Software Development II

4COSC010.2

Report

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Test cases

The following test cases (from 1 to 19) were performed on both versions (array-only and classes versions), hence Pass/fail status applies to both versions (Did not include separate test cases due to redundancy)

Test case	Expected result	Actual Result	Pass/Fail
1. (Rooms initialized correctly) After program starts, press 'E' or 'e'.	Displays all rooms to be empty (Rooms having initial values of 'e').	Displays all rooms to be empty (Rooms having initial values of 'e').	Pass
2. (Add customer "Bob" to room 5) Select 'A' or 'a', select room number 5, enter "Bob".	Press 'v'. Displays "Bob" for room 5.	Displays "Bob" for room 5.	Pass
3. (Add customer "Costa" to room 7) Select 'A' or 'a', select room number 7, enter "Costa".	Press 'v' Displays "Costa" for room 7.	Displays "Costa" for room 7.	Pass
4. (Add customer "Costa" to room 0) Select 'A' or 'a', select room number 0, enter "Dustin".	Press 'v' Displays "Dustin" for room 0.	Displays "Dustin" for room 0.	Pass
5. (Exit the program) Select 'A' or 'a', and enter 8.	Press 'A' or 'a', followed by 8. Exits program.	Exits program.	Pass

6.	(Taking additional information from customer after taking name) Select 'A' or 'a', and enter room number 4, enter "Charles".	Select 'A' or 'a', followed by 4. Enter 'Charles'. Displays "Enter number of guests for room 4", and takes input.	Takes input as 'Charles'. Displays "Enter number of guests for room 4", and takes input.	Pass
7.	(Making sure number of guests is an integer) Perform steps of task 6. Enter a string ("abc").	Select 'A' or 'a', followed by 4. Enter 'Charles'. Enter 'abc' . Prompts user again with "Please enter number" and takes input.	Prompts user again with "Please enter number" and takes input.	Pass
8.	(Taking additional information from customer after taking name) Select 'A' or 'a', and enter room number 4, enter "Charles", enter number of guests as 5, Enter first name as "Charles", enter surname as "Olivera", enter credit card number as "123abc".	Select 'A' or 'a', followed by 4. Enter 'Charles'. Displays "Enter number of guests for room 4", and takes input. Enter 5. Displays "Additional information Enter first name of customer:" and takes input. Enter "Charles". Displays "Enter surname of customer:" and takes input. Enter "Olivera". Displays "Enter credit card number of customer:" and takes input. Enter "123abc". Goes back to main Menu. Press 'V' or 'v'. Displays "room 4 occupied by Charles Customers full name is: Charles Olivera Customers credit card number is: 123abc Number of guests in room: 5".	Displays "Enter number of guests for room 4", and takes input. Displays "Additional information Enter first name of customer:" and takes input. Displays "Enter surname of customer:" and takes input. Displays "Enter credit card number of customer:" and takes input. Goes back to main Menu. Displays "room 4 occupied by Charles Customers full name is: Charles Olivera Customers credit card number is: 123abc Number of guests in room: 5".	Pass

9. Repeat the same process as of testcase number 8, for room number 2.	Repeat test case 8 steps with following details: Room name – Brian First name – Brian Surname – Ortega Number of guests – 3 Credit card number – 99 Displays "room 2 occupied by Brian Customers full name is: Brian Ortega Customers credit card number is: 99 Number of guests in room: 3".	Displays "room 2 occupied by Brian Customers full name is: Brian Ortega Customers credit card number is: 99 Number of guests in room: 3".	Pass
10. Repeat the same process as of testcase number 8, for room number 6.	Repeat test case 8 steps with following details: Room name – Joe First name – Joseph Surname – Rogan Number of guests – 4 Credit card number – d23m23t Displays " room 6 occupied by Joe Customers full name is: Joseph Rogan Customers credit card number is: d23m23t Number of guests in room: 4".	Displays " room 6 occupied by Joe Customers full name is: Joseph Rogan Customers credit card number is: d23m23t Number of guests in room: 4".	Pass

