers for their suggestions and inspirational lectures that paved us for the completion of the project.

problems we faced during our project without whom the project wouldn't have been successful.

Sincerely,

Akriti Chapagain

Chham Kumari Thapa Magar

Navina Budhathoki

## **DECLARATION FOR**

**“Car Rental Management”**

### **STUDENT’S DECLARATION**

We hereby declare that we are the only authors of this work and that no sources other than the mentioned here have been used in this. We assure you that the work we present here is unique to ourselves and resemblances to another similar project are purely coincidental.

Akriti Chapagain (PU Exam Roll no): 2019-1-53-0104

Chham Kumari Thapa Magar (PU Exam Roll no): 2019-1-53-0112

Navina Budhathoki (PU Exam Roll no): 2019-1-53-0123

Program: BCA, 4<sup>th</sup> Semester

Date: 11/3/22

## **SUPERVISOR'S DECLARATION**

I hereby declare that the project entitled “Car Rental Management” has been carried out under my direct supervision by Akriti Chapagain (2019-1-53-0104), Chham Kumari Thapa Magar (2019-1-53-0112) and Navina Budhathoki (2019-1-53-0123) during their fourth semester for the fulfilment of the requirements for the degree of **BCA (Bachelors of Computer Application)** program under **Pokhara University**.

---

**Er Rishi Saran Khanal**

(Project Supervisor)

Date: 03 November 2022

## **ABSTRACT**

This project is intended for use by a car rental company that specializes in renting cars to customers. It is a desktop-based system that allows customers to view available cars, register, view profiles, and book vehicles. The motivation for this project stems from the desire to make the system faster, easier to use and manage, more reliable, and more informative, as well as the growing popularity of online-based systems and the need to investigate technology that the company could use to improve its services to customers. The interface of car rental management software is very user friendly. As a result, users will find it very simple to work on. Using this system, administrators can manage their car rental, payment, and booking..

### **ABBREVIATIONS**

CRMS	Car Rental Management Software
NO	Number
&	And
OLEDB	Object Linking and Embedding, Database
IT	Information Technology
DFD	Data Flow Diagram
DBMS	Database Management System
STLC	Software Development Life Cycle
VB	Visual Basic

## TABLE OF CONTENTS

ACKNOWLEDGEMENT .....	ii
STUDENT'S DECLARATION .....	iii
SUPERVISOR'S DECLARATION .....	iv
ABSTRACT.....	v
ABBREVIATIONS.....	vi
1. INTRODUCTION .....	1
2. PROBLEM STATEMENT .....	2
3. OBJECTIVES.....	3
4. BACKGROUND STUDY.....	4
5. METHODOLOGY.....	5
6. DATA FLOW DIAGRAM .....	6
7. FLOWCHART.....	7
8. PROJECT GANTT CHART/ TIMELINE CHART .....	8
9. REQUIREMENT DOCUMENT .....	9
10. DEVELOPMENT .....	11
11. FUTURE ENHANCEMENTS.....	13
12. CONCLUSION.....	14

**LIST OF FIGURES**

Figure 1: Prototype Model (Used Methodology).....5

Figure 2: 1 – Level DFD of Car Rental Management System.....6

Figure 3:Flowchart of Car Rental Management System.....7

Figure 4: Project Gantt Chart/Timeline Chart.....8



## **1. INTRODUCTION**

A car rental system is a desktop based platform that opens up new opportunity for company. It allows company to manage car rental business, plan work, streamline routine operations, and receive details reports.

It helps the user to search for available cars, view profile and book the car for the time period. It has a user-friendly interface which helps the user to check for cars and rent them for the period specified.

The rental cars will be categorized into economy, premium etc. Based on the types of cars required by the customer, the users shall be able to make bookings. This car rental system makes the booking easy. It saves time.

Renting a car assists people to get around even when they don't own a vehicle at all. The individual who wants to rent a car must first contact the car rental company for the desire vehicle. Database of this project is in OLE DB which keeps it safe from any security threat.

This computerized solution is fully functional and flexible. It is very easy to use. This system helps to increase the efficiency of the management at offering the quality services to the customer. It provides custom features development and support with the application.

