VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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KARNATAKA

Assignment Report
On
"CAR RENTAL SYSTEM"

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DATA STRUCTURES AND APPLICATIONS (BCS304) COURSE OF III SEMESTER

Submitted by

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Rubric – B.E. Mini-Project [BCS304]

Course outcome	Rubric/Level	Excellent (91-100%)	Good (81-90%)	Average (61-80%)	Moderate (40-60%)	Score
CO1	Identification of project proposal (05 Marks)					
CO2	Design and Implementation (10 Marks)					
CO3	Presentation skill (05 Marks)					
CO4	Report (05 Marks)					
Total						

Course outcome:

CO 1: Identification of project proposal which is relevant to subject of engineering.

CO 2: Design and implement proposed project methodology.

CO 3: Effective communication skill to assimilate their project work.

CO 4: Understanding overall project progress and performance.

Student Signature **Faculty signature**

ABSTRACT

The Car Rental Management System is a mini project designed to streamline the process of renting vehicles for indiviuals and businessess.This system provides a user-friendly interface for customers to browse available cars,make reservations,and manage bookings efficiently.The key features include a comprehensive car catalog,reservation management,user authentication, and an admin dashboard for overseeing the entire rental process.

Car rental agencies primarily serve people who require a temporary vehicle.

The car rental system provides a car catalog for the customers to select a car they want. The car rental management system restricts the number of customers and the admin decides on the accessibility to the process. The car rental system enables the customers to give feedback on the travel.

A car rental system is an autonomous system that 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. The dealer can make a lot of use of this system by providing the cars.

CHAPTER: 1
INTRODUCTION

This Car Rental System project is designed to aid the car rental company to enable renting of cars through an online system. It helps the users to search for available cars view profile and book the cars 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. They could also make payment online. The rental cars shall be categorized into economy, premium etc. Based on the type of car required by the customer, the user shall be able to make bookings. The use of internet technology has made it easy for the customers to rent a car any time. This Car Rental System makes the bookings easy. It saves time and labor. The tool shall ask the user for information such as the date and time of journey, type of car etc. Also, it will need an identification number. Using these details, the tool shall help the customer to book a car for the journey.

Customers are the reason why I feel to introduce the car rental system, to make their journey wonderful, to get them fit for the environment they are traveling into:

1.View the Cars: You, as a customer, can observe the lists of cars available in the inventory. The user can filter the records of the car based on.

2.Price: The budget is an important factor. It will be easier to choose a car rather than wondering what if I choose this car and the price is higher. No tension at all, you can analyze the car record and choose your best car.

3.Popular Cars: If you want to take a car that is popular in the system rather than thinking about the fact how this car would perform, you better look into it. The already registered customers have given feedback on their car driving experience.

4.Car Brand: If you are into the brand, you can view the cars of your favorite brand. I have taken that too into account. The car brand can be BMW, Mercedes, Aston Martin, Honda, Mahindra, etc. Just pick your pick.

5.Rent a Car: After you have selected your favorite car, you can fill the car rental form which is available online. You just have to fill in some details like how many days you want to rent the car, or if you want to rent on an hourly basis, the car details of the car model you want to

rent. After completing the rental form, you can pay a suitable amount using net banking, your credit/debit card.

6.Return a rented Car: The customer can return a car and if all the payments are cleared and the parts of the cars are not damaged, a number will be provided to the customer so that the customer can enter that number into the return car section and the record is cleared from the rent a car system and is moved to rental car history.

7.View Rental History: You as a user can view the history of the car you have rented in the car rental management system. You can keep track of the amount you have spent, the car you have driven, the number of cars you have rented, etc.

8.Feedback: You as a user can share your experience with the car rental management system. How much you loved it, or hated it. You can give the stars and provide some comments so that the dealer can assist the customers to the best capability they can.

CHAPTER: 2
PROMBLEM STATEMENT

Many people require access to transportation services on a daily basis, whether for commuting to work, running errands, or leisure activities. However, owning a car can be expensive and impractical for some individuals. A car rental system aims to provide a convenient and cost-effective solution by allowing customers to rent vehicles for short periods of time.

