

A  
**Mini Project Report on**  
**CAR RENTAL SYSTEM**

*submitted in partial fulfillment of the requirements for the award of the  
degree of*

**S.Y. B. Tech.**

in

**Computer Science & Engineering**

*by*

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**BHARATI VIDYAPEETH'S COLLEGE OF  
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**YEAR: 2022-23**

**BHARATI VIDYAPEETH'S COLLEGE OF  
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**CERTIFICATE**

This is to certify that the project report entitled “**Online Car Rental System**” submitted by **Mr. Avinash Tanaji Vhanalkar (68), Mr. Dhanraj Annaso Patil(69), Miss. Anuja Annasaheb Pawar (71), Miss. Vaishnavi Kiran Kharbude (75)**, for the partial fulfillment of the requirement for the award of degree of S. Y. B. Tech. in **Computer Science & Engineering** to the **Shivaji University**.

This report is record of students’ teamwork carried out by them under my supervision and guidance.

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Place:

**Guide**

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Mrs. S.M. Mulla

**Ext. Examiner**

**Principal**

Dr. V. R. Ghorpade

## Acknowledgement

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## **ABSTRACT**

The Car Rental System is system in which the users can take a car on rent for the number of days he/she wants. Car Rental System provides the facility of booking the car online by login and registering through mobile devices or desktop.

Car Rental System plays a pivotal role in ensuring the smooth operation of car rental businesses and creating a positive experience for customers. Aspects of effective rental management, including car information management, car renting coordination, customer service, and technological integration. By implementing efficient strategies in these areas, car rental business owners can streamline operations, boost productivity, and enhance customer satisfaction.

User Login is a critical component of car rental management, encompassing the searching, booking a car, and making payments. Also the Admin login is challenging part of the system containing the adding car detail, updating, viewing the reports.

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## INTRODUCTION

The Car Rental System is designed to overcome the problem of the manual system of booking cars data and its details. This application will help to overcome the hardship faced while handling the large amount of data with the existing manual system. This software is supported to eliminate and reduce the inconvenience faced by this existing system which is totally based on the pen and paper usage.

The Car Rental System is the online office to book vehicles online inside hardly any snaps in a manner of speaking. A couple of individuals can't remain to have a vehicle, for those people this system ends up being outstandingly helpful. This framework incorporates different vehicles, according to the client request and solace it put in the request and got according to the pickup-sloping edge area inside the zone. Booking should be possible by means of network access as it were. The prior investigations demonstrated that management data system could be used to oversee vehicle rental, expected to quicken just as chronicling administrations to clients better and more secure, making it simpler when required whenever

This system is based on an admin as well as user based application with a provision of authentication for accessing the system. It is a secure system having a method which provides a username and password. The system provides to store product and account details with a unique identification number for further usage.

This application will help the business owner as well as customers to handle their data and use it for their benefit.

## **AN OVERVIEW OF EXISTING SYSTEM AND CHALLENGES IDENTIFIED**

Online car rental system mini project using C++ is a popular project among computer science students to develop their programming skills and gain a better understanding of how car system works. Useful resource which provides a comprehensive tutorial on how to build a online car rental system using C++. The tutorial covers various aspects of the project, including data structures, algorithms, file handling, and user interface design. Overall, the literature on car rental system mini projects using C++ emphasizes the importance of good design, modularity, and efficient data structures and algorithms.

Challenges identified:

**i) Slow process generation**

The process of manually booking a car is very slow process. It is also time consuming.

**ii) Technology Integration**

In manual process the digital technologies are not implemented like login and registration, digital transaction.

**iii) Security**

As in manual process there is no security for the personal information of the user like Id, Password, etc.

**iv) Marketing and Promoting**

Marketing is done face to face, so less number of people come to know about this business.

## **PROBLEM STATEMENT**

Design and develop Online car rental rental system using C++.

### **Why we selected this topic?**

In existing car rental system, there used to be lot of manual work to give the requested car on rent for people. All the tasks were handled manually with human interaction which was difficult to implement all the time. But now-a-days, there are many cab services like Uber, Ola, etc which deals with cab booking. Depending on this, it gave an idea to people to implement online car rental system. So, to overcome the existing manual car rental system, we have designed the online car rental system which requires less manual work compared to existing car rental system. Here, the customer has the option to select the desired car on rent along with the duration and can be able to view the rent for it. This system made people easy to understand and use date we find Cab Services incredibly easy to book, pay, or drop as they have formed their structures into helpful applications similarly as locales. So there is a need to change the arrangement of the Car Renting Service.

