**Java Inheritance and Interfaces**

**Inheritance Interfaces I**

The Customer class can be defined in a single class. But there are different kinds of room like lodging room, party hall or conference hall. Each type may have different requirements, but all belongs to room.

Create a class Hotel with the following data members:

name, hotelId, address and roomList

and member functions

* addRoom – with room object as argument
* display

After creating the Hotel class, we need to design the Room class. The addRoom() method in the hotel class should add the new room add the room object to the room list.

The Room class is defined as below,

Create a class Room with the following data members:

    id, rate, hours,

and a constructor with all the data members as arguments.

The rate is defined per unit time (as defined in 'hours')

The hours is the unit time for which the rate holds.

(So the total cost can be calculated as rate\*totalTime/hour )

 Create a class HotelRoom which extends Room with data members:  
    roomType, wifi

 Create a class Hall which extends Room with data members  
    capacity, soundSystem

 Create a class PartyHall which extends Hall with data members

* type - can be Single, Double or Delux.
* amenities - cost for extra amenities

Create a class ConferenceHall which extends Hall with data members  
    wifiHall, projector

Define rate as following:

For hotel room:

* Single -1000 for 24 hours
* Double – 1500 for 24hours
* Delux – 2000 for 24hours

For Party Hall – 200 per hour

For Conference Hall – 250 per hour

Don't worry about the amenities cost and extra cost for other facilities like wifi, AC, etc..

**Sample Input and Output:**

Enter the Hotel Details

Enter the Hotel name

**taj**

Enter the Hotel Location

**cbe**

Enter the Room name

1.Hotel Room

2.Hall

**1**

Enter the Room Type

1.Single

2.Double

3.Delux

**1**

Need WiFi ??(true/false)

**true**

Do you want to add another room?(y/n)

**y**

Enter the Room name

1.Hotel Room

2.Hall

**2**

Enter the Hall Type

1.Party Hall

2.Conference Hall

**2**

Enter the Capacity

**100**

Need soundSystem ??(true/false)

**true**

Need WiFi ??(true/false)

**true**

Need Projector ??(true/false)

**true**

Do you want to add another room?(y/n)

**y**

Enter the Room name

1.Hotel Room

2.Hall

**2**

Enter the Hall Type

1.Party Hall

2.Conference Hall

**2**

Enter the Capacity

**50**

Need soundSystem ??(true/false)

**true**

Need WiFi ??(true/false)

**false**

Need Projector ??(true/false)

**true**

Do you want to add another room?(y/n)

**n**

Hotel Room Details :

Lodge Room

Room ID : 1

Room Type : Single

wifi : true

Room Rate : 1000

Conference Hall

Room ID : 2

Capacity : 100

Sound System : true

Wifi : true

Projector : true

Room Rate : 250

Conference Hall

Room ID : 3

Capacity : 50

Sound System : true

Wifi : false

Projector : true

Room Rate : 250

**Inheritance Interfaces II**

Using Inheritance we have created different type of rooms in the previous exercise. In this exercise lets reserve a room for the customer.  
Create a class Customer with the following data members  
  fName, lName, contactNumber, eMail, proofType, proofId  
  
and member functions

* registerCustomer()

Create a class Room with the following data members:  
  
roomId, roomType, roomNumber, roomCapacity, roomAc, roomWifi, roomCabel, roomLaundry;  
  
and a constructor with all the data members as arguments.  
  
The problem flow is same as the reservation concept in the previous session.  
  
In the Main class do the required operations.  
  
  
**Sample Input and Output:**  
Enter the Hotel Details  
Enter the Hotel name  
**Monarch**  
Enter the Hotel Location  
**Ooty**  
Enter the Room name  
1.Hotel Room  
2.Hall  
**1**  
Enter the Room Type  
1.Single  
2.Double  
3.Delux  
**1**  
Need WiFi ??(true/false)  
**true**  
Do you want to add another room?(y/n)  
**y**  
Enter the Room name  
1.Hotel Room  
2.Hall  
**1**  
Enter the Room Type  
1.Single  
2.Double  
3.Delux  
**1**  
Need WiFi ??(true/false)  
**true**  
Do you want to add another room?(y/n)  
**n**  
Hotel Room Details :  
Lodge Room  
Room ID : 1  
Room Type : Single  
wifi : true  
Room Rate : 1000  
  
Lodge Room  
Room ID : 2  
Room Type : Single  
wifi : true  
Room Rate : 1000  
  
Customer Registration:  
  
Enter the customer details:  
Enter the first name:  
**Chris**  
Enter the last name:  
**Angels**  
Enter the contact number:  
**987654321**  
Enter the e-mail id:  
**chris@gmail.com**  
Enter the proof type:  
**License**  
Enter the proof id:  
**1234**  
Thank you for registering.  
The customer details are as follows  
The customer details are:  
First Name : Chris  
Last Name : Angels  
Contact Number : 987654321  
E-Mail : chris@gmail.com  
Proof Type : License  
Proof ID : 1234  
Enter the Room name  
1.Hotel Room  
2.Hall  
**1**  
Enter the Room Type  
1.Single  
2.Double  
3.Delux  
**1**  
Wi-Fi Service (true/false):  
**true**  
AVAILABILITY CHECK  
Room Number :1  
Enter the number of days :  
**2**  
Enter today's date :  
**23/12/1993**  
Enter check in date :  
**24/12/1993**  
Booking Date : 23/12/1993  
Check in Date : 24/12/1993  
No of Days : 2  
Room Rate : 2000  
Wifi Charges ( @ 100 per day ) : 200  
Vat 10 % : 240  
  
Total : 2640