The challenge lies in developing a comprehensive car rental management system that facilitates seamless booking, vehicle selection, payment processing, and administrative tasks.

Key functionalities include:

1. User Registration and Authentication: Allow users to register an account and log in securely to access the rental services.

2. Vehicle Inventory Management: Maintain a database of available vehicles, including details such as make, model, year, mileage, and availability status.

3. Booking and Reservation System: Enable customers to search for available vehicles based on criteria such as location, date, and vehicle type. Allow them to reserve a vehicle for a specific duration and location.

4. Pricing and Payment: Implement a pricing structure based on factors like vehicle type, rental duration, and additional services (e.g., insurance, GPS). Integrate secure payment processing for booking confirmation and rental fees.

5. Vehicle Pickup and Return Process: Streamline the process of vehicle pickup and return, including automated check-in/out procedures, inspection protocols, and documentation handling.

6. Administrative Dashboard: Provide an interface for administrators to manage user accounts, vehicle inventory, bookings, payments, and generate reports.

7. Customer Support: Offer customer support channels (e.g., chat, email, phone) for inquiries, assistance with bookings, and resolving issues.

CHAPTER: 3

IMPLEMENTATION

```
#include <stdio.h>
#include<string.h>
struct car
{
   char customer_name[50];
   int customer_phno;
   char customer_email[30];
   char customer_ID[13];
   int n,rent,days;
   int dr,mr,yr,dret,mret,yret;
};
char
carbrand[10][20]={"HYUNDAI","SUZUKI","HONDA","TOYOTA","FORD","TATA","ME
RCEDES","AUDI","ISUZU"};
char carmodel[10][20]={"Veloster","Celerio","Civic","Avalon","Explorer","Safari","E-
Class","Q3","D-MAX"};
int carseat[10]={4,4,4,8,4,4,4,8,8};
int carrentperday[10]={950,850,450,950,750,550,1000,850,750};
int carrentpermontly[12]={31,28,31,30,31,30,31,31,30,31,30,31};
int z=0,u=0;
struct car c,ca[10],cr[10],cn={0};
void login()
{
    int a=0,i=0;
   char uname[10],c=' ';
   char pword[10],code[10];
   char user[10]="user";
   char pass[10]="admin";
   do
{
```

```
printf("\n<<<<<<<<<<<<<<<<<<<<<<<<  LOGIN FORM
>>>>>>>>>>>>>>>>>>>>>>>>  ");
   printf("\n\t\t\tENTER USERNAME:-");
   scanf("%s", &uname);
   printf(" \n\t\t\tENTER PASSWORD:-");
   while(i<10)
  {
        pword[i]=getch();
        c=pword[i];
        if(c==13) break;
        else printf("*");
        i++;
   }
    pword[i]='\0';
    i=0;
    if(strcmp(uname,"user")==0 && strcmp(pword,"admin")==0)
  {
      printf("\n\n\nNOW YOU ARE LOGGED IN. WELCOME TO OUR SYSTEM !!");
      printf("\n\n\tPress any key to continue...");
      getch();
      break;
    }
    else
   {
    printf("\nSORRY !!!!  LOGIN IS UNSUCESSFUL");
    a++;
    getch();    //holds the screen
   }
}
while(a<=2);
if (a>2)
{
     printf("\nSorry you have entered the wrong username and password for four times!!!");
    getch();
}
```

```
system("cls");
}
void car_rent()
{
   int i,f;
   int t,days1=0,days2=0,days3=0;
   char ch;
   int j,x;
   printf("WELCOME DEAR CUSTOMER!!! \n");
   display();
   printf("ENTER THE BRAND OF CAR YOU WANT TO RENT: ");
   scanf("%s",c.carrented);
   printf("ENTER DATE ON WHICH YOU WILL TAKE THE CAR(dd mm yyyy): ");
   scanf("%d%d%d",&c.dr,&c.mr,&c.yr);
   printf("ENTER THE DATE ON WHICH YOU WILL RETURN THE CAR(dd mm yyyy):
");
   scanf("%d%d%d",&c.dret,&c.mret,&c.yret);
   printf("LETS CHECK WHETHER THE CAR IS AVAILABLE OR NOT\n");
   FILE *ptr;
   ptr=fopen("Car_rent.txt","r");
   fread(ca,sizeof(ca),1,ptr);
