

# OBJECT-ORIENTED PROGRAMMING

## FINAL PROJECT

### SUBMITTED TO

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### PROJECT TITLE

Travel Management System

#### **Travel Management System:**

Travel Management System (TMS) is an **end-to-end complete software solution** that helps the end-users or travel agents manage service providers, bookings, pricing, tracking, analyzing the inventory, etc.

#### **Objectives of the project:**

Travel management is the system that includes all the records of the customers and their backgrounds. It includes their personal information and also the details about the facilities which they have used while using the particular travel. It provides a record to the both, organization and the customers. It will ease the work of the person who is entering a record of their customers and will also allow them to inform them about accurate expenditures. It will also allow the customers to choose from the various options that are provided by the agency. It will store all the previous records and data which will be useful in the future

to track their customers.

### **Why did we choose this project?**

We were asked to make a project using all the basic concepts of object-oriented programming which we have learned this semester. This project was interesting and it would be beneficial in the future so we have put our efforts to make this project. This seemed to grab the attention of both the audience and the organizations. This allowed us to further test our skills and expand our knowledge.

### **Key concepts used in this project:**

- a) Classes
- b) Global function
- c) Data hiding
- d) Hypertext markup language concepts
- e) File handling
- f) Inheritance
- g) If/else/else-if
- h) Exception
- i) Go-to menu
- j) Static keyword

### **CODE:**

```
#include<iostream>
```

```
#include<fstream>
```

```
#include<iomanip>
```

```
#include<windows.h>
```

```
using namespace std;
```

```
void menu();//main menu function prototype
```

```
//CLASS 01 IT IS THE FIRST SCREEN THAT WILL BE SHOWN
```

```

class ManageMenu
{
protected:
    string userName;

public:
    ManageMenu() //Constructor
    {
        cout << "\n\n\n\n\n\n\n\n\n\n\n\n\t\t\t Enter Your Name to Continue as an
Admin: ";
        cin >> userName;
        system("CLS");
        menu(); //call to main function to load after executing the constructr
    }

    ~ManageMenu() {} //destructor
};

```

//CLASS 02

```

class Customer
{
public:
    string name, gender, address;
    int age, mobileNo, menuBack;
    static int cusID;
    char all[999];

```

// THESE WILL BE DISPLAYED ON IF WE SELECT TWO OPTIONS FROM OLD  
CUSTOMER OR NEW CUSTOMERS THEN WE HAVE TO ADD DATA

```
virtual void showbill()
{
    cout << "This is a virtual function";
}
```

```
void getDetails()
{
    ofstream fileout("old-customers.txt", ios::app);
    {
        cout << "\nEnter Customer ID: ";
        cin >> cusID;
        cout << "Enter Name: ";
        cin >> name;
        cout << "Enter Age: ";
        cin >> age;
        cout << "Enter Mobile Number: ";
        cin >> mobileNo;
        cout << "Address: ";
        cin >> address;
        cout << "Gender: ";
        cin >> gender;
    }
}
```

```
    fileout << "\nCustomer ID: " << cusID << "\nName: " << name << "\nAge: " << age
<< "\nMobile Number: " << mobileNo << "\nAddress: " << address << "\nGender: " <<
gender << endl;
```

```
    fileout.close();
```

```
    cout << "\nSaved \nNOTE: We save your details record for future purposes.\n" <<
endl;
}
```

```

void showDetails() //function to show old customer records
{
    ifstream in("old-customers.txt");
    {
        if (!in)
        {
            cout << "File Error!" << endl;
        }
        while (!(in.eof()))
        {
            in.getline(all, 999);
            cout << all << endl;
        }
        in.close();
    }
}
};

```

```

int Customer::cusID;

```

```

//CLASS 03

```

```

class Cabs
{
public:
    int cabChoice;
    int kilometers;
    float cabCost;

