Online Car Rental Management System

CP FINAL PROJECT REPORT

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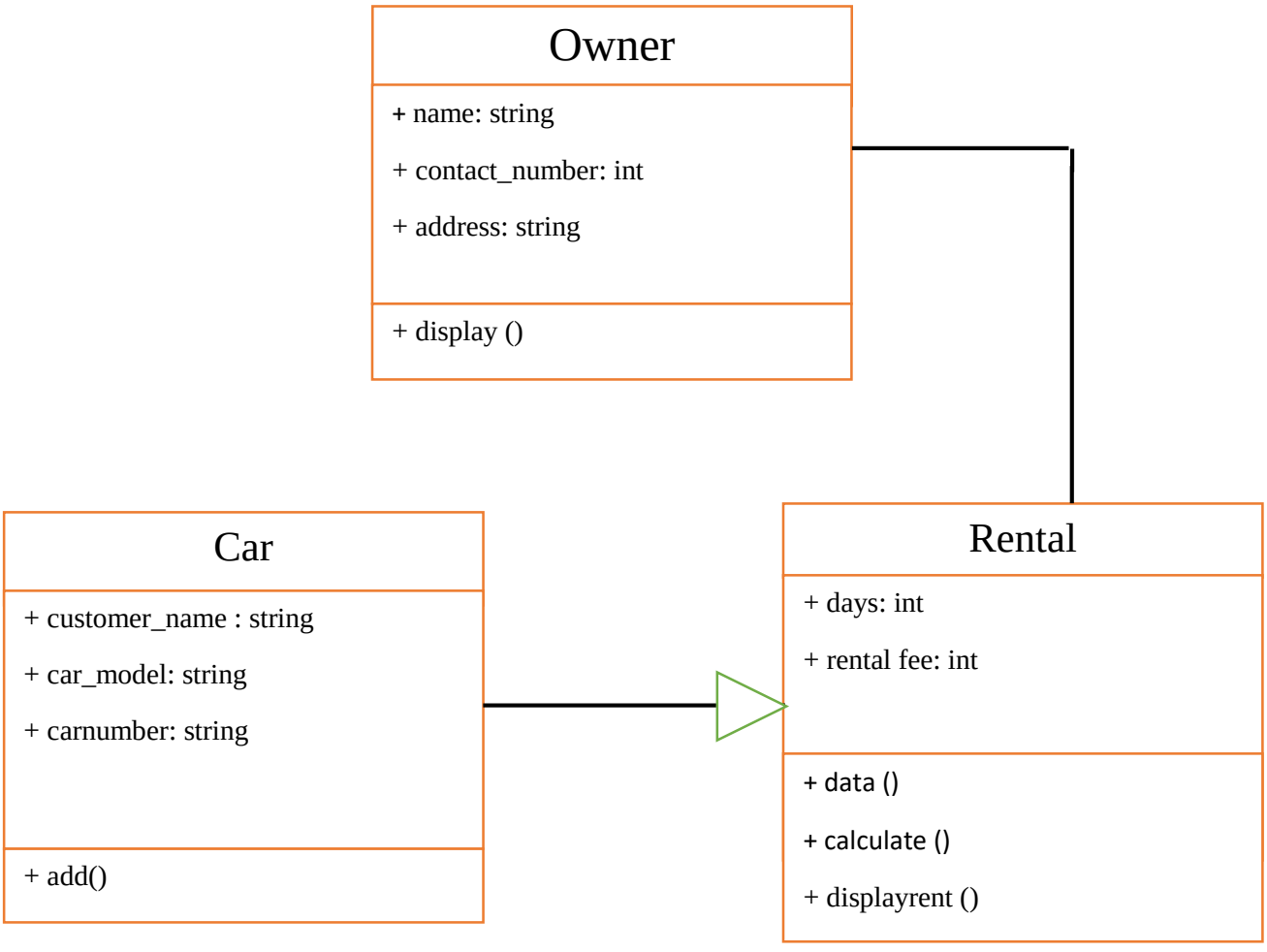
Online Car Rental System:

- Car rental system is basically an online system in which a person buys a car for a few days on rent.
- It is used for booking cars.
- It is also used for car Registration.
- Most people rent a car for travel purposes.
- Different services are provided to rent a car.