     for(i=0;i<10;i++)
     {
      if(strcmp(ca[i].carrented,c.carrented)==0)
      {
         for(t=0;t<=ca[i].mr;t++)
            days1+=carrentpermontly[t];
         for(t=0;t<=ca[i].mret;t++)
            days2+=carrentpermontly[t];
         for(t=0;t<=c.mr;t++)
            days3+=carrentpermontly[t];
         days1+=ca[i].dr;
         days2+=ca[i].dret;
         days3+=c.dr;
         if((days3-days1)*(days2-days3)>=0)
```

```
            f=1;
        else
        f=0;
          if(f==1)
          {
           printf("Car not available.Are you interested in trying another car?\nIf yes enter Y
else enter N\n");
           getchar();
           scanf("%c",&ch);
           fclose(ptr);
           if(ch=='y'||ch=='Y')
             car_rent();
           else
           {
              printf("THANKS FOR COMING!!PLEASE VISIT AGAIN \n\n\n");
              fclose(ptr);
              break;
           }
        }
    }
    else if(strcmp(ca[i].carrented,c.carrented)!=0 ||f==0)
    {
       printf("CAR AVAILABLE!! \n");
       FILE *fp;
       fp=fopen("Car_rent","a");
       strcpy(ca[u].carrented,c.carrented);
       ca[u].dr=c.dr;
       ca[u].mr=c.mr;
       ca[u].yr=c.yr;
       ca[u].dret=c.dret;
       ca[u].mret=c.mret;
       ca[u].yret=c.yret;
       //u++;
       fwrite(&ca,sizeof(ca),1,fp);
       fclose(fp);
```

```
        printf("ENTER YOUR NAME: ");
        scanf("%s",c.customer_name);
        printf("ENTER YOUR ID NUMBER: ");
        scanf("%s",c.customer_ID);
        printf("ENTER PHONE NUMBER: ");
        scanf("%d",&c.customer_phno);
        printf("ENTER YOUR EMAIL ID: ");
        scanf("%s",c.customer_email);
        c.n=date(c.yr,c.yret,c.mr,c.mret,c.dr,c.dret);
        for(j=0;j<10;j++)
        {
           x=strcmp(c.carrented,carbrand[j]);
           if(x==0)
              break;
        }
        c.rent=c.n*carrentperday[j];
        printf("WARNING: If any damage is done to the car then you are entirely
responsible. The car has to be returned in its initial condition.\n");
        printf("Details:\n");
        printf("NAME:\t%s\nID:\t%s\nEMAIL:\t%s\nCAR RENTED:\t%s\nNUMBER OF
DAYS:\t%d\nRENT:\t%d\n",c.customer_name,c.customer_ID,c,customer_email,c.carrented,
c.n,c.rent);
        //fclose(ptr);
        strcpy(cr[z].customer_name,c.customer_name);
        strcpy(cr[z].customer_ID,c.customer_ID);
        strcpy(cr[z].carrented,c.carrented);
        cr[z].n=c.n;
        cr[z].rent=c.rent;
        //z++;
        FILE *fptr;
        fptr=fopen("Car_rent.txt","a+");
        fwrite(&cr,sizeof(cr),1,fptr);
        fclose(fptr);
        break;
      }
```

```
    }
}
int date(int y1,int y2,int m1,int m2,int d1,int d2)
{
    int i,days1=0,days2=0,days3=0 ;
        for(i=0;i<=m1;i++)
            days1+=carrentpermontly[i];
        for(i=0;i<=m2;i++)
            days2+=carrentpermontly[i];
        days1+=d1;
        days2+=d2;
        return(days2-days1);
}
void car_return()
{
    //FILE *fptr,*nptr;
    char id[13];
    int dd,mm,yy,d,m,y,flag=0,i,j;
    printf("Welcome back dear customer \n");
    printf("Please enter your id\n");
    scanf("%s",id);
    //fptr=fopen("Car_rent","r");
    //fread(cr,sizeof(struct car),1,fptr);
    for(i=0;i<10;i++)
    {
        if(strcmp(cr[i].customerId,id)==0)
        {
            flag=1;
            printf("HELLO %s\n",cr[i].customer_name);
            printf("For confirmation please enter the date on which you took the car and the date
on which you are returning the date in(dd mm yyyy)format.\n");
            scanf("%d%d%d",&dd,&mm,&yy);
            scanf("%d%d%d",&d,&m,&y);
            cr[i].days=date(yy,y,mm,m,dd,d);
            if(cr[i].days>cr[i].n)
```