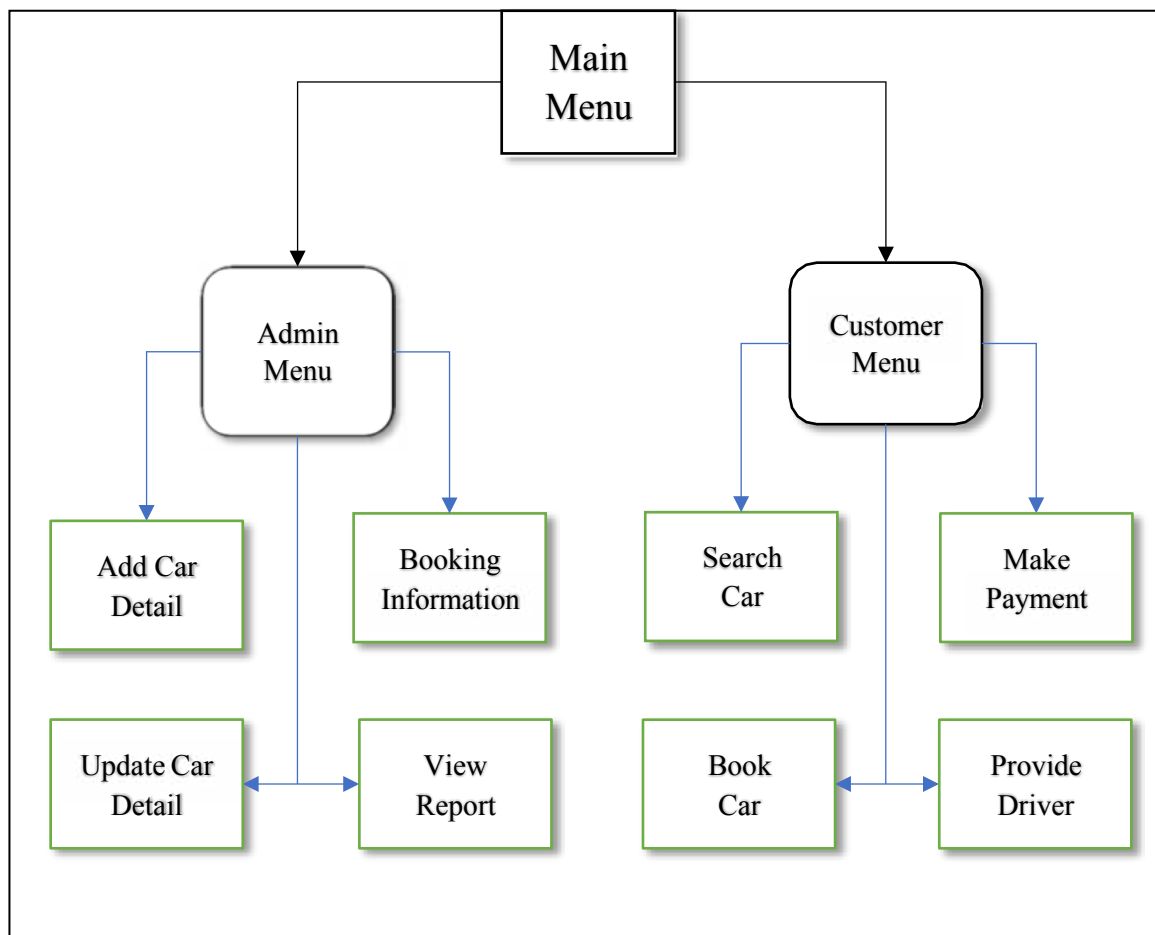
The main advantage of using C++ language to build this system is, as this language is a popular object-oriented programming language for developing car rental system due to its performance, efficiency, and support for low-level programming. The project can provide a challenging and rewarding learning experience, requiring problem-solving skills, attention to detail, and the ability to work in a team.



## OUTLINE OF THE PROPOSED WORK

This project deals with the renting and transaction criteria of the Online Car Rental System. The aim is to automate its existing manual system by the help of computerized equipment and full- fledged computer software, fulfilling customers requirement.

### 4.1 System Architecture Diagram



(Fig. System Architecture Diagram)

## 4.2 Modules

Online Car Rental System has mainly two menu having different modules according to their specific functionalities.

