iPRIMED Education Solution Pvt Ltd.

Project Report on,

"Car Buy and Rental Application"

Submitted by,

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FROM

HARMAN C++ BATCH-06

Table of Content

Business Requirements Specification (BRS)

Background of the project

“Car rent and buy” is a console-based application through which we can rent and buy our choices car. It is created by C++ programming language and MySQL database to store the user’s data, car’s data and other required data. As the application will start, it asks for admin or users. For admin, it asks for enter the credentials to login. The admin can update the cars and their details to the database. It can also update the user’s details. And for users, it asks for register or login. After registered, it asks for login and they can see the list of cars with its details. Then it asks for rent, buy or cancel. After clicking on the rent or buy option one has to paid the mentioned price and can get the car from the given location. Everything will be updated in the database. The application will be available 24/7.

Goals of project

The goal of the project Car rental and buying system is to give the full and easy facilities to the customers to rent or buy a car sitting at home. The customers can see all the details of the car which he/she want to rent or buy. They can see all the features like model name, milage, petrol/diesel engine, manufactured year etc. We know that there are many ways to buy or rent a car or vehicles through offline mode means from office. But our application helps the customers to take the car for how much days they wish, there won't be any bond for time or days.

Problem Statement

The Manual car rental system provides services only during office hours. So; customers have limited time to make any transactions or reservation of the cars. The existence of the online car rental systems nowadays has overcome the limitation of the business operation hour. However; there is still a few numbers of these online car rental systems in Malaysia and most of the systems offered reservation service for tourists or traveller. Besides that, there are some customers who faced a problem in choosing car to be rented which suitable with some of the important requirements.

1. To rent a car a prospective renter must first go to the nearest office to register as a client.
2. Cars that provide difficulties to rent out are normally advertised in local or national newspaper, it involves a lot of paper work and consumes time.

A car rental is a vehicle that may be rented for a price and utilised for a specific length of time. Getting a rental automobile makes it easier for people to travel around when they don't have access to their own vehicle or don't own one at all. A person who needs transportation must call a rental car company and sign a contract. This method improves client retention while also making car and employee management more straightforward.

Solution / Proposed System

Create a system that allows consumers to register and reserve automobiles online while also allowing the firm to manage its car rental business efficiently. To make the process of renting an automobile easier for consumers. This Car Rental System project will enable the user to rent a vehicle. The user shall login to the system and check for availability of cars. The user specifies a type of car and the journey date and time. The Car Rental System shall check for the availability of the car and rent the car to the customer. The user can make payment online. The tool is designed using C++. All the data regarding the rental cars are stored in MySQL database. The user has to enter his name, address, phone details and check for the cars available for rent. The main advantage is that the user shall be able to choose a car depending on his budget and the car they want to rent or buy.

Requirements

Functional Requirements

Requirement analysis is a software engineering approach that consists of a series of activities that establish the demands or conditions that must be satisfied for a new or updated product while taking into account the potential for competing requirements from different users.

Functional requirements are those that are used to demonstrate the system's internal functioning nature, as well as the system's description and explanation of each subsystem. It comprises the task that the system should accomplish, the processes involved, the data that the system should contain, and the user interfaces.

The functional requirements discovered are as follows:

1. Customer registration – New users should be able to register online and get their account created.
2. Customer Login - The users can login to the system with their login credentials and can choose the car they wish.
3. Car reservation online – Customers should be able to utilise the system to book and reserve automobiles online.
4. Automatic database update once a reservation is made or a new customer is registered – The system should be able to update the database without any further effort from the administrator whenever a new reservation or registration is made.

Non-Functional Requirements

It describes system elements that are concerned with how the system fulfils functional requirements.

They are as follows:

1) Security – Only the registered users can access the application and take the services.
2) Performance and Response Time – The system should have a high-performance rate while executing user input and should be able respond very fast, in a short amount of time.
3) Availability – This system must be accessible at all times, 24 hours a day, seven days a week.
4) Ease of Use – The application is user friendly application. It’s very simple and easy to use.

