

Project Phase One *Due Date: Sunday. 20/1/2023 by 11:30 pm (on ITC)*

Notes:

The Project Phases should be submitted by the due date and time (Late Project phases will not be accepted for any reason) on ITC.

The project phases are individual student effort and copying those phases will be treated as a cheating attempt, which may lead to FAILING the course.

Hotel reservation system

In this Phase, you need to create two classes: Room and Hotel, in addition to the Driver class that you created in Phase I. All details of these classes are given in the following UML diagrams.

Room
- roomNumber: int - roomType: String - isRoomAvailable: Boolean - customerName: String
+ Room(roomNumber : int) + isRoomAvailable(): boolean + reserve(): void + delete(): void + getRoomNumber(): int + setRoomNumber(roomNumber : int): void + getRoomType(): string + setRoomType(roomType : string): void + getCustomerName(): string + setCustomerName(customerName : string): void

Hotel
- hotelName: String - hotelAddress: String - <u>MAX ROOM NUMBER</u> : int - rooms: Room[] - scan: Scanner
+ Hotel() + Hotel(String name, String adress, int maxRoomNumber) + reserveRoom(): void - selectRoomType(int roomNumber): void + changeRoomType(): void + deleteReservedRoom(): void + deleteAllReservedRooms(): void + showAllReservedRoomsInformation(): void - checkRoomType(String roomType): Boolean - askForRoomNumber(): int - listAvaliableRooms(): void +getName(): String +setName(String name): void +getAddress(): String +setAddress(String address): void

You need to convert all methods you created in Phase I from Driver class to Hotel class and edit them to have the complete function.

In Driver class, you need to create an object from Hotel class and show the menu options and call all methods from hotel object.

In this phase, the program will display the following main menu to the user (we don't need option 2 from phase 1) :

Please Select an Option (1-6):

1- Reserve an available room.

2- Choose room type.

3- Delete the reserved room.

4- Delete all reserved rooms.

5- Show all reserved room information.

6- Exit System

Room class details:

- **Void reserve();**
This method will mark the room as not available (isRoomAvailable = false).
- **Void delete();**
This method will mark the room as available (isRoomAvailable = true).
- **boolean isRoomAvailable ();**
This method will return the status of the room whether it is available or not (true or false).

Hotel class details:

- **Void reserveRoom();**

In this method, you need to do the following:

- Ask the user to enter his/her name and read it.
- List all available rooms (Only available) to the user.
- Read the room number from the user and check if the room number is valid (01 – MAX_ROOM_NUMBER).
- If the room number is valid, check if the entered room is not Reserved yet and then mark it as reserved, else show a sorry message to the user.
- If the room is booked, ask the user to select the type of the room (Single, Double, King, Delux).

- **void SelectRoomType(int roomNumber);**

- This method will take the room number as argument and ask the user to enter the room type.
- If the room type is valid, then read this type and save it to the room number.

- **void changeRoomType();**

- Ask user to enter a valid room number.
- If the room is not booked yet, then show a sorry message that the room is not booked/reserved yet.
- If the room is booked, then ask the user to enter the room type.
 - Check if the room type is valid, if not keep asking him to enter a valid room type.
 - If the room type is already selected for the given room number, show a message to tell that the room type is already selected.
 - Else, change the room type to the new type.

- **void DeleteReservedRoom();**

- Ask user to enter a valid room number.
- Check if the room is not booked yet, show a sorry message.
- If the room is booked, then mark it as available and set the room type to null and the customer name to null.

- **void DeleteAllReservedRoom();**

- Check if there are reserved rooms and delete them from reserved rooms (mark them as available and set the room type to null and the customer's name to null), and print all rooms are deleted.
- If there is no reserved room, print that there are no reserved rooms to delete.
-

- **void showAllReservedRoomsInformation ();**

- print all reserved rooms information ("Room Number", "Room Type", "Customer Name").
- if there is no room reserved, then show a message that there is no room booked yet.