```

```

static float lastCabCost;

//THIS SCREEN WILL BE SHOWN WHEN WE SELECT OPTION 2 WHICH IS CABS

void cabDetails()
{
    cout << "We collaborated with fastest, safest, and smartest cab service around
the country" << endl;
    cout << "-----BAHRIA CABS-----\n" << endl;
    cout << "1. Rent a Standard Cab - Rs.20 for 1KM" << endl;
    cout << "2. Rent a Luxury Cab - Rs.30 per 1KM" << endl;

    cout << "\nEnter another key to back or," << endl;

    cout << "\nTo calculate the cost for your journey.." << endl;
    cout << "Enter which kind of cab you need: ";
    cin >> cabChoice;
    cout << "Enter Kilometers you have to travel: ";
    cin >> kilometers;

    int hireCab;

    if (cabChoice == 1) {
        cabCost = kilometers * 20;
        cout << "\nYour tour will cost " << cabCost << " rupees for a standard cab" <<
endl;
        cout << "Press 1 to hire this cab: or ";
        cout << "Press 2 to select another cab: ";
        cin >> hireCab;
        system("CLS");
    }
}

```

```

if (hireCab == 1) {
    lastCabCost = cabCost;
    cout << "\nYou have successfully hired standard cab" << endl;
    cout << "Goto Menu to take the receipt" << endl;
}
else if (hireCab == 2) {
    cabDetails();
}
else {
    cout << "Invalid Input! Redirecting to Previous Menu \nPlease Wait!" << endl;
    Sleep(1100);
    system("CLS");
    cabDetails();
}
}
else if (cabChoice == 2) {
    cabCost = kilometers * 30;
    cout << "\nYour tour will cost " << cabCost << " rupees for a luxury cab" << endl;
    cout << "Press 1 to hire this cab: or ";
    cout << "Press 2 to select another cab: ";
    cin >> hireCab;
    system("CLS");
    if (hireCab == 1) {
        lastCabCost = cabCost;
        cout << "\nYou have successfully hired luxury cab" << endl;
        cout << "Goto Menu to take the receipt" << endl;
    }
    else if (hireCab == 2) {
        cabDetails();
    }
    else {
        cout << "Invalid Input! Redirecting to Previous Menu \nPlease Wait!" << endl;
    }
}
}

```

```

        Sleep(1100);
        system("CLS");
        cabDetails();
    }
}
else {
    cout << "Invalid Input! Redirecting to Previous Menu \nPlease Wait!" << endl;
    Sleep(1100);
    system("CLS");
    menu();
}

cout << "\nPress 1 to Redirect Main Menu: ";
cin >> hireCab;
system("CLS");
if (hireCab == 1) {
    menu();
}
else {
    menu();
}
}
};

float Cabs::lastCabCost;

```

//CLASS 04



```
class Booking
```

```
{
```

```
public:
```

```
    int choiceHotel;
```

```
    int packChoice1;
```

```
    int gotoMenu;
```

```
    static float hotelCost;
```

```
//THIS SCREEN WILL BE SHOWN WHEN WE SELECT OPTION 3 WHICH IS BOOKING
```

```
void hotels()
```

```
{
```

```
    string hotelNo[] = { "Pearl Continental Hotel", "Serena Hotel", "Marriot Hotel" };
```

```
    for (int a = 0; a < 3; a++)
```

```
    {
```

```
        cout << (a + 1) << ". Hotel " << hotelNo[a] << endl;
```

```
    }
```

```
    cout << "\nCurrently we collaborated with above hotels!" << endl;
```

```
    cout << "Press any key to back or\nEnter Number of the hotel you want to book  
or see details: ";
```

```
    cin >> choiceHotel;
```

```
    system("CLS");
```

```
    if (choiceHotel == 1) {
```

```
        cout << "-----WELCOME TO HOTEL PEARL CONTINENTAL-----\n" << endl;
```

```
cout << "The Garden, food and beverage. Enjoy all you can drink, Stay cool and  
get chilled in the summer sun." << endl;
```

```
cout << "Packages offered by Pearl Continental Hotel:\n" << endl;
```

```
cout << "1. Standard Pack" << endl;
```

```
cout << "\tAll basic facilities you need just for: Rs.5000.00" << endl;
```

```
cout << "2. Premium Pack" << endl;
```

```
cout << "\tEnjoy Premium: Rs.10000.00" << endl;
```

```
cout << "3. Luxury Pack" << endl;
```

```
cout << "\tLive a Luxury at Avendra: Rs.15000.00" << endl;
```

```
cout << "\nPress another key to back or\nEnter Package number you want to  
book: ";
```

```
cin >> packChoice1;
```

```
if (packChoice1 == 1) {
```

```
    hotelCost = 5000.00;
```

```
    cout << "\nYou have successfully booked Standard Pack at Pearl Continental  
Hotel" << endl;
```

```
    cout << "Goto Menu and take the receipt" << endl;
```

```
}
```

```
else if (packChoice1 == 2) {
```

```
    hotelCost = 10000.00;
```

```
    cout << "\nYou have successfully booked Premium Pack at Pearl Continental  
Hotel" << endl;
```

```
    cout << "Goto Menu and take the receipt" << endl;
```

```
}
```

```
else if (packChoice1 == 3) {
```

```
    hotelCost = 15000.00;
```

```

        cout << "\nYou have successfully booked Luxury Pack at Pearl Continental
Hotel" << endl;

        cout << "Goto Menu to take the receipt" << endl;
    }
    else {
        cout << "Invalid Input! Redirecting to Previous Menu \nPlease Wait!" << endl;
        Sleep(1100);
        system("CLS");
        hotels();

    }

    cout << "\nPress 1 to Redirect Main Menu: ";
    cin >> gotoMenu;
    system("CLS");
    if (gotoMenu == 1) {
        menu();
    }
    else {
        menu();
    }
}

else if (choiceHotel == 2) {
    cout << "-----WELCOME TO SERENA HOTEL-----\n" << endl;

    cout << "Swimming Pool | Free WiFi | Family Rooms \n Fitness Center |
Restaurant & Bar" << endl;

    cout << "Packages Offered by Serena Hotel:\n" << endl;

    cout << "1. Family Pack" << endl;
    cout << "\t Rs.15000.00 for a day" << endl;