## **2. PROBLEM STATEMENT**

These days everything gets easier and smarter. Many people want safe and computerized working which saves a lot of time. The main problem currently faced by most Car Rental company is the rigidity maintained by outdated systems as paper bills, which leads to unorganized tasks and makes a complete mess of the workplace. So, for this reason different system has been born. They made the life of people very effective. But there are different features that haven't been created till now for the users. The individual who needs a car must visit the company and use the car rental system for easy and fast selection. This system increases and simplifies the car and staff management.

In existing system there are several drawbacks which are listed below:

- a) Maintaining the records leads to error prone and required more manpower and it consumes more time.
- b) Processing and storing the data were disorganized and were less efficient.
- c) People need to calculate the whole amount of while renting a car(s)
- d) Need a lots staffs because it is fully dependent upon the manual system.

So to solve these problems we built the Car Rental Management System which encounters such problems easily, data can be saved without loss. Our System is safe and highly secure transaction functions.

### **3. OBJECTIVES**

To solve all the problems that we discussed earlier we built the **“Car Rental Management System”**

The objectives of our Project are as follows:

- a) Assist the users to choose cars according to their budget and other requirements and rent the car in an easier and faster way.
- b) To make system user task easier as well as faster.
- c) Make easy and secure payment.
- d) To overcome problem that usually occur in Car Rental Company where people have to make long queue while renting a car.
- e) To Manage the Car Related information like details of Car information, customer's information, returning the car, borrowed details.

## **4. BACKGROUND STUDY**

Initially, we all started with finding a topic that will have some scope and is feasible to work with as a beginner. Our key thinking was to develop a system that could solve problems people are facing on a day-to-day basis. We were predefined if the system does not solve the problem then we are not going to work on the system. As a team, we all pitch different ideas, opinions, and plans but initially. One of our teammates pitched the idea of Car Rental Management system. For every modern-day system, the key and important factor is scalable and security as data is the most important aspect. So We came up to build a Car Rental Management System which resolve all the problem that occurs while renting a car. In which customers will be able to reserve their vehicles from anywhere in the world due to the Car Rental System. To book the car customers need to provide the details about their information like Name, address, date of renting, brand of car, by filling in their person information. Our system is fully integrated. It effectively and efficiently automated manual procedure. Customers are aided by this automated method, which allows them to fill in the specifics according to their needs, It contains information on the sort of car they want to hire as well as the location. The goal of our system is to create a Desktop based application where customers can book their automobiles and request services from anywhere in the world.

## 5. METHODOLOGY

For this project, the Software Development Life Cycle (SDLC) Methodology that we have decided on using “**Prototype model**” to develop the “**Car Rental Management Software**” as a digitalized Car Rental software based on the fact that our requirements are certain and will change with time.

Advantages of prototype is that, all issues or errors can be identified very previous ,if there is any main functionality missing then it can be easily detected, furthermore All users are energetically engaged in the development of any application or software, and while using this model then users fast feedback is accessible conducive to best resolutions.

The image below shows the process involved in Prototype Model:

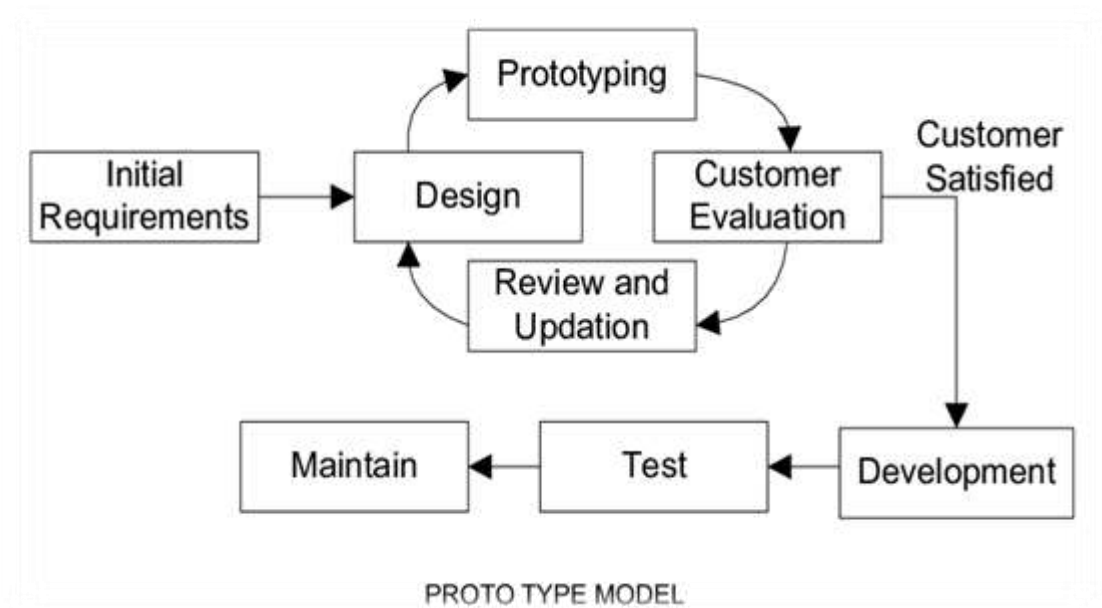


Figure 1: Prototype model

## 6. DATA FLOW DIAGRAM

A data flow diagram (DFD) is a way of representing a flow of a data of a process or a system (usually an information system). The DFD also provides information about the outputs and inputs of each entity and the process itself. A data flow diagram has no control flow; there are no decision rules and no loops.

The 1 – Level DFD is the one of the basic forms of DFD. It aims to show how the entire system works at a glance. There is only one process in the system and all the data flows either into or out of this process.

The 1 – Level DFD of Car Rental Management Software is given below:

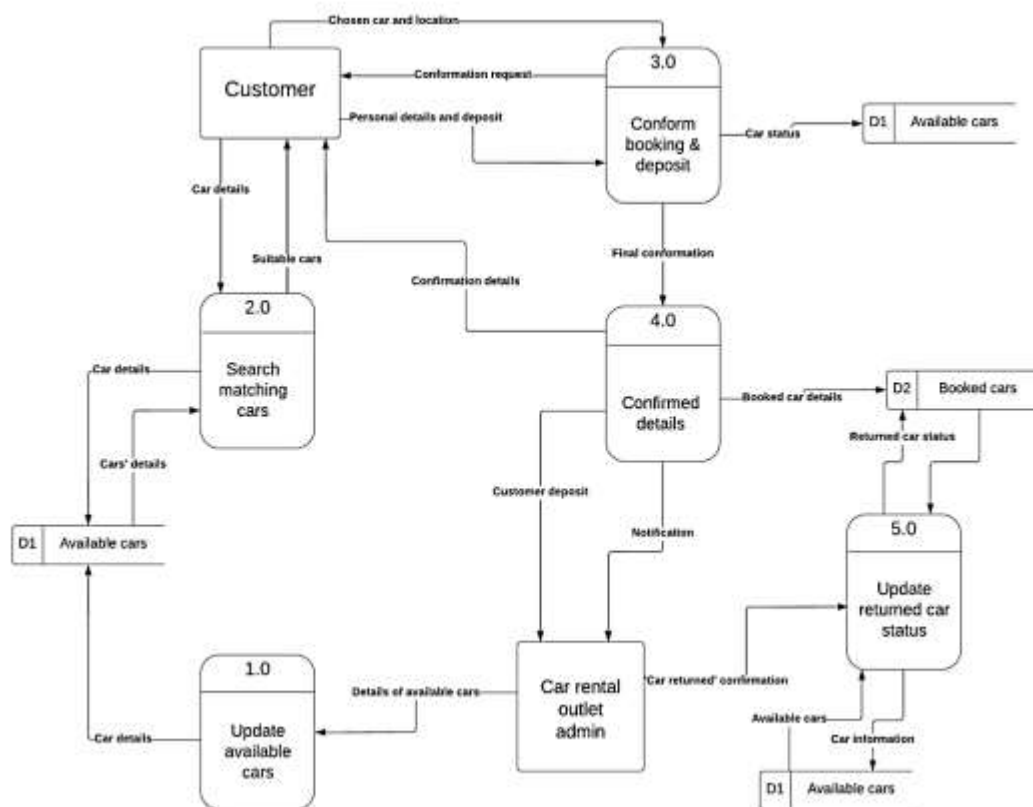


Figure 2: 1 – Level DFD of Car Rental Management System

## 7. FLOWCHART

A flowchart is a formalized graphic representation of a logic sequence, work or manufacturing process, organization chart, or similar formalized structure.

