

Car Rental System

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Introduction of the Project :

A car rental system is designed to streamline the process of renting vehicles to customers. It involves managing vehicle inventory, customer reservations, bookings, payments, and other related functionalities.

Our goal is to create a software solution that automates these processes, enabling a seamless and user-friendly experience for both rental agencies and customers.

OBJECTIVES :

1. To streamline the process of selecting and confirming car booking. In this car rental system, we will give the users options for selecting a car, choosing the model and color of the car, and finally paying the required amount for renting the car.
2. To create a fully automated interface that is very easy and convenient for the users.

Requirements :

To run this car rental system with C++ project, you must have the following prerequisites.

1. Basic knowledge of C++ programming concepts
2. IDE for running and compiling the C++ source code: Dev C++, Code Blocks, or VS code is recommended for a better experience.
3. Windows 10 operating system (or any latest version)

Code Explanation:

Firstly, we have added different cars with different rents depending upon the type of car. You can easily rent a car by paying the required amount specified as rent for the selected car. You need to provide your required personal details. In the output, the user will also get to know the details about the car that they selected for renting

```
1  #include <iostream>
2  #include <conio.h>
3  #include <stdlib.h>
4  using namespace std;
5
6  struct Cars {
7
8      string company[200]= {"Maruti Suzuki", "Volkswagun", "BMW", "Audi", "KIA", "Tesla", "Mercedes", "Mahindra", "TATA"};
9
10     string model[200]= {"800", "2020", "Q7", "R8", "Saltos", "S-Series", "Benz", "Thar", "Nano"};
11
12     string color[200]= {"Yellow", "Black", "Red", "Brown", "Blue", "Silver", "Balck", "Grey", "Red"};
13
14     string max_speed[200]= {"80 Km/h ", "200 Km/h", "300 Km/h", "250 Km/h", "320 Km/h", "400 Km/h", "200 Km/h", "250 Km/h", "280 Km/h"};
15
16     int price[100]= {10000, 20000, 50000, 40000, 50000, 50000, 20000, 20000, 20000};
17
18     int date [100] = {2020, 2012, 2019, 2018, 2017, 2016, 2015, 2021, 2010};
19 }car;
20
21 struct Lease_info{
22
23     string Name[100];
24     string Natio_ID[100];
25     int payment_acc[100] ;
26 }lease;
27
```

After that, a structure is defined, and various string arrays are declared, like company, model, color, max-speed, price, date, etc. Another structure for the lease info is declared to store the customer's personal details like the name, national id, payment account, etc.

Next, we have the *Menu()* function. It displays a list of various options and asks the user to select a particular option from the list. After selecting the desired option, it drives you to the function for the particular option selected

```
//First output
void Menu ()
{
    int num=1;
    for(int i=0 ;i<9;++i)
    {
        cout<<"\t\t\t";
        cout<<"Enter " <<num<<"\t- To Select  " <<car.company[i]<<endl;
        num++ ;
    }
}
```

Then, we created a *Details()* function. This function basically gives the users the liberty to choose from the various car companies, models, colors, max speed, and price. It provides users with a customized choice

```
//Second output
void Details (int Choice)
{
    system("CLS");
    cout<<"\n\n\n\t\t\t-----\n";
    cout<<"\t\t\tYou Have Selected - "<<car.company[Choice-1]<<endl;
    cout<<"\t\t\t-----\n\n\n";
    cout<<"\t\t\tModel : "<<car.model[Choice-1]<<endl;
    cout<<"\t\t\tColor : "<<car.color[Choice-1]<<endl;
    cout<<"\t\t\tMaximum Speed : "<<car.max_speed[Choice-1]<<endl;
    cout<<"\t\t\tPrice : "<<car.price[Choice-1]<<endl;

}
```


The *checklease()* function is used to check whether the lease payment is greater than the car price. If the condition is correct, then it displays that the “*process has been done successfully*”; else, it displays “*not available*”

```
//check lease credit

void checklease (int k )
{
    if(lease.payment_acc[k]>=car.price[k])
        cout<<"\n\n\n\t\t\tProcess has been done successfully!! "<<endl;
    else
        cout<<"\n\n\n\t\t\tNot Available "<<endl;
}
```

The *user_input()* function asks for personal details like the first name, rental amount, national ID, and payment account

```
/User Input.cpo
void user_input (int theChoice)
{
    system("CLS");
    int i;
        int j=theChoice-1 ;
        cout<<"\t\t\t-----\n";
        cout<<"\t\t\tPlease Provide Your Personal Details : \n";
        cout<<"\t\t\t-----\n\n";
        cout<<"\n\tNOTE: PROVIDE FIRST NAME ONLY, DONOT ENTER SPACE WHILE PROVIDING NAME,\n\tPAYMENT WON'T PROCEED IF THE GIVEN AMOUNT IS";
        cout<<"\t\t\tEnter Your Name : ";
        cin>>lease.Name[100];
        cout<<"\t\t\tEnter Your National ID : ";
        cin>>lease.Natio_ID[j] ;
        cout<<"\t\t\tPayment Amount: " ;
        cin>>lease.payment_acc[j] ;

        checklease( j ) ;
}
```

