**Access Specifiers Methods Constructors and Objects**

**Class and object methods Access Specifiers I**

In the previous session all the operations were done in a single Class. Now let's move on to object orientated programming.

To start with, We will concentrate on registering a customer and updating his/her email, if required.

Create Customer class with the attributes related to Customer as its data members, and all the operations related to the Customer are added as its member functions.

Create a class Customer with the following data members

fName,lName, contactNumber, eMail, proofType, proofId.

and member functions

* registerCustomer()
* display()
* updateEmail()

Add required parameters to the methods defined.

Create a Main class to get the input from the user and do all the operations.

**Sample Input Output 1:**

Registration:

Enter the customer details:

Enter the first name:

**Sasi**

Enter the last name:

**Dharan**

Enter the contact number:

**123412345**

Enter the e-mail id:

**Sasi@gmail.com**

Enter the proof type:

**Student ID**

Enter the proof id:

**12pb05**

Thank you for registering. Your id is 1..

The customer details are as follows

The customer details are:

First Name : Sasi

Last Name : Dharan

COntact Number : 123412345

E-Mail : Sasi@gmail.com

Proof Type : Student ID

Proof ID : 12pb05

Do you want to update email?(y/n)

**y**

Enter the new email:

**sasinarmi@gmail.com**

Email updated.

The customer details are as follows

The customer details are:

First Name : Sasi

Last Name : Dharan

COntact Number : 123412345

E-Mail : sasinarmi@gmail.com

Proof Type : Student ID

Proof ID : 12pb05

Thank You

**Sample Input Output 2:**  
  
Registration:  
  
Enter the customer details:  
Enter the first name:  
**thana**  
Enter the last name:  
**rathanam**  
Enter the contact number:  
**234412344**  
Enter the e-mail id:  
**thl@gmail.com**  
Enter the proof type:  
**voter id**  
Enter the proof id:  
**voter123**  
Thank you for registering. Your id is 1..  
The customer details are as follows  
The customer details are:  
First Name : thana  
Last Name : rathanam  
COntact Number : 234412344  
E-Mail : thl@gmail.com  
Proof Type : voter id  
Proof ID : voter123  
Do you want to update email?(y/n)  
**n**  
Thank You

**Class and object methods Access Specifiers II**

Using the previous exercise, we can register any number of customers by iterating the process.

In this exercise we will be learining how to add multiple objects and storing it in a list.

Lets come to the problem. Supose that you have a hotel. You need to add multiple rooms in that hotel.

So, the classes needed to be defined are Hotel and Room.

Hotel will have multiple rooms. So we'll have room list in the hotel class.

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 to the room list.

The Room class is defined below.

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.

**Sample Input and Output:**

Enter the Hotel details:

Enter the Hotel Name:

**Taj**

Enter the Hotel ID:

**1**

Enter the Hotel Address

**Mumbai**

Enter the Room Details:

Enter the Room Id:

**1**

Enter the Room Number:

**101**

Enter the Room Type:

1)Normal

2)Delux

3)Super Delux

**1**

Enter the Room Capacity:(1/2/3/4)

**1**

AC Service (true/false):

**true**

Wi-Fi Service (true/false):

**false**

Cable Service (true/false):

**true**

Laundry Service (true/false):

**true**

Do you want to add Another Room (yes/no):

**yes**

Enter the Room Details:

Enter the Room Id:

**2**

Enter the Room Number:

**102**

Enter the Room Type:

1)Normal

2)Delux

3)Super Delux

**2**

Enter the Room Capacity:(1/2/3/4)

**2**

AC Service (true/false):

**false**

Wi-Fi Service (true/false):

**true**

Cable Service (true/false):

**false**

Laundry Service (true/false):

**true**

Do you want to add Another Room (yes/no):

**no**

Thank you for booking !!

The rooms Details in Taj :

Hotel Name:Taj.

Hotel ID:1.

Hotel Address:Mumbai.

Room Details:

Room Number :101

Room Type :Normal

Services Available:

AC

Cable Connection

Laundry

Room Number :102

Room Type :Delux

Services Available:

Wi-Fi

Laundry

**Class and object methods Access Specifiers III**

From the previous exercise, we have a set of room for the hotel. In this exercise we will assign rooms to the customers when they come to book a room. The customers are registered only during the booking process.

**Note:** Assume that, each time a new customer comes.

When the customer specifies his/her needs, you should search for the requirements and assign the room if the specified room is available. Else ask the customer to alter his requirements.

The reservation happens in the Reservation class. In the Main class create a Reservation List to store all the reservations. Each time check if the room is available before assigning the room.

So, there are two things to check before assigning the room:

1. Fulfilling the requirements.
2. Availability of the room.

Create a Reservation class with folowing data members:

customer, room, checkInDate, checkOutDate, bookingDate

and member functions:

* argumented constructor.

In the Main class, after reservation, add the Reservation object to the Reservation List.

Add a Boolean variable to check the availability of the room.

* availability

Once a room is booked set the availability as false. Only when the availability is true, a customer can book a room.

For simplicity, assume that the room is unavailable after booking, irrespective of the date.