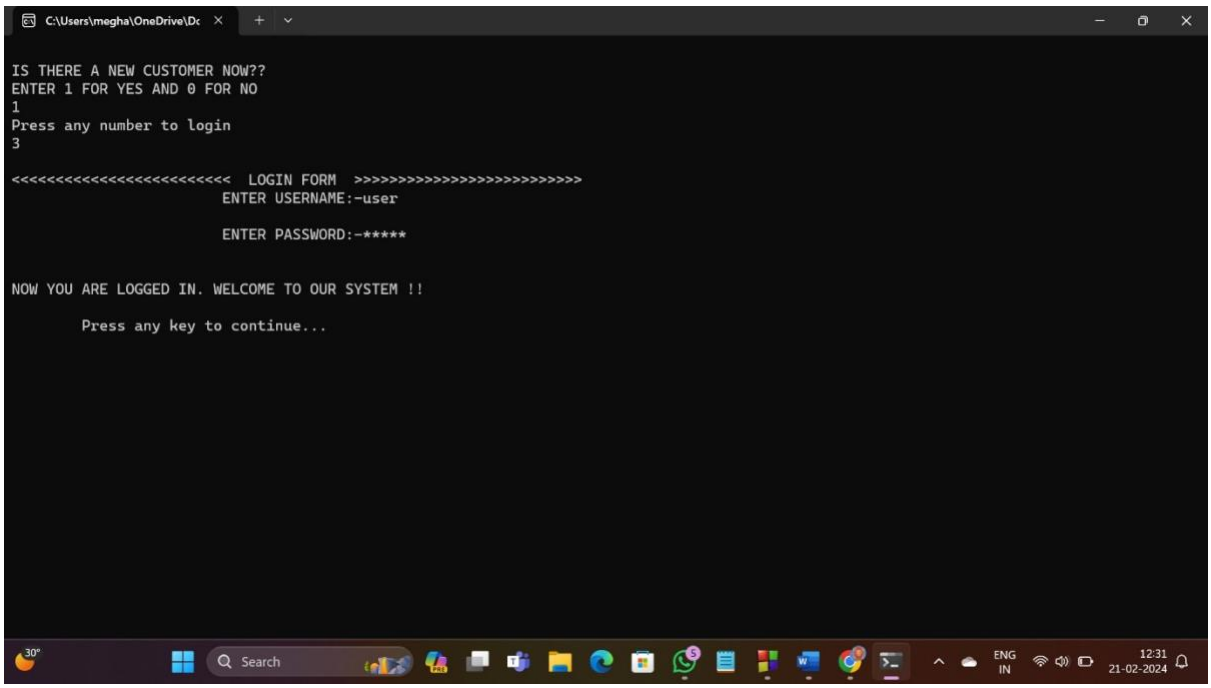
```
        {
            cr[i].rent+=50*(cr[i].days-cr[i].n);
        }
        printf("NAME:\t%s\nID:\t%s\nEMAIL:\t%s\nCAR RENTED:\t%s\nNUMBER OF
DAYS:\t%d\nRENT:\t%d\n",c.customer_name,c.customer_ID,c.customer_email,c.carrented,
c.n,c.rent);
        printf("FINAL AMOUNT:%d \n",cr[i].rent);
        printf("*****THANKYOU*****");

        break;
      }
   }
   if(flag==0)
        {
         printf("Customer not found\n");
        //fclose(fptr);
        }
      else
      {
        //nptr=fopen("Car_rent","w+");
        //fread(cr,sizeof(cr),1,nptr);
        for(j=0;j<10;j++)
        {
           if(j==i)
              memset(&cr[j].carrented[0],0,sizeof(cr[j].carrented[0]));
        }
        //fclose(fptr);
        //remove("Car_rent");
        //rename("Car_temp","Car_rent");
       // fclose(nptr);
      }
}
void display()
{
 printf("#########################################################################\n");
```

```
   printf("#    CAR BRAND   #  MODEL  # RENT PER DAY(Php) #  NO. OF SEATS
#\n");
 printf("#########################################################################\n");
   printf("#     HYUNDAI    # Veloster #      950        #       4       #\n");
   printf("#     SUZUKI     #  Celerio #      850        #       4       #\n");
   printf("#      HONDA     #  Civic   #      450        #       4       #\n");
   printf("#     TOYOTA     #  Avalon  #      950        #       8       #\n");
   printf("#      FORD      # Explorer #      750        #       4       #\n");
   printf("#      TATA      #  Safari  #      550        #       4       #\n");
   printf("#    MERCEDES    #  E-Class #     1000        #       4       #\n");
   printf("#      AUDI      #  Q3      #      850        #       8       #\n");
   printf("#     ISUZU      #  D-MAX   #      750        #       8       #\n");