Admin Menu:

- 1) Add Car Details
  - 2) Update Car Details
  - 3) Booking Information
  - 4) View Reports
- 

User Menu:

- 1) Search Car Details
  - 2) Book Car
  - 3) Make Payment
  - 4) Provide Driver
-

## REQUIREMENT ANALYSIS

### 5.1 Hardware Requirement:

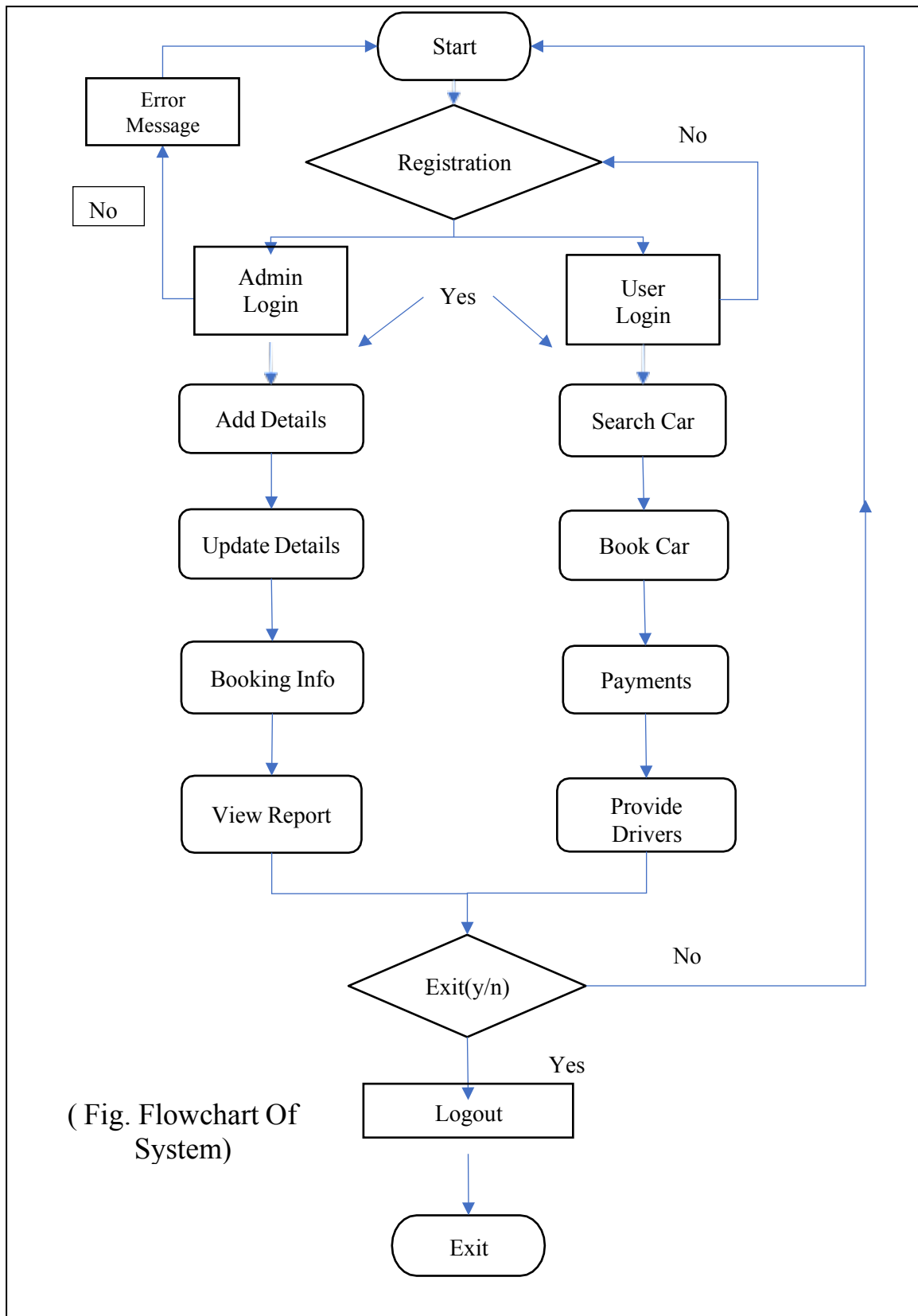
- Processor : i3 Processor / Ryzen 3 or above.
  - RAM : 4 GB or higher
  - Storage : 256 GB HDD/SSD
  - Monitor
  - Keyboard : Standard
  - Mouse : optional
- 

### 5.2 Software Requirement

- Operating system: Windows 7 or Higher and Linux distribution (Ubuntu).
  - Tools : Dev C++
  - Language : C++ .
-

## FLOWCHART

Following Flowcharts display the actual method used in the data flow:



( Fig. Flowchart Of System)

## USAGE OF THE LOGIC AND ALGORITHM

To create Online Car Rental System, we need to implement billing system, car database, booking records, customer information, car maintenance information etc., which will help this business to change from paper-based transition to computerized transition.