```

```

cout << "2. Couple Pack" << endl;
cout << "\t Rs.10000.00 for a day" << endl;
cout << "3. Single Pack" << endl;
cout << "\t 5000.00 for a day" << endl;

cout << "\nPress another key to back or\nEnter Package number you want to
book: ";
cin >> packChoice1;

if (packChoice1 == 1) {
    hotelCost = 15000.00;
    cout << "You have successfully booked Family Pack at Serena Hotel" << endl;
    cout << "Goto Menu and take the receipt" << endl;
}
else if (packChoice1 == 2) {
    hotelCost = 10000.00;
    cout << "You have successfully booked Couple Pack at Serena Hotel" << endl;
    cout << "Goto Menu and take the receipt" << endl;
}
else if (packChoice1 == 3) {
    hotelCost = 5000.00;
    cout << "You have successfully booked Single Pack at Serena Hotel" << endl;
    cout << "Goto Menu and take the receipt" << endl;
}
else {
    cout << "Invalid Input! Redirecting to Previous Menu \nPlease Wait!" << endl;
    Sleep(1100);
    system("CLS");
    hotels();
}

cout << "\nPress 1 to Redirect Main Menu: ";

```

```

cin >> gotoMenu;
system("CLS");
if (gotoMenu == 1) {
    menu();
}
else {
    menu();
}
}
else if (choiceHotel == 3) {
    cout << "-----WELCOME TO MARRIOT HOTEL-----\n" << endl;
    cout << "Brand of full-service hotels and resorts based in Bethesda, Maryland."
<< endl;

    cout << "Amazing offer in this summer: Rs.5000.00 for a one day!!!" << endl;

    cout << "\nPress another key to back or\nPress 1 to book this special package:
";

    cin >> packChoice1;

    if (packChoice1 == 1) {
        hotelCost = 5000.00;
        cout << "You have successfully booked Marriot Hotel Special Pack" << endl;
        cout << "Goto Menu and take the receipt" << endl;
    }
    else {
        cout << "Invalid Input! Redirecting to Previous Menu \nPlease Wait!" << endl;
        Sleep(1100);
        system("CLS");
        hotels();
    }

    cout << "\nPress 1 to Redirect Main Menu: ";
    cin >> gotoMenu;

```

```

        system("CLS");
        if (gotoMenu == 1) {
            menu();
        }
        else {
            menu();
        }
    }
    else {
        cout << "Invalid Input! Redirecting to Previous Menu \nPlease Wait!" << endl;
        Sleep(1100);
        system("CLS");
        menu();
    }
}
};