DATABASE Design

Car_for_rent

Car_for_rent
Name
Seat
Milage
Rent
Fuel_type
Availability
Transmission_type
Airbags
Car_no

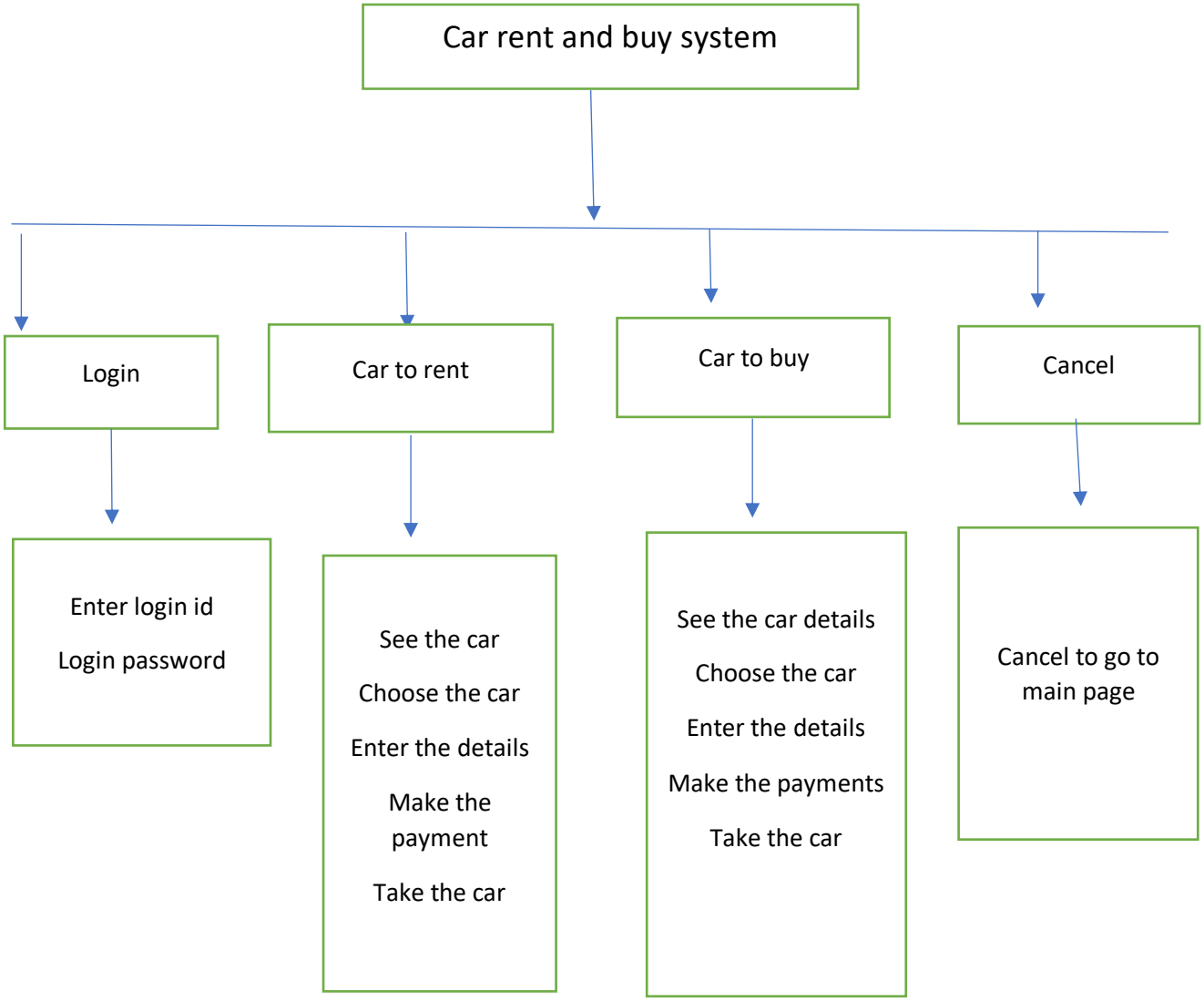
Cars_to_buy

Cars_to_buy
Name
Seat
Milage
Fuel_type
Transmission_type
Airbags
Price
Car_no

Login

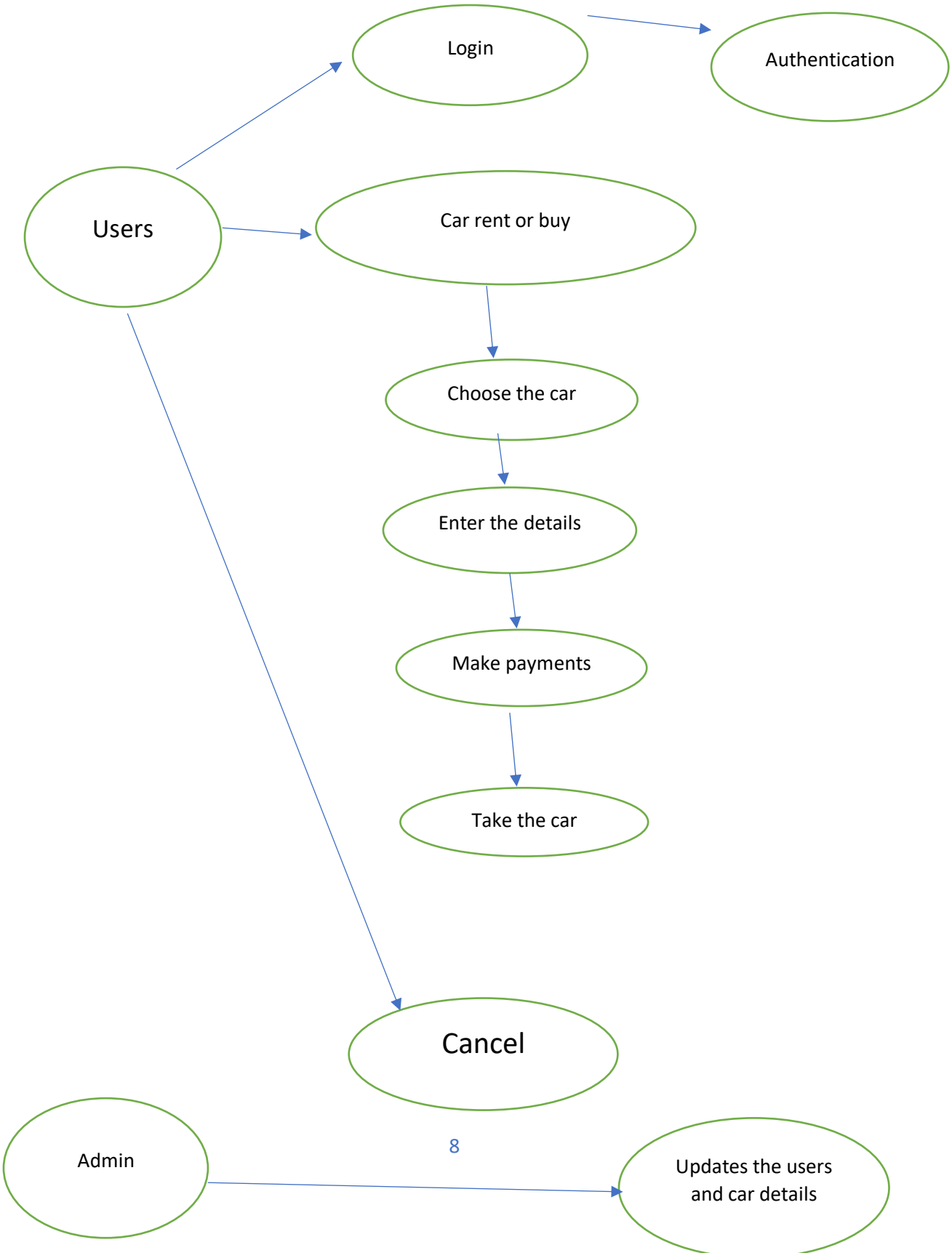
Login
Login_id Login_password

Architecture diagram



UML Diagram

1. Use-case Diagram



Release Notes

Car rent and buy system

Car rent and buy system Release Notes

1. Introduction

"Car rent and buy" is a console-based application through which we can rent and buy our choices car. Car buys and rent system will preserve the records of all the cars available, cars rented, etc. The user can rent a car based on its efficiency, performance, effort, or cost of the car available in the list. The dealer can make a lot of use of this system by providing the cars.

2. Compatible Products

This project has created and tested on Visual studio tool with the Windows OS platforms.