11. (Checking if view method works after performing task 8,9,10) Press 'V' or 'v'.	Press 'V' or 'v'. Display occupied rooms in "room 2 occupied by Brian Customers full name is: Brian Ortega Customers credit card number is: 99 Number of guests in room: 3" format, and empty rooms in "room 0 occupied by e Customers full name is: e e Customers credit card number is: e Number of guests in room: 0" format.	Display occupied rooms in "room 2 occupied by Brian Customers full name is: Brian Ortega Customers credit card number is: 99 Number of guests in room: 3" format, and empty rooms in "room 0 occupied by e Customers full name is: e e Customers credit card number is: e Number of guests in room: 0" format.	Pass
12. (Checking if view empty room method works after performing task 8,9,10) Press 'E' or 'e'.	Press 'E' or 'e' Display "room 0 is empty room 1 is empty room 3 is empty room 5 is empty room 7 is empty".	Display "room 0 is empty room 1 is empty room 3 is empty room 5 is empty room 7 is empty".	Pass
13. (Checking if delete method works after performing task 8,9,10) Press 'D' or 'd'. Input room number as 6. Use view option to examine 6th room to be empty.	Press 'D' or 'd'. Display "Enter room number to delete customer:" Take input. Enter 6. Goes back to menu. Enter 'V' or 'v'. Display "room 6 occupied by e Customers full name is: e e Customers credit card number is: e Number of guests in room: 0".	Display "Enter room number to delete customer:" Take input. Goes back to menu. Display "room 6 occupied by e Customers full name is: e e Customers credit card number is: e Number of guests in room: 0".	Pass
14. (Checking if find method works after performing tasks 8,9,10 and 13) Press 'F' or 'f' Input name as Charles.	Press 'F' or 'f' Display "Enter name of customer:" Take input Enter "Charles" Display "Selected customer is in room4".	Display "Selected customer is in room4".	Pass

15. (Checking if find method works after performing tasks 8,9,10 and 13) Press 'F' or 'f'. Input name as Billy.	Press 'F' or 'f'. Display "Enter name of customer:". Take input. Enter "Charles". Display "The name you are looking for cannot be found.".	Display "The name you are looking for cannot be found."	Pass
16. (Checking if find method works after performing tasks 8,9,10 and 13) Press 'F' or 'f'. Input name as e.	Press 'F' or 'f' Display "Enter name of customer:". Take input. Enter "e". Display "The name you are looking for cannot be found." .	Display "The name you are looking for cannot be found.".	Pass
17. (Checking if store method works after performing tasks 8,9,10 and 13) Press 'S' or 's'.	Press 'S' or 's' Display "File created: Hotelinfo.txt Data stored" Or "File already exists. Data stored".	Display "File created: Hotelinfo.txt Data stored" Or "File already exists. Data stored".	Pass
18. (Checking if load method works after performing tasks 8,9,10,13 and 17) Restart the program after the above-mentioned tasks are completed. Press 'L' or 'l'. Press 'V' or 'v'.	Press 'L' or 'l'. Displays "Successfully loaded!". Press 'V' or 'v'. Display previously stored rooms in "room 2 occupied by Brian Customers full name is: Brian Ortega Customers credit card number is: 99 Number of guests in room: 3" format, and empty rooms in "room 0 occupied by e Customers full name is: e e Customers credit card number is: e Number of guests in room: 0" format.	Display occupied rooms in "room 2 occupied by Brian Customers full name is: Brian Ortega Customers credit card number is: 99 Number of guests in room: 3" format, and empty rooms in "room 0 occupied by e Customers full name is: e e Customers credit card number is: e Number of guests in room: 0" format.	Pass

19. (Checking if order method works after performing task 18 and entering alphabetically diverse room names to remaining empty rooms) Enter names "Anna, Brian, Charles, Paulo, Zack" into different rooms.	Press 'A' or 'a' and, Enter "Anna for room number 3, Paulo for room number 7, and Zack for room number 0" Press 'O' or 'o'. Displays" Customer names in alphabetical order: Anna Brian Charles Paulo Zack".	Displays" Customer names in alphabetical order: Anna Brian Charles Paulo Zack".	Pass
20. (Checking the functionality of the queue) Load a data file which has all rooms occupied. Press 'A' or 'a' Press 'C' or 'c' Proceed to enter details to first element of queue array	Press 'L' or 'l' and load a fully occupied hotel data text file. Press 'A' or 'a'. Display "Hotel rooms are all occupied. You will be added to a waiting list. Press E to exit or C to continue : ..." and take input. Enter 'C' or 'c'. Display "Enter name for room" and take input. Enter "Sample0". Fill out number of guests as 3, first name as sample0-fname, surname as sample0-sname and credit card information as 123abc. Return to menu. Press 'V' or 'v' and observe all rooms to be occupied and room 4 as follows: "Room number 4 is occupied by sm Customers full name is: Stipe Miocic Customers credit card number is: 9812 Number of guests in room: 5". Press 'D' or 'd'. Press 4.	Observed room 4 details to change from: "Room number 4 is occupied by sm Customers full name is: Stipe Miocic Customers credit card number is: 9812 Number of guests in room: 5". To: "Room number 4 is occupied by Sample0 Customers full name is: sample0-fname sample0-sname Customers credit card number is: 123abc Number of guests in room: 3"	Pass