Class Diagram:



Introduction to class Diagram:

In this class diagram, I have used the concept of composition and inheritance. There is a total of three classes that are used in the class diagram.

One is the class of the car owner that is composed by the third class which is rental. Also, the second class of car is inherited from the owner class.

In class diagram, different attributes of the given class is displayed respectively. And their functionalities are also displayed.

Implementation Methodology:

Owner Class:

In the first class, I have used a function of display to show the owner's details.

```
void display ()
{
  cout << "   Car Owner :"     <<"          "<<setw(10)<<    "Anousha Malik"         << "          "<<endl;
  cout << "   Contact Number :"<<"          "<<setw(10)<<    "0338745633222"         << "          "<<endl;
  cout << "   Address :"       <<"          "<<setw(10)<<    "Chashma Colony C8"     << "          "<<endl;
  cout << "   ********************************************************************************** "<<endl;
}
```

The owner class is a base class that is composed by the rental class and has some qualities with that class.

Car Class:

This class just shows the attributes of the required functions. This class has no link with the owner class however it is a base class of a next class.

Rental Class:

Rental class is inherited from a car class. It is a derived class of the above car class.

```
do
{

    cout<<"\t\t\t\t********** Select the Car **********"<<endl;
    cout<<"\t\t\t\t Press  '1' for Parado 2021."<<endl;
    cout<<"\t\t\t\t Press  '2' for JLXI 2022."<<endl;
    cout<<"\t\t\t\t Press  '3' for FERRARI 2019."<<endl;
    cout<<"\t\t\t\t Press  '4' for Mercedes Benz 2018."<<endl;
    cout<<"\t\t\t\t Press  '5' for Mehran VXR 2013."<<endl;
    cout<<"\t\t\t\t Press  '6' for Prado TX 2017."<<endl;
    cout<<"\t\t\t\t Press  '7' for Cultus 2016"<<endl;

    cout<<"\t\t\t\t Press  '8' for Honda 2020."<<endl;
    cout<<"\t\t\t\t Press  '9' for Suzuki liana 2019."<<endl;
    cout<<"\t\t\t\t Press  '10' for Audi Etron 2019."<<endl;
    cout<<"\t\t\t\t Press  '11 for Audi A6 2010."<<endl;
    cout<<"\t\t\t\t Press  '12' for Toyota 2018."<<endl;
    cout<<"\t\t\t\t Press  '13' for BMW iX."<<endl;
    cout<<"\t\t\t\t Press  '14' for Corolla 2022."<<endl;
    cout<<"\t\t\t\t Press  '15' for Mercedez 2020."<<endl;
    cout<<endl;
    cout<<"\t\t\t\t Do select the car from the above options " << endl;
    cin >>carmodel;
    cout<<endl;
```

In this required field, a customer gets a chance to pick up a car that he wants to choose.

Functionalities used:

In this function, the rent of the car is calculated.

```
void calculate()
{
    sleep(1);
    system ("CLS");
    cout<<"The rent of the car is calculating.....!!"<<endl;
    sleep(2);
    system ("CLS");
```

In this function, the details of the rent is being displayed.

```
void showrent()
{
    cout << "\n\t\t                    Online Car Rental Services              "<<endl;
    cout << "\t\t   ***************************************************************"<<endl;
    cout << "\t\t    Customer Name:"<<"                  "<<setw(10)<< customer_name<<endl;
    cout << "\t\t    Car Model :"   <<"                  "<<setw(10)<< carmodel     <<endl;
    cout << "\t\t    Car No. :"     <<"                  "<<setw(10)<< " JPL 756"   <<endl;
    cout << "\t\t    Number of days:"<<"                "<<setw(10)<<  days        <<endl;
    cout << "\t\t    ***********************************************************"   <<endl;

    cout << "\t\t    Total Rental Amount is :"<<"        "<<setw(10)<<  " RS "      <<rentalfee<<endl;

    cout << "\t\t\t  ********************************************************************* "<<endl;
    cout<<endl;
```

Main Functionalities:

In the main, Functions are being called by objects that have been used before the main.

```
int main()
{
    Owner obj1;


    rental obj2;

    obj2.data();

    obj2.calculate();
    cout<<endl;
    cout<<endl;
    obj1. display();
    cout<<endl;
    cout<<endl;
    obj2.showrent();

    return 0; //end of the program
}
```