3. Upgrades

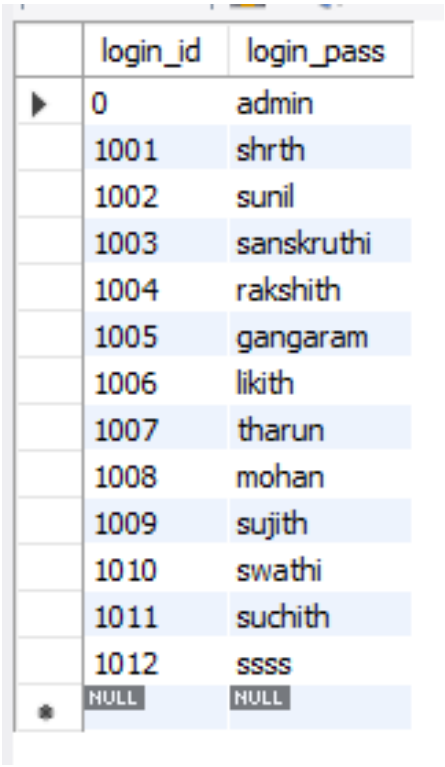
As of now, we are not using any tracking system. We need car tracking system for car rent. We will use GPS tracking system with our system so that we will keep the records of the users regarding their travelled location or places. Using all these records further we will able to make new decision regarding our business. We will also make it to run on different operating system as mac OS, iOS, android etc. We will also make our project for bike rent, scotty rent etc. As of now, it will work from a single store, but we will make it to work for multiple stores at a time. All these new features and properties will help customers to get the vehicle in rent quickly or their nearest location.

4. New features

The new features in the upgraded system will be:

1. GPS tracking system
2. Compactible for different operating system.
3. Bike and scotty will be available in the system
4. Can work for multiple stores at a time.

SQL Tables and C++ Code: -



login_id	login_pass
0	admin
1001	shrth
1002	sunil
1003	sanskruthi
1004	rakshith
1005	gangaram
1006	likith
1007	tharun
1008	mohan
1009	sujith
1010	swathi
1011	suchith
1012	ssss
NULL	NULL

login Table

name	seats	mileage	fuel_type	air_bags	transmission_type	price	car_nums
Hyundai creta	5	18 kmpl	Petrol	Yes	Automatic	1020000	1
Maruti Baleno	5	22 kmpl	Diesel	Yes	Manual	635000	2
Hyundai santro	5	20 kmpl	Petrol	No	Manual	486000	3
Maruti Ertiga	7	26.11 kmpl	Petrol	Yes	Manual	835000	4
Mahindra XUV 300	5	20 kmpl	Diesel	Yes	Automatic	945000	5
Volkswagen Taigun	5	19.2kmpl	Petrol	Yes	Manual	1140000	6
Volkswagen POLO	5	18.24 kmpl	Petrol	Yes	Automatic	724000	7
Mahindra Thar	4	15.2 kmpl	Petrol	Yes	Manual	1607000	8
Mahindra Bolero	7	16 kmpl	Diesel	Yes	Manual	933000	9
Hyundai Alcazar	7	20.4 kmpl	Diesel	Yes	Automatic	1634000	10
Mahindra XUV-700	7	16kmpl	Petrol	Yes	Automatic	2910000	11
maruthi_omni	7	21kmpl	Diesel	No	Manual	120000	12
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

cars_to_buy Table

name	seats	mileage	rent	fuel_type	availability	transmission_type	airbags	car_num
Mahindra Thar	4	15.2 kmpl	85 rs/hr	Petrol	Yes	Manual	Yes	1
Hyundai Santro	5	20 kmpl	80 rs/hr	Petrol	Yes	Manual	No	2
Mahindra XUV 300	5	20kmpl	81 rs/hr	Diesel	Yes	Automatic	Yes	3
Volkswagen POLO	5	18.24 kmpl	81 rs/hr	Petrol	Yes	Automatic	Yes	4
Mahindra Baleno	5	22 kmpl	83 rs/hr	Diesel	Yes	Manual	Yes	5
Mahindra Bolaro	7	16 kmpl	79 rs/hr	Diesel	Yes	Manual	Yes	6
Hyundai Alcazar	7	20.4 kmpl	83 rs/hr	Diesel	Yes	Automatic	Yes	7
Volkswagen Taigun	5	19.2 kmpl	80 rs/hr	Petrol	Yes	Manual	Yes	8
Maruti Ertiga	7	26kmpl	81rs/hr	Diesel	Yes	Manual	Yes	9
Hyundai Creta	5	18 kmpl	82 rs/hr	Petrol	Yes	manual	Yes	10
Mahindra XUV-700	7	16kmpl	84rs/hr	Petrol	Yes	Automatic	Yes	11
Maruti_swift	4	20kmpl	79rs/hr	Diesel	Yes	Manual	Yes	12
Maruthi_omni	7	21kmpl	70rs/hr	Diesel	Yes	Manual	No	13
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