In this system we have design different module which contains different permissionand functionalities. The modules are as follows:

1. Add and Update Details – In this module we can add, update the Car Information like model, year, color, license plate, rental status and rate.
2. Booking Information – In this module we can see car rental status, customer information, maintenance information also payments.
3. Search Car – In this module we can search the car we want that satisfies our needs like model, year, color, license plate, rental status and rate.
4. Book Car–In this module we can search the car we want that satisfies our needs like model, year, color, license plate, rental status and rate.
5. Payment– In this module we can generate and display the bill.

This module helps the owner to organize the data in systematic way which will help to less the man-work and also it will not consume more time to store this important data.

## **Concept Used:**

### **Object Oriented Programming:**

We have used basic oops concepts to make this system work efficiently and effectively.

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### **Encapsulation:**

We have used this feature for hiding the secure data i.e. login credentials such as username and password. Those are bind using the access specifiers in C++.

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### **Classes and Objects:**

We have declared different classes for each menu such as customer, employee and product ,etc. having different functions performing different tasks such as bill generating, displaying the customer data, storing it and also for searching. For this purpose, we have declared claases with their objects for storing the data in the memory.

---

### **Data Structure:**

We have used, basic data structures such as array, structures for implementation of this system. This software is very easy to use and efficient to handle.

## IMPLEMENTATION

### 1) Admin Menu:

Admin menu has login id and password for owner where he can handle system. For using this online car rental system software firstly owner has to login into the system by entering appropriate login credentials i.e ID and password. Then there are five modules which described above, in that five modules we have different options like in add details module owner can add new car information and also delete the already present supplier information. All those five modules have different options for adding and deleting the information of related module.

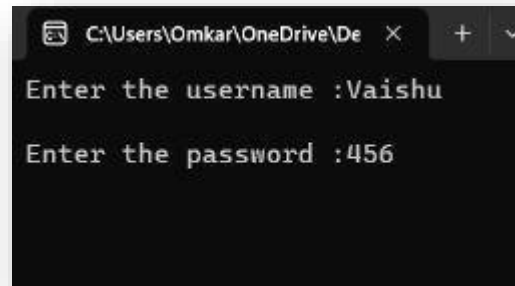
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### 2) User Menu:

Similarly, customer menu has a two option if a customer is registered then he can login into the system by entering login info. If he is not a registered member then he has to create his account first and then he can login into the system. Upon logging four modules are being displayed that is search car, book car, make payments and generate bill and last display past bills.

## RESULTS

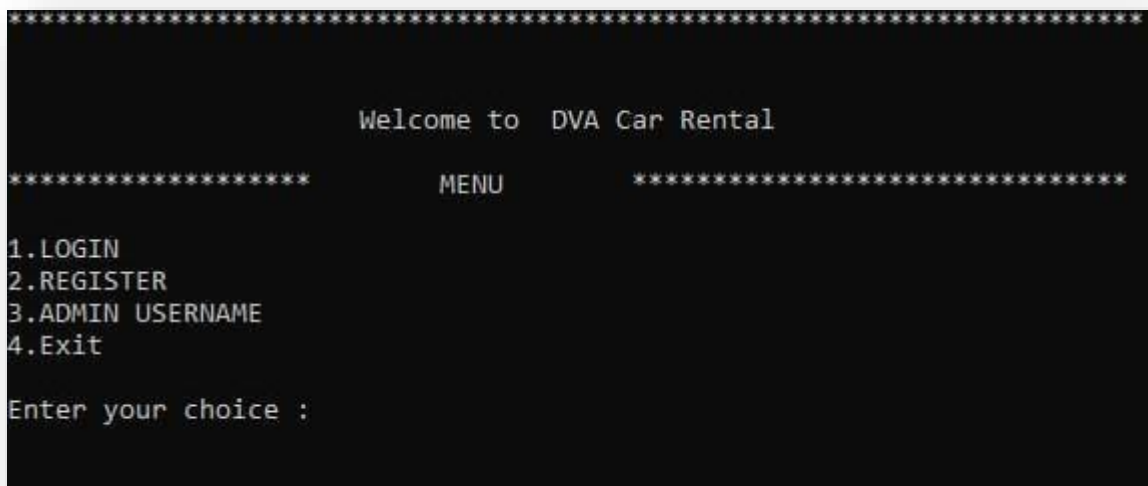
### Registration:



(Fig 1. Registration for New Customer)

---

### User Login:



(Fig 2. Login Page of System)



```
Hello PQR
LOGIN SUCESS
We come to DVA Car.
```

```
Choose a Car from the options below.
Choose a number corresponding to the car you want to Select.
```

1. Toyota 2021.
2. Hyundai 2019.
3. Ford 2020.
4. BMW 2022.
5. Bullet 350.
6. duke 250.
7. Thar.

```
Choose: 1
```

(Fig 3. List of Cars)

```
Calculating rent. Please wait.....
Enter your personal details
Enter Mobile Number : 8080263537
Enter your name: PQR
```

Fri Apr 28 20:16:51 2023

#### CAR RENTAL - CUSTOMER INVOICE

Customer Name	PQR
Mobile Number	8080263537
Car Model	4521929
Car No.	1
Number of days	40
Rental Amount	6000
Caution Money	0
Advanced	0
Total Rental Amount	R 6000

NOTE: This is a computer generated invoice.  
It does not require an authorised signature.

\*\*\*\*\*  
You are advised to pay up the amount before due date.  
Otherwise penalty fee will be applied  
\*\*\*\*\*

Bill stored successfully Press any key to continue . . .

(Fig 4. Total Bill)

```
C:\Users\Omkar\OneDrive\De  X + v
Customer Name:PQR
Mobile Number: 8080263537
Car Model : 4521929
Car No : 1
Number of days : 40
Rental Amount:6000
Customer Name:somya
Mobile Number: 9988552211
Car Model : 4521929
Car No : 7
Number of days : 365
Rental Amount:54750
Customer Name:abhi
Mobile Number: 7757971050
Car Model : 4521929
Car No : 4
Number of days : 365
Rental Amount:54750
Customer Name:Abhi
Mobile Number: 7757971050
Car Model : 4521929
Car No : 7
Number of days : 12
Rental Amount:1800
Customer Name:dhanraj
Mobile Number: 8012345677
Car Model : 4521929
Car No : 7
Number of days : 44
Rental Amount:6600
Customer Name:dhanraj
Mobile Number: 9075993664
Car Model : 4522393
Car No : 4
Number of days : 20
Rental Amount:3000
=====
```

(Fig 5. Total List of Rented Cars)

## CONCLUSION

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The Online Car Rental System is designed to automate the data handling & processing for the ease of car renting. This system is efficient & easy to use as well as handle data in an effective manner. Overall, the system reduces manpower and helps in time saving as well as efforts. It performs different tasks from storing and retrieving to displaying and generating bills. This system will try to make efficient use of technology for human benefit and helps us improve in the computing world with its fascinating features.

## REFERENCES

- Websites:

i) <https://dev.mysql.com/>

MySQL Connector/C++ is a library for applications written in C or C++ that communicate with MySQL database servers. Version 8.0 of Connector/C++ implements three different APIs which can be used by applications:

a) The new X DevAPI for applications written in C++.

b) The new X DevAPI for C for applications written in plain C.

ii) <https://www.geeksforgeeks.org/>

We made use of this website for understanding basic terms related to C++ and implementation of the OOPs feature in the system.

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- Books:

iii) The complete Reference C++ by Herbert Schild (Tata McGraw Hill) 5th edition.

iv) Object- Oriented Programming in C++ by E. Balaguruswamy (Tata McGrawHill) 8th edition.

## OVERALL COMPLETION CHART

Period	Work To be Completed
07/02/2023 - 21/02/2023	Topic Selection
21/02/2023 - 28/02/2023	Overview on given topic
07/03/2023 - 14/03/2023	Build Modules
14/03/2023 - 21/03/2023	Flowcharts and System Diagram
21/04/2023 - 28/04/2023	Submission of Synopsis
04/04/2023 - 11/04/2023	Implementation of modules
11/04/2023 - 18/04/2023	Analyzing Program
18/04/2023 - 25/04/2023	Testing
25/04/2023 - 09/05/2023	Prepare Report of project
09/05/2023 - 23/05/2023	Final Project Submission

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Miss. Anjali M. Yadav

Mrs. S. M. Mulla

**PROJECT GUIDE**

**H.O.D - CSE**