**Sample Input and Ouput:**  
  
Enter the Hotel details:  
Enter the Hotel Name:  
**taj**  
Enter the Hotel ID:  
**1**  
Enter the Hotel Address  
**cbe**  
Enter the Room Details:  
Enter the Room Id:  
**1**  
Enter the Room Number:  
**101**  
Enter the Room Type:  
1)Normal  
2)Delux  
3)Super Delux  
**1**  
Enter the Room Capacity:(1/2/3/4)  
**1**  
AC Service (true/false):  
**true**  
Wi-Fi Service (true/false):  
**true**  
Cable Service (true/false):  
**true**  
Laundry Service (true/false):  
**true**  
Do you want to add Another Room (yes/no):  
**yes**  
Enter the Room Details:  
Enter the Room Id:  
**2**  
Enter the Room Number:  
**202**  
Enter the Room Type:  
1)Normal  
2)Delux  
3)Super Delux  
**1**  
Enter the Room Capacity:(1/2/3/4)  
**1**  
AC Service (true/false):  
**true**  
Wi-Fi Service (true/false):  
**true**  
Cable Service (true/false):  
**true**  
Laundry Service (true/false):  
**true**  
Do you want to add Another Room (yes/no):  
**yes**  
Enter the Room Details:  
Enter the Room Id:  
**3**  
Enter the Room Number:  
**303**  
Enter the Room Type:  
1)Normal  
2)Delux  
3)Super Delux  
**3**  
Enter the Room Capacity:(1/2/3/4)  
**3**  
AC Service (true/false):  
**true**  
Wi-Fi Service (true/false):  
**false**  
Cable Service (true/false):  
**true**  
Laundry Service (true/false):  
**true**  
Do you want to add Another Room (yes/no):  
**no**  
Thank you for booking !!  
The rooms Details in taj :  
Hotel Name:taj.  
Hotel ID:1.  
Hotel Address:cbe.  
  
Room Details:  
  
Room Number :101  
Room Type :Normal  
Services Available:  
AC  
Wi-Fi  
Cable Connection  
Laundry  
  
Room Number :202  
Room Type :Normal  
Services Available:  
AC  
Wi-Fi  
Cable Connection  
Laundry  
  
Room Number :303  
Room Type :Super Delux  
Services Available:  
AC  
Cable Connection  
Laundry  
  
Reservation  
  
Customer Registration:  
  
Enter the customer details:  
Enter the first name:  
**karthikeyan**  
Enter the last name:  
**j**  
Enter the contact number:  
**1234123**  
Enter the e-mail id:  
**jk@a.com**  
Enter the proof type:  
**licence**  
Enter the proof id:  
**TN1234**  
  
The customer details are as follows  
The customer details are:  
First Name : karthikeyan  
Last Name : j  
Contact Number : 1234123  
E-Mail : jk@a.com  
Proof Type : licence  
Proof ID : TN1234  
  
Enter the room requirements:  
Enter the Room Type:  
1)Normal  
2)Delux  
3)Super Delux  
**2**  
Enter the Room Capacity:(1/2/3/4)  
**2**  
AC Service (true/false):  
**true**  
Wi-Fi Service (true/false):  
**true**  
Cable Service (true/false):  
**true**  
Laundry Service (true/false):  
**true**  
No rooms of specified requirements  
Please re-enter  
  
  
Enter the room requirements:  
Enter the Room Type:  
1)Normal  
2)Delux  
3)Super Delux  
**1**  
Enter the Room Capacity:(1/2/3/4)  
**1**  
AC Service (true/false):  
**true**  
Wi-Fi Service (true/false):  
**true**  
Cable Service (true/false):  
**true**  
Laundry Service (true/false):  
**true**  
Please take room number 101  
  
Enter the Booking date  
**01/05/2015**  
Enter the check-in date  
**01/05/2015**  
Enter the check-out date  
**02/05/2015**  
Do you want to perform another reservation?(y/n)  
**y**  
Reservation  
  
Customer Registration:  
  
Enter the customer details:  
Enter the first name:  
**jimmy**  
Enter the last name:  
**shar**  
Enter the contact number:  
**154789636**  
Enter the e-mail id:  
**jimmy@sha.com**  
Enter the proof type:  
**passport**  
Enter the proof id:  
**IND123**  
  
The customer details are as follows  
The customer details are:  
First Name : jimmy  
Last Name : shar  
Contact Number : 154789636  
E-Mail : jimmy@sha.com  
Proof Type : passport  
Proof ID : IND123  
  
Enter the room requirements:  
Enter the Room Type:  
1)Normal  
2)Delux  
3)Super Delux  
**1**  
Enter the Room Capacity:(1/2/3/4)  
**1**  
AC Service (true/false):  
**true**  
Wi-Fi Service (true/false):  
**true**  
Cable Service (true/false):  
**true**  
Laundry Service (true/false):  
**true**  
Please take room number 202  
  
Enter the Booking date  
**01/03/2015**  
Enter the check-in date  
**01/05/2015**  
Enter the check-out date  
**01/15/2015**  
Do you want to perform another reservation?(y/n)  
**n**  
The reservation details are as follows:  
  
karthikeyan - 101 - 01/05/2015 - 01/05/2015 - 02/05/2015  
jimmy - 202 - 01/03/2015 - 01/05/2015 - 01/15/2015