 printf("#########################################################################\n");
}
int main()
{
   int q,p=0,g,h,ln;
   for(g=1;g<=365;g++)
   {
      for(h=1;h<=10;h++)
      {
         printf("\nIS THERE A NEW CUSTOMER NOW??\nENTER 1 FOR YES AND 0
FOR NO\n");
         scanf("%d",&p);
         if(p==1)
         {
            label:
            printf("Press any number to login\n");
            scanf("%d",&ln);
            login();
            printf("\t\t|-----------------------------------------------|\n”);
            printf("\t\t|                                               |\n");
            printf("\t\t|      ----------------------------             |\n");
            printf("\t\t|            CAR RENTAL SYSTEM                  |\n");
            printf("\t\t|      ----------------------------             |\n");
```

```
            printf("\t\t|                                        |\n");
            printf("\t\t|                                        |\n");
            printf("\t\t|                                        |\n");
            printf("\t\t|----------------------------------------|\n\n\n");
            for(i=0;i<80;i++)
            printf(">");
            printf("\nCurrent date and time : %s",ctime(&t));
             for(i=0;i<80;i++)
            printf("<");
            printf("\nHI!! ARE YOU HERE TO TAKE THE CAR SERVICE OR RETURN
BACK THE CAR? \n 1.WANT TO RENT A CAR.\n 2.WANT TO RETURN THE
CAR.\n");
            scanf("%d",&q);
            switch(q)
            {
               case 1:{car_rent();u++;z++;
               break;}
               case 2:car_return();
               break;
               default:{printf("Wrong choice!! Try again.\n");
               goto label;}
            }
         }
         else if(p==0)
         {
             goto label;
         }
         else
         {
            return 0;
         }
      }
   }
}
```