cars_for_rent Table

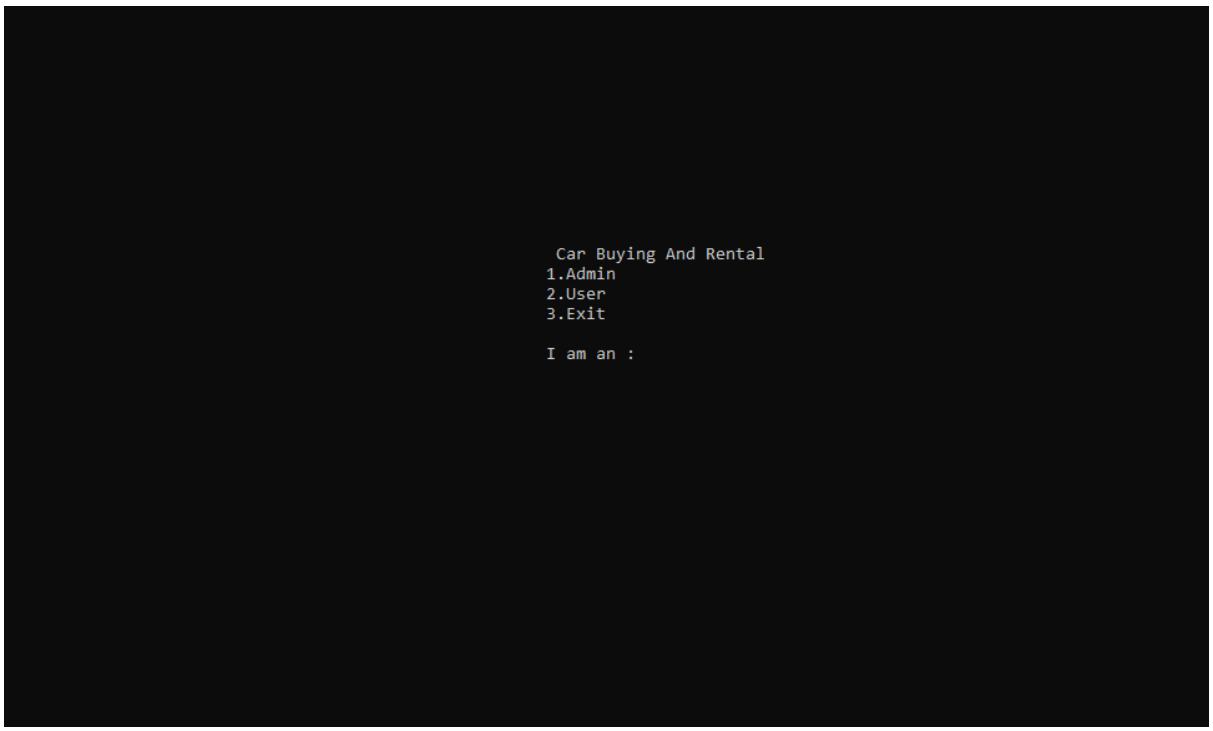
```
void adminHome() {
    int choice;
    cout << "\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\t\t\t\t\t\t\t\t\t\t\t\t\t Car Buying And Rental" << endl;
    cout << "\n\t\t\t\t\t\t\t\t\t\t\t\t\t1)Add user";
    cout << "\n\t\t\t\t\t\t\t\t\t\t\t\t\t2)Add new car for rent";
    cout << "\n\t\t\t\t\t\t\t\t\t\t\t\t\t3)Add new car to buy";
    cout << "\n\t\t\t\t\t\t\t\t\t\t\t\t\t4)All cars details in rental";
    cout << "\n\t\t\t\t\t\t\t\t\t\t\t\t\t5)All cars details for buying";
    cout << "\n\t\t\t\t\t\t\t\t\t\t\t\t\t6)Logout";
    cout << "\n\t\t\t\t\t\t\t\t\t\t\t\t\t================================================";
    cout << "\n\n\t\t\t\t\t\t\t\t\t\t\t\t\tEnter your choice:-";
    cin >> choice;
    switch (choice)
    {
    case 1: adduser();
            break;

    case 2: addCarRent();
            break;

    case 3: addCarBuy();
            break;

    case 4: rentDetails();
            break;

    case 5: buyDetails();
            break;

    case 6: cout << "\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\t\t\t\t\t\t\t\t\t\t\t\t\tThank you ";
            system("PAUSE");
            system("CLS");
            main();
            break;
    default:cout << "\n\n\t\t\t\t\t\t\t\t\t\t\t\t\tEnter a proper choice\n";
            system("PAUSE");
            system("CLS");
            adminHome();
    }
}
```