Then, we created the *main()* function. It displays the heading “*Simple Car Rental System*” and the menu. The user gets a prompt about whether he/she wants to rent the car. According to the selection made by the user, it does the desired operation

```
int main()
{
    int login();
    login();

    string decide = "yes" ;
    cout<<"\t\t\t-----\n";
    cout<<"\t\t\t\tSIMPLE CAR RENTAL SYSTEM \n";
    cout<<"\t\t\t\tWelcome to Our Company ,Choose from the menu : "<<endl;
    cout<<"\t\t\t-----\n";
    while(decide!="exit")
    {
        Menu();
        cout<<"\n\n\n\t\t\tYour Choice: ";
        int theChoice ;
        cin>>theChoice ;
        Details(theChoice);
        cout<<"\n\n\n\t\t\tAre You Sure, you want to rent this Car? (yes /no /exit ) : ";
        cin>>decide ;
        if(decide=="yes") {
            user_input(theChoice);
            cout<<"\n\n\t\t\tDo you want to continue ?(yes/no) ";
            cin>>decide;
            if (decide=="no") break ;
        }
        system("CLS");
    }

    else {
        if(decide=="no")
        {
            system("CLS");
            continue ;
        }
        else if (decide=="exit")
        {
            system("CLS");
            break ;
        }
    }
}
```


Finally, we have the *login()* function. It asks for the password; if the password entered is correct, then it displays *“Access Granted! Welcome To Our System”* or else *“Access Aborted...Please Try Again!!”*

```
int login(){
    string pass = "";
    char ch;
    cout << "\n\n\n\n\n\n\n\n\t\t\t\t\t Sunshine Car Rental System Login";
    cout << "\n\n\n\n\n\n\n\n\t\t\t\t\t Enter Password: ";
    ch = _getch();
    while(ch != 13){//character 13 is enter
        pass.push_back(ch);
        cout<<'*';
        ch = _getch();
    }
    if(pass == "pass"){
        cout << "\n\n\n\n\n\n\t\t\t\t\t Access Granted! Welcome To Our System \n\n";
        system("PAUSE");
        system("CLS");
    }else{
        cout << "\n\n\n\n\n\n\t\t\t\t\t Access Aborted...Please Try Again!!\n";
        system("PAUSE");
        system("CLS");
        login();
    }
}
```

Output :

```
C:\Users\delhi\Documents\car rent.exe

Sunshine Car Rental System Login

Enter Password: ****

-----
SIMPLE CAR RENTAL SYSTEM
Welcome to Our Company ,Choose from the menu :
-----
Enter 1 - To Select Maruti Suzuki
Enter 2 - To Select Volkswagen
Enter 3 - To Select BMW
Enter 4 - To Select Audi
Enter 5 - To Select KIA
Enter 6 - To Select Tesla
Enter 7 - To Select Mercedes
Enter 8 - To Select Mahindra
Enter 9 - To Select TATA

Your Choice: 6

-----
You Have Selected - Tesla
-----

Model : S-Series
Color : Silver
Maximum Speed : 488 Km/h
Price : 58888

Are You Sure, you want to rent this Car? (yes /no /exit ) : y

-----
Please Provide Your Personal Details :
-----

NOTE: PROVIDE FIRST NAME ONLY, DONOT ENTER SPACE WHILE PROVIDING NAME,
PAYMENT WON'T PROCEED IF THE GIVEN AMOUNT IS LESS THEN THE RATE OF CAR

Enter Your Name : Sahil
Enter Your National ID : 7778
Payment Amount: 58888

Process has been done successfully!!

Do you want to continue ?(yes/no)
```


Source code :



F77CB2CD.cpp

Conclusion :

We have successfully built a Car Rental System with C++. Through this system interface, we can access various cars which we desire to rent and can even choose them on the basis of color, model, rental payment, etc. This is a very simple, automated, and convenient system that helps the user to access numerous cars for rent as per need. This car rental system with C++ has the following functionalities:

- To provide online service to customers at their convenience.
- To lessen human error
- Providing high security and making data handling easy
- Generating data backup is easy
- Keeps record properly and safely
- Helps to rent a car anytime and anywhere
- Provides transparency to the system

Reference

<https://myprojectideas.com/car-rental-system-with-c/>

Thank You