Complete Code:

#include <iostream>

#include <fstream>

```
#include <unistd.h>

#include <iomanip>


using namespace std;
// main class of the class owner representing base class
   class Owner
{
//          Attributes of the owner class showing in public:
   public:
          char owner_name [30];
          int contact_number;
          char owner_address [30];

// void owner is the functionality of the owner class used to display the details of the ower.
   /*void add ()
   {
          cout << "Enter the name of the owner " << endl;
          cin >> owner_name;
          cout << "Enter the contact number of the owner " << endl;
          cin >> contact_number;
          cout << "Enter the address of the owner " << endl;
          cin >> owner_address;
          } */
   void display ()
   {
     cout << "   Car Owner :"     <<"         "<<setw(10)<<    "Anousha Malik"        << "         "<<endl;
     cout << "   Contact Number :"<<"         "<<setw(10)<<    "0338745633222"        << "         "<<endl;
```

```
    cout << "   Address :"      <<"         "<<setw(10)<<    "Chashma Colony C8"     << "         "<<endl;
    cout << "
********************************************************************************** "<<endl;
  }
};
// class of a car and a customer who want to buy a car:
class car
{

public:

  string customer_name;
  string car_model;
  string carnumber;
  char data;



  void add()
  {}

};

 // Rental class is the derived class that is inherited from the base class of the
 // above class and that is car class
 class rental : public car
{
  public:
  // initially 0 value is stored in number of days:
  int days=0;
  // additional int variables are defined here.
```

```
// Here in starting initially rental fee is equal to zero.
        int rentalfee = 0;
void data()
{
   cout << "*****************Welcome to Car Rental System**************** " << endl;
   // Here the user is taking the data from the customer.
                cout << "Enter the name of the customer " << endl;
   getline(cin,  customer_name);
 //   cout << "How many cars a customer want for a rent " << endl;
  // cin >> n;
   cout<<endl;
   // do while loop is used to select a car
   do
   {

      cout<<"\t\t ***************** Select the Car *****************"<<endl;
      cout<<"\t\t\t\t Press  '1' for Parado 2021."<<endl;
      cout<<"\t\t\t\t Press  '2' for JLXI 2022."<<endl;
      cout<<"\t\t\t\t Press  '3' for FERRARI 2019."<<endl;
      cout<<"\t\t\t\t Press  '4' for Mercedes Benz 2018."<<endl;
      cout<<"\t\t\t\t Press  '5' for Mehran VXR 2013."<<endl;
      cout<<"\t\t\t\t Press  '6' for Prado TX 2017."<<endl;
      cout<<"\t\t\t\t Press  '7' for Cultus 2016"<<endl;

      cout<<"\t\t\t\t Press  '8' for Honda 2020."<<endl;
      cout<<"\t\t\t\t Press  '9' for Suzuki liana 2019."<<endl;
      cout<<"\t\t\t\t Press  '10' for Audi Etron 2019."<<endl;
      cout<<"\t\t\t\t Press  '11 for Audi A6 2010."<<endl;
      cout<<"\t\t\t\t Press  '12' for Toyota 2018."<<endl;
      cout<<"\t\t\t\t Press  '13' for BMW iX."<<endl;
```

```
cout<<"\t\t\t\t Press  '14' for Corolla 2022."<<endl;
cout<<"\t\t\t\t Press  '15' for Mercedez 2020."<<endl;
cout<<endl;
cout<<"\t\t\t\t Do select the car from the above options " << endl;
cin >>car_model;
cout<<endl;
cout<<"--------------------------------------------------------------------------------"<<endl;
//selected car by user
if(car_model=="1")
{
   system("CLS");

   cout<<"The car you choosed is Parado 2021"<<endl;



   sleep(2);
}
if(car_model=="2")
{
   system("CLS");

   cout<<"The car you choosed is JLXI 2022"<<endl;



   sleep(2);
}
if(car_model=="3")
{
   system("CLS");
   cout<<"The car you choosed is  Ferarri 2019"<<endl;
```

```
    sleep(2);
}


if(car_model=="4")
{
    system("CLS");

    cout<<"The car you choosed is Mercedes Benz 2018 "<<endl;
    sleep(2);


}
if(car_model=="5")
{
    system("CLS");

    cout<<"The car you choosed is Mehran VXR 2013 "<<endl;
    sleep(2);
}
if(car_model=="6")
{
    system("CLS");

    cout<<"The car you choosed is Cultus 2016 "<<endl;
    sleep(2);
}
if(car_model=="7")
```

```
{
   system("CLS");

   cout<<"The car you choosed is Toyota Grande 2021"<<endl;
   sleep(2);
}
if(car_model=="8")
{
   system("CLS");

   cout<<"The car you choosed is Honda 2020"<<endl;
   sleep(2);
}
if(car_model=="9")
{
   system("CLS");

   cout<<"The car you choosed is Suzui liana 2019 "<<endl;
   sleep(2);
}
if(car_model=="10")
{


   system("CLS");

   cout<<"The car you choosed is Audi Etron 2019"<<endl;
   sleep(2);
}
if(car_model=="11")
```

```
{
   system("CLS");

   cout<<"The car you choosed is Audi A6 2010"<<endl;
   sleep(2);
}
if(car_model=="12")
{
   system("CLS");

   cout<<"The car you choosed is Toyota 2018"<<endl;
   sleep(2);
}
if(car_model=="13")
{
   system("CLS");

   cout<<"The car you choosed is BMW iX"<<endl;
   sleep(2);
}
if(car_model=="14")
{
   system("CLS");

   cout<<"The car you choosed is Corolla 2022"<<endl;
   sleep(2);
}
if(car_model=="15")
{
   system("CLS");
```