```

```
float Booking::hotelCost;
```

```
//CLASS 05
```

```

class Chargers : public Booking, Cabs, Customer //MULTIPLE INHERITANCE
{

public:

```

```
//THIS WILL BE DISPLAYED FOR RECEIPT
```

```
void printBill()
{
    ofstream outf("receipt.txt", ios::app); //receipt for bought items //FILING
    {
        outf << "-----BAHRIA Travel Agency-----" << endl;
        outf << "-----Receipt-----" << endl;
        outf << "_____ " << endl;

        outf << "Customer ID: " << Customer::cusID << endl << endl;
        outf << "Description\t\t Total" << endl;
        outf << "Hotel cost:\t\t " << fixed << setprecision(2) << Booking::hotelCost <<
endl;
        outf << "Travel (cab) cost:\t " << fixed << setprecision(2) << Cabs::lastCabCost
<< endl;

        outf << "_____ " << endl;
        outf << "Total Charge:\t\t " << fixed << setprecision(2) << Booking::hotelCost +
Cabs::lastCabCost << endl;
        outf << "_____ " << endl;
        outf << "-----THANK YOU-----" << endl;
    }
    outf.close();
}

void showBill()
{
    ifstream inf("receipt.txt");
    {
```

```

        if (!inf)
        {
            cout << "File Error!" << endl;
        }
        while (!(inf.eof()))
        {
            inf.getline(all, 999);
            cout << all << endl;
        }
    }
    inf.close();
}
};

```

//THE SECOND SCREEN THAT WILL BE DISPLAYED THEN WE WILL SELECT ONE OPTION  
FROM GIVEN OPTIONS

```

void menu()
{

    int Choice;
    int inChoice;
    int gotoMenu;
    cout << "\t\t * AHAD,IQRA,SAMANA Travels *\n" << endl;
    cout << "-----Main Menu-----" << endl;
}

```



```

cout << "\t _ _ _ _ _ " << endl;
cout << "\t|\t\t\t\t|" << endl;
cout << "\t|\tCustomer Management -> 1\t|" << endl;
cout << "\t|\tCabs Management    -> 2\t|" << endl;
cout << "\t|\tBookings Management -> 3\t|" << endl;
cout << "\t|\tCharges & Bill      -> 4\t|" << endl;
cout << "\t|\tExit                -> 5\t|" << endl;
cout << "\t|\t\t\t\t\t|" << endl;
cout << "\t| _ _ _ _ _ |" << endl;

```

```

cout << "\nEnter Choice: ";
cin >> Choice;

```

```

system("CLS");

```

```

Customer obj1;    //CREATING OBJECT
obj1.showbill();  //CREATING Instance
Cabs obj2;
Booking obj3;
Chargers obj4;

```

```

// THIS DISPLAY WILL BE SHOWN ON THIRD SCREEN IF WE SELECT OPTION 1

```

```

if (Choice == 1) {
    cout << "-----Customers-----\n" << endl;
    cout << "1. Enter New Customer" << endl;
    cout << "2. See Old Customers" << endl;

    cout << "\nEnter choice: ";
    cin >> inChoice;
}

```

```

system("CLS");
if (inChoice == 1) {
    obj1.getDetails();
}
else if (inChoice == 2) {
    obj1.showDetails();
}
else {
    cout << "Invalid Input! Redirecting to Previous Menu \nPlease Wait!" << endl;
    Sleep(1100);
    system("CLS");
    menu();
}
cout << "Press 1 to Redirect Main Menu: ";
cin >> gotoMenu;
system("CLS");
if (gotoMenu == 1) {
    menu();
}
else {
    menu();
}
}
else if (Choice == 2) {
    obj2.cabDetails();
}
else if (Choice == 3) {
    cout << "--> Book a Luxury Hotel using the System <--\n" << endl;
    obj3.hotels();
}
//THIS WILL BE SHOWN WHEN YOU WILL SELECT FOURTH OPTION
else if (Choice == 4) {