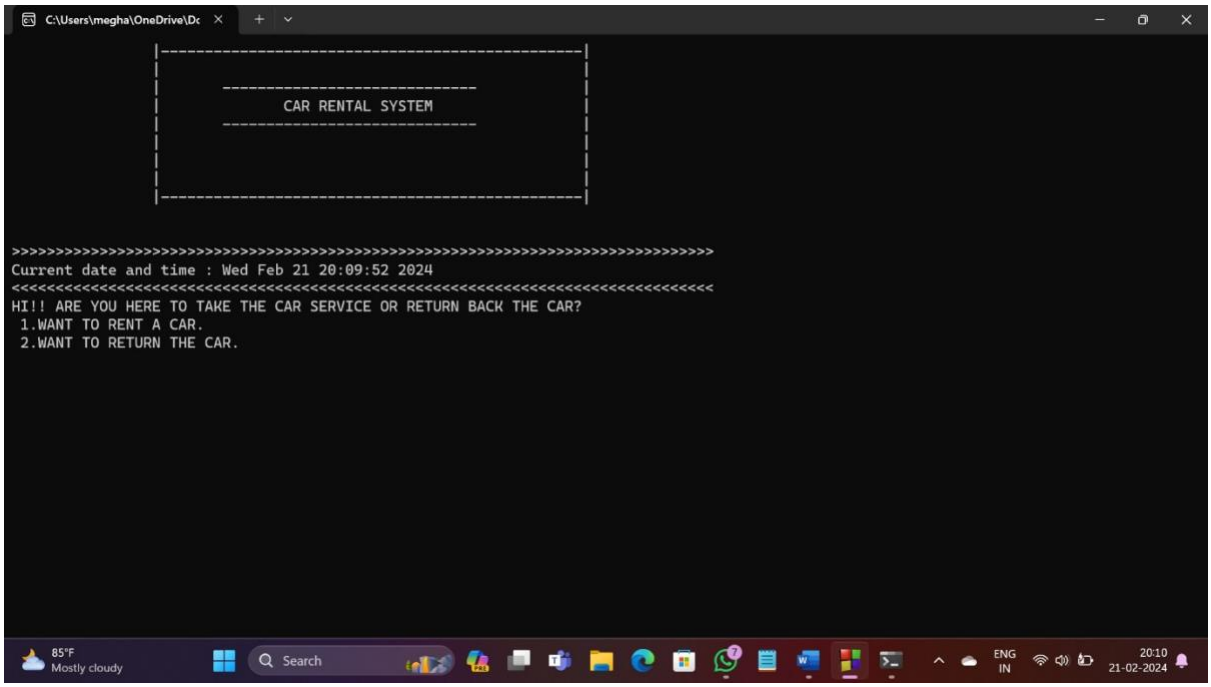
CHAPTER: 4

RESULTS/ SCREENSHOT

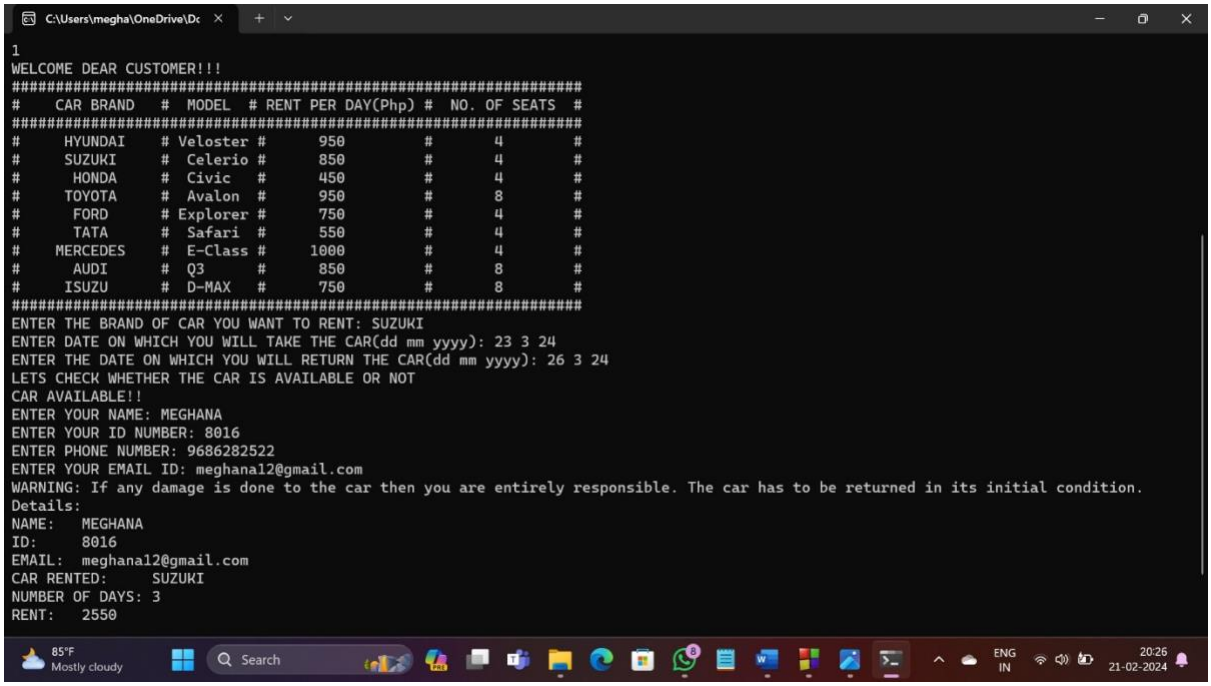


First it will check if customer is new or not, if customer is new then enter 1, then it will ask you to press any number to login after entering any number, it will moves to the login form.