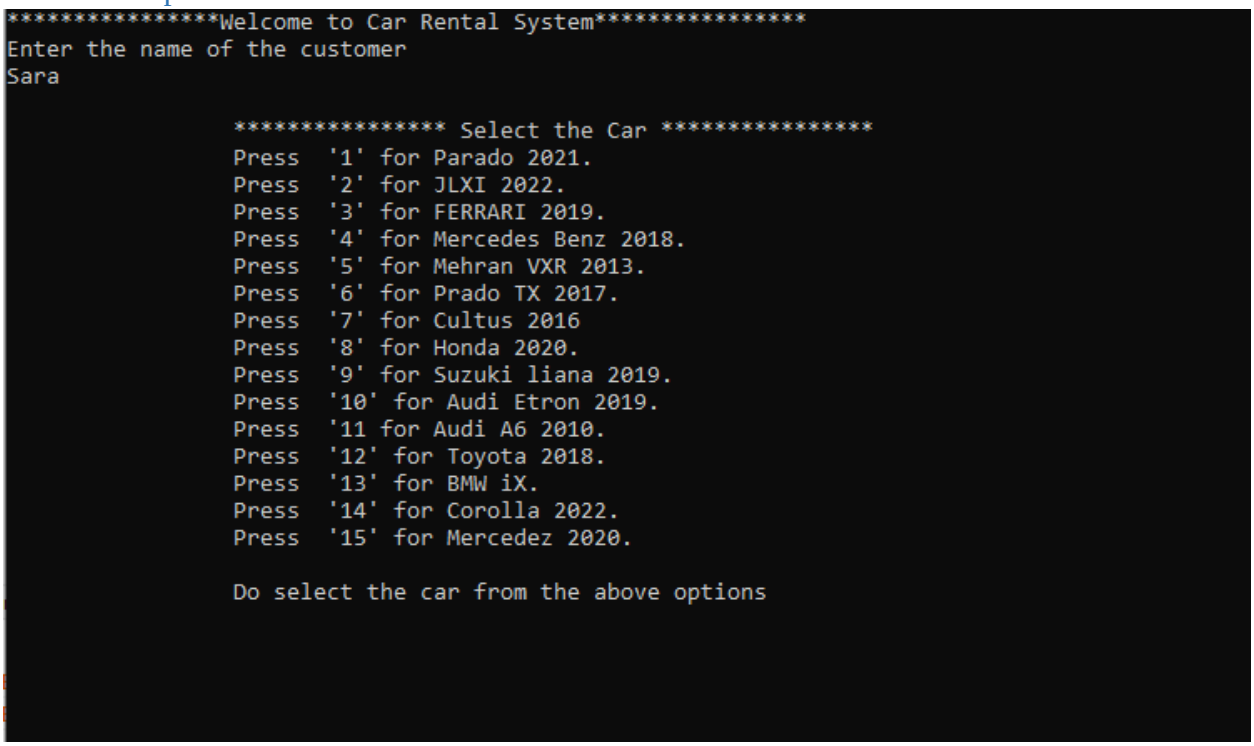
```
            cout<<"The car you choosed is Mercedez 2020"<<endl;
            sleep(2);
          }

          if(car_model <="1" && car_model >="15" )

            cout<<"The model you entered is invalid. Please try agin !!"<<endl;
      }
      while(car_model <="1" && car_model >="15" );

cout<<"**********************************************************************************
**"<<endl;
      cout<<endl;
      cout << "Do provide the following information "<<endl;
      // The data is getting from the rental services
      cout<<endl;
      cout<<endl;
      // Tell how many days you want to rent a car??
      cout<<"For How many days you want to rent a car??";
      cin >> days;
      cout<<endl;
   }

   void calculate()
   // This function calculates the rent of the car according to the user given days.
   {
      sleep(1);
      system ("CLS");
      cout<<"The rent of the car is calculating.....!!"<<endl; // Waiting for the system to run.
      sleep(2);
```

```
system ("CLS");
if(car_model == "1")
   rentalfee=days*56;
if(car_model == "2")
   rentalfee=days*60;
if(car_model == "3")
   rentalfee=days*75;
if(car_model == "4")
   rentalfee=days*50000;
if(car_model == "5")
   rentalfee=days*35000;
if(car_model == "6")
   rentalfee=days*30000;
if(car_model == "7")
   rentalfee=days*5000;
if(car_model == "8")
   rentalfee=days*8000;
if(car_model == "9")
   rentalfee=days*75000;
if(car_model == "10")
   rentalfee=days*55000;
if(car_model == "11")
   rentalfee=days*20000;
if(car_model == "12")
   rentalfee=days*65000;
if(car_model == "13")
   rentalfee=days*55000;
if(car_model == "14")
   rentalfee=days*100000;
if(car_model == "15")
```

```
        rentalfee=days*150000;
    }
    // The rent of the car to the customer is being displayed.
    void displayrent()
    {
        cout << " s                    Online Car Rental Services              "<<endl;
        cout << "    ****************************************************************"<<endl;
        cout << "    Customer Name:"<<"                "<<setw(10)<< customer_name<<endl;
        cout << "    Car Model :"   <<"                "<<setw(10)<< car_model     <<endl;
        cout << "    Car No. :"     <<"                "<<setw(10)<< " JPL 756"   <<endl;
