

CSPP2 Remedial Exam

Marks:25

Time:3hrs

Hotel Reservations

Your task is to implement a simple hotel reservation system. This system will allow customers to request any available room, request a specific room, and cancel reservations. Since the staff is optimistic about future economic growth the reservation system also has to accommodate the growth of the hotel. In other words, the proprietor should be able to add additional rooms without disturbing existing reservations.

The Reservation class: The Reservation class is a simple class that models customer reservations, including the customer's name and the room number. As you might expect, the Reservation class provides some simple methods for maintaining an individual reservation.

Please consult the comments in the class skeleton for the details of each method's parameters and behaviors.

The Hotel class: The Hotel class models the hotel as a collection of rooms, each of which is represented as a Reservation.

To maintain the Reservations associated with each room, the Hotel class will contain an array of Reservations with default size 5. Here we have additional capabilities like ability to grow on the fly i.e more rooms can be added.

You will need to complete the following methods of the Hotel class.

Question 1: (13 marks)

● **public int reserveRoom(String person)**

This method should instantiate a Reservation and insert it into a empty room. This function should then return the room number where the room number of the Reservation and the index of the Array in which the Reservation is placed match. In the case where the hotel is full, you should return -1.

Note:Room numbers starts from 1.

● **public boolean reserveRoom(String person, int roomNum)**

This method reserves the specified room for the customer if possible. It returns true on success, else false if all the rooms are reserved or if that particular room is already reserved.

● **public void printReservations()**

This method prints out all current reservations of the hotel.

The first 4 testcase files input001.txt,input002.txt,input003.txt and input004.txt must pass for 12 marks to be awarded.

Question 2: (6 marks)

● **public void cancelReservations(String person)**

This method cancels all the reservations for the specified customer.

2 test case files input007.txt and input008.txt must pass for 6 marks to be awarded.

Question 3:(6 marks)

● **public void buildRooms(int num)**

This method will add more number(given) of rooms to the hotel without disturbing existing rooms.

2 test case files input005.txt and input006.txt must pass for 6 marks to be awarded.

The Solution Class This class contains the main() method. It creates a new Hotel and provides a menu system that yield a very simple reservation system.