In the login form it asks to enter username and password, if the username and password are correct then it will access to our website.



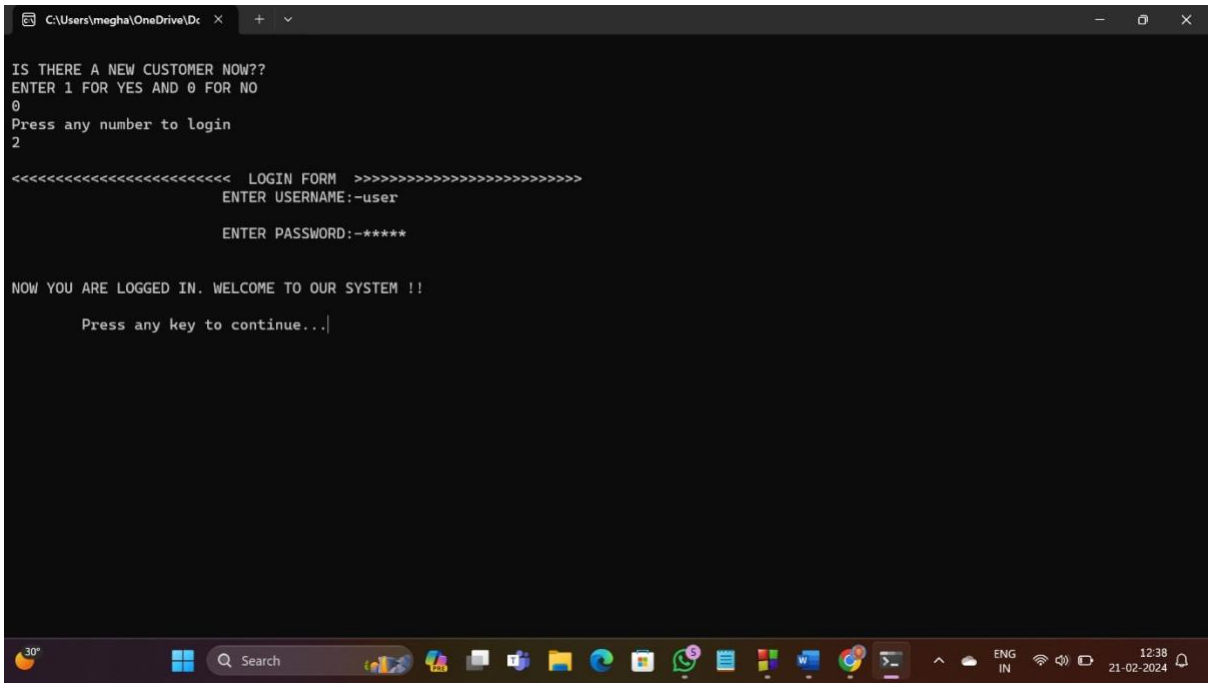
After login to the website. It will ask you to take a car service, enter 1 for rent a car or enter 2 for return a car.



