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Cmsc140  Prof. Laratta 10/31/21

Project 3 Pseudocode & flow chart

Pseudocode

1. Const variables, numOfRooms, maxRooms, roomRates.
2. Getline statement to get the hotel location.
3. cout asking for the num of floors with cin collectiong data, must be 1-5.
4. Reeds an item of input, while the input is invalid, display an error message, read the input again, end while input validation.
5. cout asking for total amount of rooms per floor followed by a cin statement to collect data, must be 1-30.
6. Reeds an item of input, while the input is invalid, display an error message, read the input again, end while input validation.
7. Cout asking for how many different types of rooms are occupied (single, double, king, and suite) followed by cin statement to collect input, total amount of occupied rooms must not exceed the number of rooms per floor.
8. Reeds an item of input, while the input is invalid, display an error message, read the input again, end while input validation.
9. Displays the rates of each room.
10. Calculates and displays the hotel income.
11. Calculates and displays the total number of rooms.
12. Calculates and displays total number of occupied rooms.
13. Calculates and displays total number of unoccupied rooms.
14. Calculates and displays the occupancy rate.
15. Displays the floor with the minimum number of rooms.
16. If statement, if the occupancy rate is less than 60% then displays a message to improve occupancy.

FlowchartDiagram

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| --- | --- | --- | --- | --- | --- |
| Test Case # | Input | Actual Input | Expected Output | Actual Output | Did the test pass? |
| 1 | Maryland  3  31 (error)  30  4  5  6  7  31(error)  30  28  29  30  5(error)  5  5  5  5  30  5  5  5  5 | Maryland  3  31 (error)  30  4  5  6  7  31(error)  30  28  29  30  5(error)  5  5  5  5  30  5  5  5  5 | Maryland  Error  Error  Error  $6115.00  90  62  28  68.89% | Maryland  Error  Error  Error  $6115.00  90  62  28  68.89% | Yes |
| 2 | Maryland  6(error)  5  20  0  0  6  10  21  3  4  0  0  22  0  9  9  0  23  8  2  5  5  24  4  10  10  0 | Maryland  6(error)  5  20  0  0  6  10  21  3  4  0  0  22  0  9  9  0  23  8  2  5  5  24  4  10  10  0 | Maryland  Error  $8025.00  110  85  25  77.27%  1st floor has least number of rooms | Maryland  Error  $8025.00  110  85  25  77.27%  1st floor has least number of rooms | Yes |
| 3 | Maryland  2  24  6  6  6  6  25  5  5  5  5 | Maryland  2  24  6  6  6  6  25  5  5  5  5 | Maryland  $4235.00  49  44  5  89.80%  1st floor with 24 rooms has least num of rooms | Maryland  $4235.00  49  44  5  89.80%  1st floor with 24 rooms has least num of rooms | Yes |

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Lessons learned

I attempted to program this project in many ways. I was stuck and I ended up wasting lots of time. After starting over and re-programming half of my project I learned that I should have a plan before I begin coding. Next time I should spend an hour planning out how I will code a program.

For this project I used the break points and debugging techniques many times throughout my code. I had issues with storing values in my variables and debugging helped a lot. I feel that I have mastered debugging and feel confident enough to use it in any program if need be.

My project had hundreds of lines and it was very difficult to organize and keep track of my code. I wasted time trying to figure out what line needed to be fixed because there were just too many. I learned that organization is very helpful in coding and saves time in the long run if your program is going to be long and complex.