Code to display admin home page

```
void buyDetails() {
    int go;
    system("PAUSE");
    system("CLS");
    cout << "\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\t\t\t\t\t\t\t\t\t\t\t\t\t Car Buying And Rental" << endl;
    cout << "\n\t\t\t\t\t\t\t\t\t\t\t\t\tRenting Cars Details";
    cout << "\n\t\t\t\t\t\t================================================================================================================================\n";
    cout << "\t\t\t\t\t|  Car Name        |Number of Seats|    Mileage    |      Fuel Type      |  Airbags |  Transmission Type  |            Price  |" << endl;
    cout << "\n\t\t\t\t\t\t================================================================================================================================\n";
    pstmt = con->prepareStatement("SELECT * FROM cars_to_buy");
    res = pstmt->executeQuery();
    while (res->next()) {
        cout << "\t\t\t\t\t| " << res->getString("name") << "  \t" << res->getInt("seats") << "  \t\t" << res->getString("mileage") <<"  \t" << res->getString("fuel_type") <<
            "  \t\t" << res->getString("air_bags") << "  \t\t" << res->getString("transmission_type") << "  \t\t" << res->getString("price") << "  |" << endl;
    }
    cout << "\n\t\t\t\t\t\t\t\t\t\t\t\t\tPress 1 to go back: ";
    cin >> go;
    if (go == 1) {
        system("PAUSE");
        system("CLS");
        adminHome();
    }
    else {
        cout << "\n\t\t\t\t\t\t\t\t\t\t\t\t\tEnter Proper number to exit..." << endl;
        rentDetails();
    }
    delete res;
    delete pstmt;
    delete con;
}
```