The purpose of a flow chart is to provide people with a common language or reference point when dealing with a project or process. Flowcharts use simple geometric symbols and arrows to define relationships. In programming, for instance, the beginning or end of a program is represented by an oval. A process is represented by a rectangle, a decision is represented by a diamond and an I/O process is represented by a parallelogram.

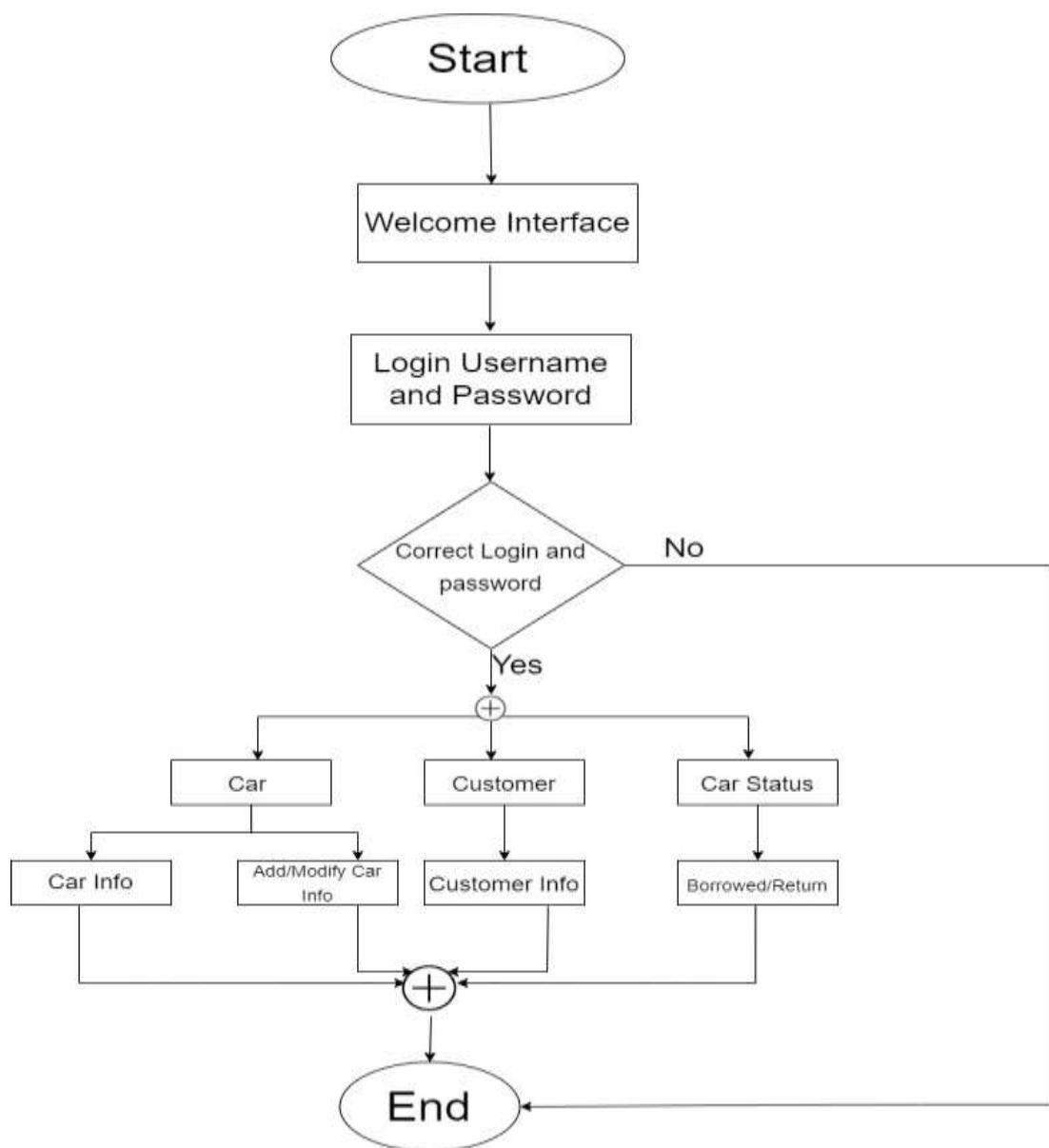


Figure 3: Flowchart of Car Rental Management System

## 8. PROJECT GANTT CHART/ TIMELINE CHART

The Gantt chart below shows the schedule planned for developing the “**CAR RENTAL MANAGEMENT SYSTEM**” following Prototype Methodology. Thus, this project would be carried out in steps with proper panning in each step, best effort would be applied to finish this project before deadline.

It also shows the time schedule description and tasks performed throughout the completion of project from the day of starting the project until it was finished in the horizontal bar below:

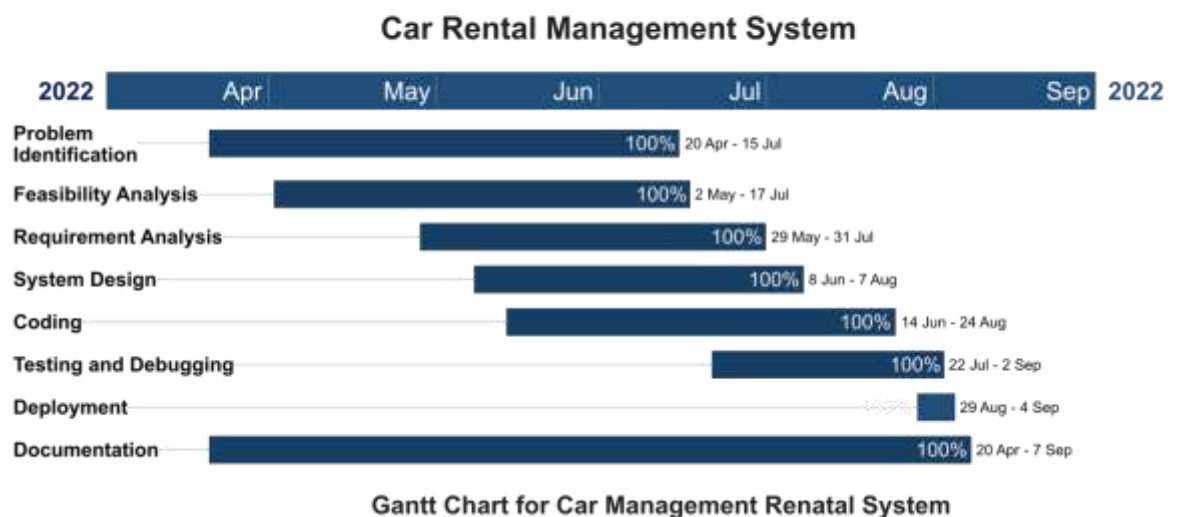


Figure 4: Figure of Gantt chart



## 9. REQUIREMENT DOCUMENT

A project cannot be completed without having any requirements. Before developing a program some requirements need to be known so that the program can be developed in the way it should be developed. By studying the requirements it can be implemented on the program then. The main purpose of our project '**Car Rental Management System**' is to help the client in his business sector. '**Car Rental Management System**' is developed to meet the expectations of the client. To meet those expectations, a requirement document is needed.

Requirements help communicate and define business needs and problems. Requirement document consists of requirement gathering, what is needed for costumers, end-users, administration's problems to be solved. Using requirement document helps to find out the error, estimates time and help to prevent failures.

The benefits include:

- **Alignment:** So before developing our project we prepare the requirement document and show it to our client. And because of the document, we were able to show the client about the project and his needs and requirements are matched. Due to the requirement document, we were able to align our views and ideas with the client.
- **Preparation:** The requirement document makes it a lot easier in estimating budget preparation and timelines.
- **Direction:** Requirement document provides us with the proper information for designing, developing, helps us to get question answers.
- **Efficiency:** With the requirement document, we can get a proper plan before going on coding and designing.
- **Productivity:** With known requirements, we can make our project more productive as we won't keep any unnecessary features that make us redo the work again.

The best way to create a requirement document is by using a requirement matrix that prioritizes the requirements.