        cout << "    Number of days:"<<"               "<<setw(10)<<  days        <<endl;
        cout << "    ****************************************************************"   <<endl;

        cout << "    Total Rental Amount is :"<<"       "<<setw(10)<<  " RS "      <<rentalfee<<endl;

        cout << "  ********************************************************************
"<<endl;
        cout<<endl;




    }
};
// Main Function calling the above functions that are used in classes.
int main()
{
    Owner obj1;

    rental obj2;
```

```
    obj2.data();


    obj2.calculate();
    cout<<endl;
    cout<<endl;
    obj1. display();
    cout<<endl;
    cout<<endl;
    obj2.displayrent();


    return 0; //end of the program
}
```

Console Output:



```
The car you choosed is  Ferarri 2019
********************************************************************************

Do provide the following information


For How many days you want to rent a car??
```

```
 Car Owner :          Anousha Malik
 Contact Number :          0338745633222
 Address :          Chashma Colony C8
 ********************************************************************************


                  Online Car Rental Services
       ***************************************************************
       Customer Name:                          Sara
       Car Model :                             3
       Car No. :                     JPL 756
       Number of days:                           15
       ***************************************************************
       The total amount of rent is :           RS 1125
 ***************************************************************
```

Conclusion:

- From the whole project, I concluded that we can make different types of programs on management systems using classes.
- I also concluded that different types of phenomena can be done in programming.
- In the car online rental system, we can also further modify things like we can update the customer's details.
- We can also ask the customer to choose one or more than one car, depending upon their choice.
- Different functionalities can be used according to the required needs of the user and what he wants to generate in output.