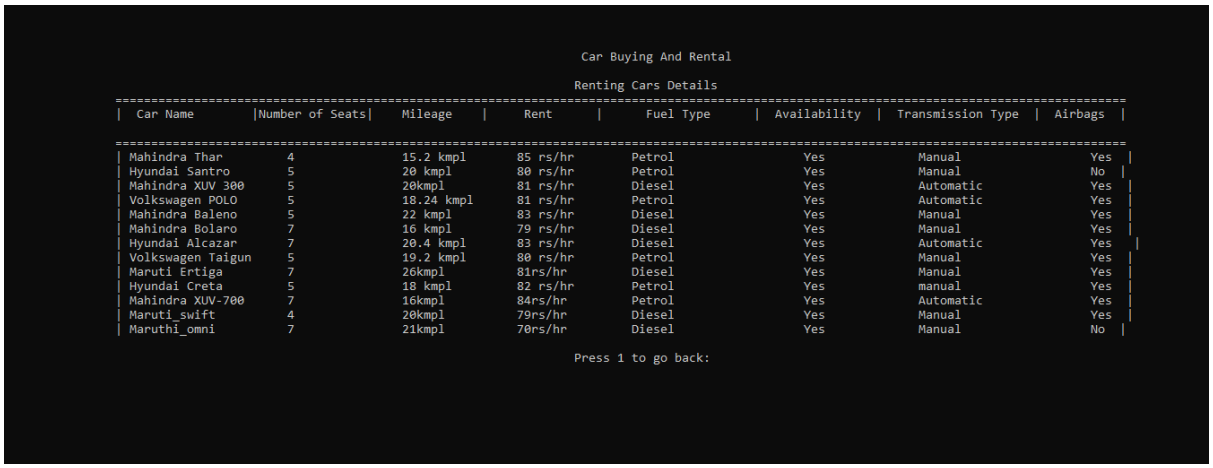
Code to display the cars for buying

Glimpse of the Application:-



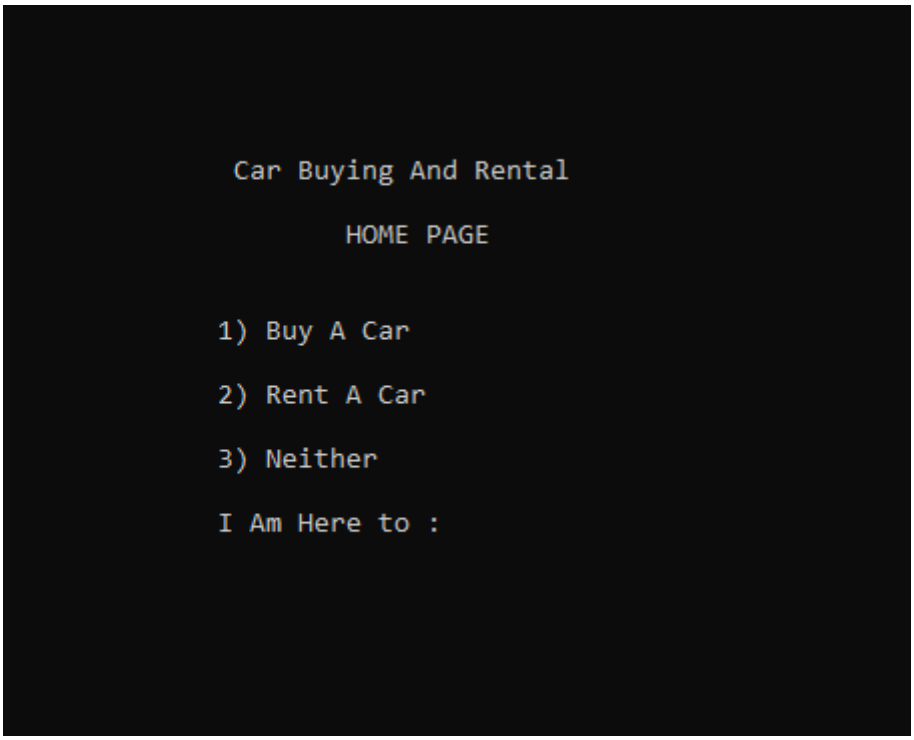
Root login

Admin home



```
                                                Car Buying And Rental

                                                Renting Cars Details
=================================================================================================================================
|  Car Name         |Number of Seats|    Mileage    |     Rent      |      Fuel Type      | Availability  | Transmission Type  |  Airbags  |
=================================================================================================================================
| Mahindra Thar          4              15.2 kmpl       85 rs/hr        Petrol                Yes             Manual                Yes  |
| Hyundai Santro         5              20 kmpl         80 rs/hr        Petrol                Yes             Manual                No  |
| Mahindra XUV 300       5              20kmpl          81 rs/hr        Diesel                Yes             Automatic             Yes  |
| Volkswagen POLO        5              18.24 kmpl      81 rs/hr        Petrol                Yes             Automatic             Yes  |
| Mahindra Baleno        5              22 kmpl         83 rs/hr        Diesel                Yes             Manual                Yes  |
| Mahindra Bolaro        7              16 kmpl         79 rs/hr        Diesel                Yes             Manual                Yes  |
| Hyundai Alcazar        7              20.4 kmpl       83 rs/hr        Diesel                Yes             Automatic             Yes  |
| Volkswagen Taigun      5              19.2 kmpl       80 rs/hr        Petrol                Yes             Manual                Yes  |
| Maruti Ertiga          7              26kmpl          81rs/hr         Diesel                Yes             Manual                Yes  |
| Hyundai Creta          5              18 kmpl         82 rs/hr        Petrol                Yes             manual                Yes  |
| Mahindra XUV-700       7              16kmpl          84rs/hr         Petrol                Yes             Automatic             Yes  |
| Maruti_swift           4              20kmpl          79rs/hr         Diesel                Yes             Manual                Yes  |
| Maruthi_omni           7              21kmpl          70rs/hr         Diesel                Yes             Manual                No  |

                                                Press 1 to go back:
```

Buying cars details in admin home



```
Car Buying And Rental

        HOME PAGE

1) Buy A Car

2) Rent A Car

3) Neither

I Am Here to :
```

User Home

Renting car details in user home

CONCLUSION: -

The conclusion of this research was to create a car buying and rental system application in console mode using C++ where users can access the data required and rent the cars or buy them.

That ends our elaboration on Car buy and rental application project report and documentation.