FOR RENT:

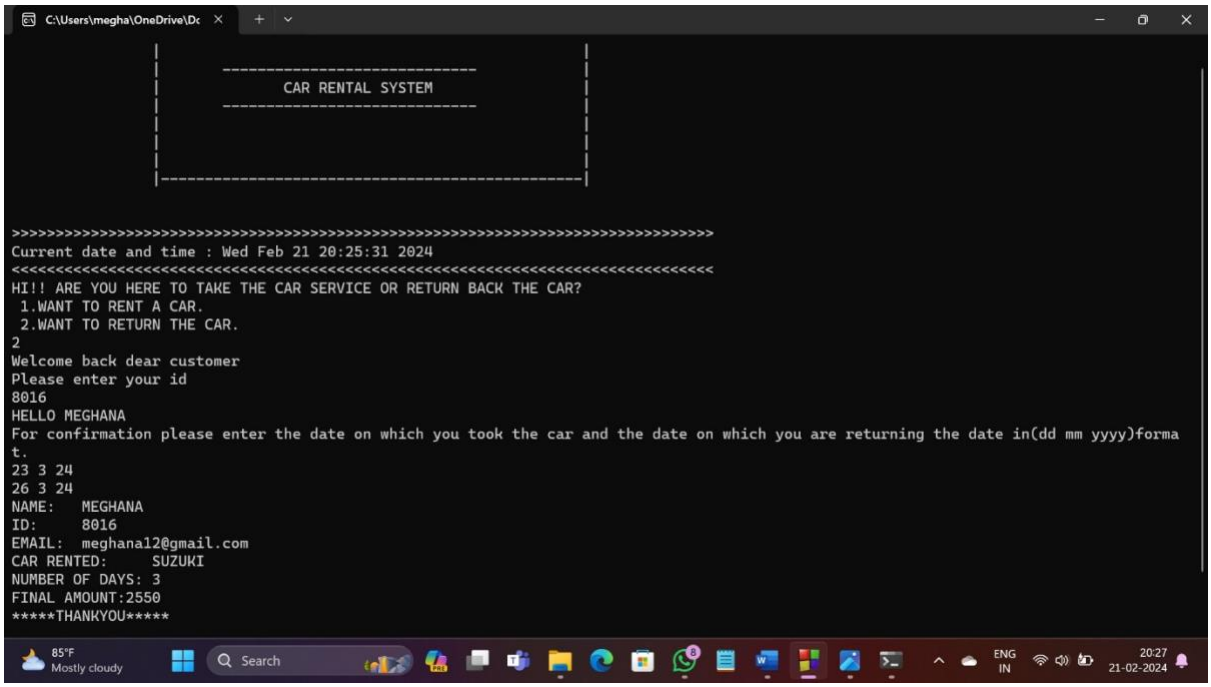
After entering 1 it will show the car details such as car brand, model, amount and no. of seats then ask you to enter which car brand you want to rent and also it ask you to enter date on which you will take the car and return the car, after entering these it will check whether the car is available or not, if the car is available it ask you to enter your name, ID number, Phone number and email ID, after entering these it will return warning(If any damage is done to the

car then you are entirely responsible. The car has to be returned in its initial condition) and also provide the details we entered.



Again it will check if customer is new or not, if customer is not new then enter 0, then it will ask you to press any number to login after entering any number, it will moves to the login form.

In the login form it ask you to enter username and password, if the username and password are correct then it will access to our website.



FOR RETURN:

After login to the website. It will ask you to take a car service, enter 1 for rent a car or enter 2 for return a car. After entering 2 it will ask you to enter your ID number after entering the ID number it will ask you to enter the date on which you took the car and the date on which you are returning for confirmation after entering dates it returns the details entered by the customer at the time of rental and also it returns the final amount.

CHAPTER: 5
CONCLUSION

In conclusion, the car rental system offers numerous benefits such as flexibility, convenience, and accessibility. By streamlining the process of renting vehicles, it saves time and effort for customers while also providing rental agencies with efficient management tools. Additionally, the system promotes sustainability by maximizing the utilization of available vehicles, reducing the need for individual car ownership. Overall, it represents a modern solution to transportation needs in today's dynamic world.

The car rental system provides a convenient solution for customers needing transportation on demand. With its user-friendly interface and diverse vehicle options, it caters to a wide range of needs. Overall, the system enhances mobility and flexibility, offering a seamless experience for both renters and rental providers alike.

REFERENCE

- https://itsourcecode.com/free-projects/c-projects/car-rental-system-in-c-with-source-code/
- https://www.geeksforgeeks.org/courses

- https://github.com//