S.N.	Requirement modules, system, and features	Description for the modules	Priority(High, Moderate, Low)	Remarks
1.	Login Module	For login users need to enter the correct username and password	High	Akriti worked on the login module.
2.	Car Management	In this module we can add cars remove and edit the car details.	High	Chham Kumari Thapa Worked on this module.
3.	System designing	Designing of the Flowchart modules and DFD modules	High	We all together involved to make this module
4.	System Testing	After coding and maintaining the all the modules we tested whether the program worked properly or not.	High	Akriti did the system testing
5.	Car Booking, returned, borrowed	To book the cars according to customers, records about details of car returned date and borrowed.	High	Cham, Navina and Akriti worked together to make this module.

## 10. DEVELOPMENT

Project development is the process of planning and allocating resources to fully develop a project or product from concept to go live. It typically consists of five phases: discovery, allocation, kick-off, quality assurance, review and report.

Development is essentially a road map, an action plan that provides the guidance needed to develop and build effective programs. While developing the project '**Car Rental Management System**' we followed the Prototype model. Prototype models work best where the requirements are rigid which we thought would be the best for our project.

We have used Visual Basic as IDE for our project. With its easy and friendly interface and tools as well as we were quite more familiar with this IDE than other various IDEs, we went with this IDE. The most important thing factor for using this IDE is it shows the result of compilation in a very understandable way which helps to find all the bugs and errors.

For documentation of a project, we have used MS-Access, which allows us to made documentation easily and properly. For the Gantt chart, we use a web application called '**Office timeline**'. In the same way, we used draw.io to make flowcharts and data flow diagrams.

We also share various platforms like GITHUB, Microsoft Teams, Google Meet etc to communicate and so on, for better communication of the project. Among them, we were very much benefited from the use of Git&GitHub they help in tracking changes in any set of files, usually used for coordinating work among the team members collaboratively.

The following is the activities done by the team members:

S.N.	Name of the member	Work assigned	Remarks
1.	Akriti Chapagain	<ul style="list-style-type: none"> <li>•Coding of main modules.</li> <li>•System Testing</li> <li>•Debugging</li> <li>•Documentation</li> <li>•Database</li> </ul>	Mainly focused on Coding, testing, Documentation and database
2.	Chham Kumari Thapa Magar	<ul style="list-style-type: none"> <li>•Program Architecture</li> <li>•Support on Test Matrix.</li> <li>•Documentation</li> <li>•Coding on some modules</li> <li>• Time Management</li> </ul>	Helped in Coding, designing and testing some of the modules and debugging
3.	Navina Budhathoki	<ul style="list-style-type: none"> <li>• System Design</li> <li>• Review of the program</li> <li>• Designing</li> <li>• Documentation</li> <li>• Coding of front end development</li> </ul>	Mainly focused on designing the system, flowchart and DFD

## **11. FUTURE ENHANCEMENTS**

The project has a very vast scope in future. The project can be implemented on intranet in future. Project can be updated in near future as and when requirement for the same arises, as it is very flexible in terms of expansion. With the proposed software of database Space Manager ready and fully functional the client is now able to manage and hence run the entire work in a much better, accurate and error free manner. The following are the future scope for the project.

We can add more features in the near future like:

- a) We can make our system from Desktop based to web based.
- b) Bar code Reader based transaction system.
- c) Responsiveness can be used in multiple operating systems.

## **12. CONCLUSION**

The project “Car rental management system” has been developed as per the requirement specification. It has been developed using OLEDB server. The complete system is thoroughly tested with the availability of data and throughput reports which are prepare manually.

Design procedure and output reports are presented in this project report. This design is easy to understand that any new modules can be incorporated easily.

As the Project is over, there are many things that we learned from it. This project required a lot of research and hard work for successful completion of our work, every step was done by full effort.

This software helps to keep the record of all the cars available. This computerized solution is fully functional and flexible and can be updated or be modified according to the need.

## References

<https://github.com/aakrity17/VB.net>

<https://www.youtube.com/watch?v=qx4iyjOwqA0>

<https://www.youtube.com/watch?v=76RBo2o49mI>

<https://www.youtube.com/watch?v=qx4iyjOwqA0>

<https://github.com/topics/car-rental?l=c%23>