```

```

    cout << "-->Get your receipt<--\n" << endl;
    obj4.printBill();
    cout << "Your receipt is already printed you can get it from file path\n" << endl;
    cout << "to display the your receipt in the screen, Enter 1: or Enter another key to
back main menu: ";
    cin >> gotoMenu;
    if (gotoMenu == 1) {
        system("CLS");
        obj4.showBill();
        cout << "Press 1 to Redirect Main Menu: ";
        cin >> gotoMenu;
        system("CLS");
        if (gotoMenu == 1) {
            menu();
        }
        else {
            menu();
        }
    }
    else {
        system("CLS");
        menu();
    }
}

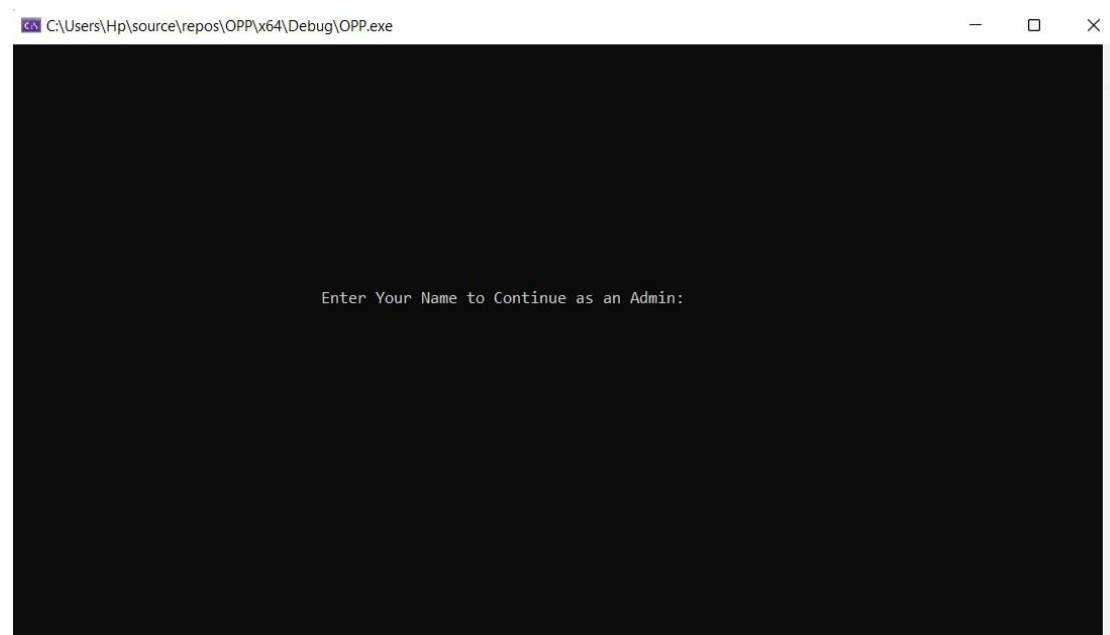
else if (Choice == 5) {
    cout << "\n\n\t--GOOD-BYE!--" << endl;
    Sleep(1100);
    system("CLS");
    //ManageMenu();
}

else {
    cout << "Invalid Input! Redirecting to Previous Menu \nPlease Wait!" << endl;

```

```
        Sleep(1100);  
        system("CLS");  
        menu();  
    }  
}  
  
int main()  
{  
    ManageMenu startObj;  
  
    return 0;  
}
```