- **boolean checkRoomType (String room Type);**

- This method will take the room type as argument and return true if the type is one of: Single, Double, King, Super. And return false otherwise.

- **int askForRoomNumber ();**

This method will ask user to enter a valid room number (01 – MAX_ROOM_NUMBER) and return that number.

- If the entered room number is not valid, keep asking him to enter a valid room number.

- **int listAvaliableRooms ();**

This method will print all available rooms only (rooms number).

All private methods should be called inside Hotel class wherever is needed.

Please select an option (1-7):
1- Reserve an available room.
2- Change room type
3- Delete the reserved room.
4- Delete all reserved rooms.
5- Show all reserved rooms information.
6- Exit System.

4
Sorry, there is no reserved rooms to be deleted

Please select an option (1-7):
1- Reserve an available room.
2- Change room type
3- Delete the reserved room.
4- Delete all reserved rooms.
5- Show all reserved rooms information.
6- Exit System.

1
Please enter customer's name:

Ahmad

Available rooms:

0	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	

please enter a valid room number between 1 and 20 :

17

Thank you!, The room number: 17 has been reserved for you

Now, lets select the room type

Please select one of the following room types:

Single

Double

King

Deluxe

super

Sorry, there is no room type: super

Please select a room type as follow:

Single

Double

King

Deluxe

King

Thank you, the room type: King has been selected for you

Please select an option (1-7):
1- Reserve an available room.
2- Change room type
3- Delete the reserved room.
4- Delete all reserved rooms.
5- Show all reserved rooms information.
6- Exit System.

5

Room Number	Room Type	Customer Name
17	King	Ahmad

Please select an option (1-7):
1- Reserve an available room.
2- Change room type
3- Delete the reserved room.
4- Delete all reserved rooms.
5- Show all reserved rooms information.
6- Exit System.

2
please enter a valid room number between 1 and 20 :
25
sorry, you have entered an invalid room number
please enter a valid room number between 1 and 20 :
19
Sorry, the room number: 19 is not booked yet

Please select an option (1-7):
1- Reserve an available room.
2- Change room type
3- Delete the reserved room.
4- Delete all reserved rooms.
5- Show all reserved rooms information.
6- Exit System.

2
please enter a valid room number between 1 and 20 :
17
Please select room type as follow:
Single
Double
King
Deluxe
Double
Thank you, your room type has been changed from: King to: Double

Please select an option (1-7):
1- Reserve an available room.
2- Change room type
3- Delete the reserved room.
4- Delete all reserved rooms.
5- Show all reserved rooms information.
6- Exit System.

5
Room Number Room Type Customer Name
17 Double Ahmad

Please select an option (1-7):
1- Reserve an available room.
2- Change room type
3- Delete the reserved room.
4- Delete all reserved rooms.
5- Show all reserved rooms information.
6- Exit System.

3

please enter a valid room number between 1 and 20 :

12

The room number: 12 is not booked yet

Please select an option (1-7):

- 1- Reserve an available room.
 - 2- Change room type
 - 3- Delete the reserved room.
 - 4- Delete all reserved rooms.
 - 5- Show all reserved rooms information.
 - 6- Exit System.
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3

please enter a valid room number between 1 and 20 :

17

Thank you, the room number: 17 has been deleted

Please select an option (1-7):

- 1- Reserve an available room.
 - 2- Change room type
 - 3- Delete the reserved room.
 - 4- Delete all reserved rooms.
 - 5- Show all reserved rooms information.
 - 6- Exit System.
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5

Room Number	Room Type	Customer Name
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There are no rooms to show

Please select an option (1-7):

- 1- Reserve an available room.
 - 2- Change room type
 - 3- Delete the reserved room.
 - 4- Delete all reserved rooms.
 - 5- Show all reserved rooms information.
 - 6- Exit System.
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