		Press 'V' or 'v' and observe room 4 details to be replaced by: Room number 4 is occupied by Sample0 Customers full name is: sample0-fname sample0-sname Customers credit card number is: 123abc Number of guests in room: 3		
21.	(Checking the functionality of the queue) Continue from test case 20. Press 'A' or 'a' Press 'C' or 'c' Proceed to enter details to the queue until queue is full.	Repeat the steps of test case 20, with detail format as "Sample1, Sample2, Sample3…" until Sample 10. Proceed to add one more element. Display "The waiting list is full!" Press 'D' or 'd' and enter 2. Press 'V' or 'v'. Observe room 2 to be: "Room number 2 is occupied by Sample1 Customers full name is: sample1-fname sample1-sname Customers credit card number is: 123abc Number of guests in room: 2"	Display "The waiting list is full!" Display "Room number 2 is occupied by Sample1 Customers full name is: sample1-fname sample1-sname Customers credit card number is: 123abc Number of guests in room: 2"	Pass

Why the above test cases were performed for validation?

Since both arrays only version and class version have identical functionalities apart from the queue, the first half of the discussion will be covering the test cases used to validate the methods used in both versions.

Initialize method

To validate whether the initialization process was successful, the view empty room method was used (will be discussed later on). After selecting the view empty rooms via pressing 'E' or 'e', it was observed that all rooms were empty (all rooms were initialized with 'e' or 0 depending on the data type). Hence the initialization method was successful.

Add method

The validation of add method was done through, adding new customer details, including room name and additional information such as: first name, surname, credit card information and number of guests in the room. If the user entered a string value for the number of guests prompt, the method would handle that exception and re-prompt the user. To check whether the adding process was through, the view method was used (will be discussed later on), where it was observed that the provided details were inserted into the selected room. If 8 was pressed the program would exit.

View method

The view method was validated by pressing the 'V' or 'v' after entering a few room details, and it was observed to display the correct information for all 8 rooms.

Empty method

This method was used to view the empty rooms in hotel, and was validated by entering a few room details and pressing 'E' or 'e'. It was observed that the all the rooms, apart from the ones containing customer details were shown.

Find method

Three test cases were used to validate the functionality of this method. The find method was accessed via pressing 'F' or 'f' and entering the desired room name. The first test case was validated by entering a name which already exists in the hotel. The find method responded with "The selected customer is in room <room number>". The second and third test cases were to enter a name which does not exist in the hotel, and to enter the letter 'e' (The initialization value), which to both the find method responded with "The name you are looking for cannot be found".

Delete method

After adding customer details, a room number was chosen to be deleted, by pressing 'D' or 'd' and proceeding to enter the desired room number. View method was used afterwards to observe the selected room number details had been set to the initial stage.

Store and Load methods

The store method creates a new text file (or alerts the user if the file already exists) and stores the details of each room line by line, which could later be accessed by the load method. This was validated by pressing 'S' or 's' after entering sufficient room details, pressing 'L' or 'l' to load the details, and finally pressing 'V' or 'v' to view the rooms. It was observed that the data which was stored earlier has been loaded successfully.

Order method

Multiple room names were entered to give a diversity of letters, and 'O' or 'o' was pressed to observe the room names printing in alphabetical order.

Queue and related functionalities

The queue has a few methods which are part of either the add method or the delete method. The enqueue method, which is a part of the add method is called once all the rooms have been occupied (checked with a method named is-full), and the user has the ability to either continue to enter details to the waiting list or exit the program. Once all the hotel rooms are occupied and the user presses 'A' or 'a', the user will be redirected to the waiting list. If 'E' or 'e' is pressed the program will end, and if 'C' or 'c' is pressed the program will proceed to take user information, and enqueue the details to the waiting list. If the waiting list is full, the user will be alerted will be alerted that the queue is full and cannot enter further details unless a customer is removed from a room. The dequeue method comes into place, upon pressing 'D' or 'd', where if the waiting list is larger than 0, the next customer in line will be added to vacant room. This can be observed by using the view method, where it is observed that the first customer details which were added to the waiting list is present in the newly deleted room.