### Output:



```
C:\Users\Hp\source\repos\OPP\x64\Debug\OPP.exe
* AHAD,IQRA,SAMANA Travels *

-----Main Menu-----

    Customer Management -> 1
    Cabs Management     -> 2
    Bookings Management -> 3
    Charges & Bill       -> 4
    Exit                 -> 5

Enter Choice: _
```

```
C:\Users\Hp\source\repos\OPP\x64\Debug\OPP.exe
-----Customers-----

1. Enter New Customer
2. See Old Customers

Enter choice: _
```

```
C:\Users\Hp\source\repos\OPP\x64\Debug\OPP.exe

Enter Customer ID: 123456
Enter Name: USER
Enter Age: 20
Enter Mobile Number: 12345
Address: ABCDEFGH
Gender: MALE

Saved
NOTE: We save your details record for future purposes.

Press 1 to Redirect Main Menu:
```

```
C:\Users\Hp\source\repos\OPP\x64\Debug\OPP.exe

We collaborated with fastest, safest, and smartest cab service around the country
-----BAHRIA CABS-----

1. Rent a Standard Cab - Rs.20 for 1KM
2. Rent a Luxury Cab - Rs.30 per 1KM

Enter another key to back or,

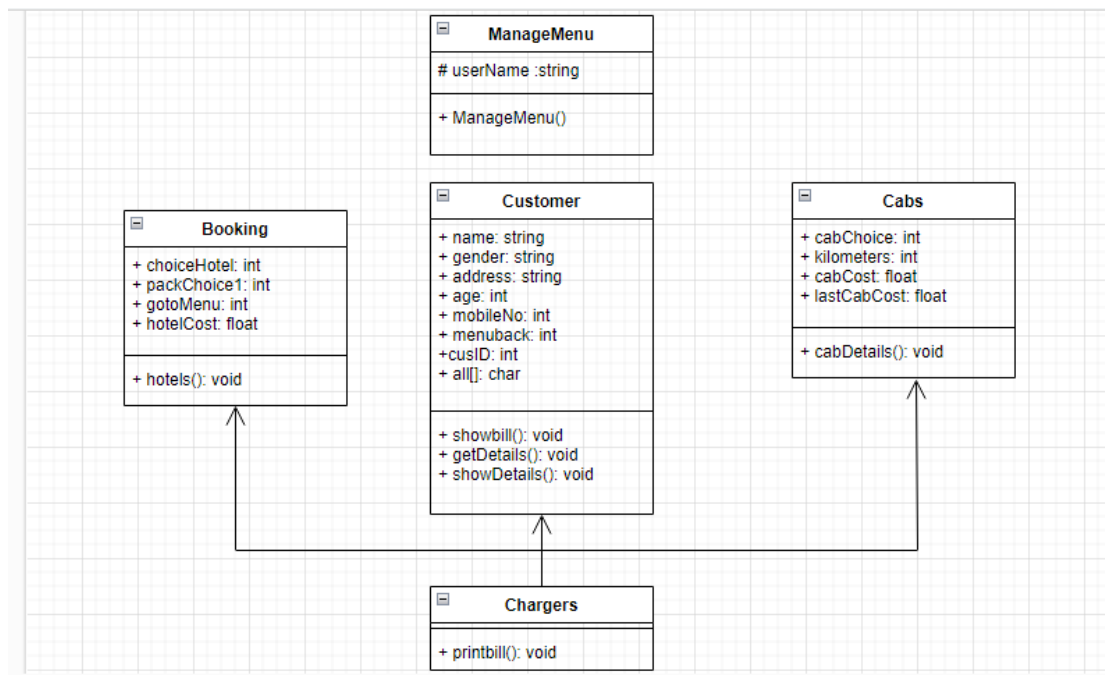
To calculate the cost for your journey..
Enter which kind of cab you need: █
```

```
C:\Users\Hp\source\repos\OPP\x64\Debug\OPP.exe
--> Book a Luxury Hotel using the System <--
1. Hotel Pearl Continental Hotel
2. Hotel Serena Hotel
3. Hotel Marriot Hotel

Currently we collaborated with above hotels!
Press any key to back or
Enter Number of the hotel you want to book or see details: _
```

```
C:\Users\Hp\source\repos\OPP\x64\Debug\OPP.exe
-----BAHRIA Travel Agency-----
-----Receipt-----
Customer ID: 0
Description      Total
Hotel cost:      0.00
Travel (cab) cost: 2010.00
Total Charge:    2010.00
-----THANK YOU-----
-----BAHRIA Travel Agency-----
-----Receipt-----
Customer ID: 0
Description      Total
Hotel cost:      0.00
Travel (cab) cost: 0.00
Total Charge:    0.00
-----THANK YOU-----
-----BAHRIA Travel Agency-----
-----Receipt-----
Customer ID: 0
Description      Total
```

## UML Diagram:



## Conclusion:

So from this project, we have learned that by using the basic concepts of Object-oriented programming and Computer programming we can make a working project which would be able to collect and store data.