**Lessons learned Pr<3>**

Project 3 is the most complicated project so far for this semester. I specifically learned how to write a nested if else statement in a loop. That was one of the hardest parts in the program. An issue I ran into was figuring out a way to save the data from the use that was input for every iteration created from the number of floors given by the user. I wrote my code initially with the while loops to validate user input. And I struggled with figuring out which loop was best for the number rooms in each floor, at first I thought that using the do while loop was the best option because in the book it states that you should use this loop when you know for sure you are doing at least one iteration. However, while writing that code and testing it, I realized the error message would always display. I was not sure if there was a way to write a do while loop that would display an error message only after the while expression was true. So, I decide to stick with the while loop.

After I figured out a way to write the loop to ask the user for the floor numbers and the rooms in each floor, I thought this project was easy. When I got to the end, I ran into the issue of having to display the hotel income/total hotel rooms/occupied total rooms/etc. I was stuck on how I was supposed to save the information from each iteration. I thought, maybe I should create a file and then use the file to extract the information entered, or I could use the switch statement since there is only 5 floors it would be easy to create those cases. I picked using the switch statement route, so if the user enters 1 for number of floors the program would jump to case 1 and ask for the number of each room type that was occupied. When I got to case 3, I thought this program is going to go one forever when I had already started out with a simpler form that asked the right information and stored it. I just needed to learn that I was missing summing up the amounts at the end of the for loop for that after each iteration the loop would have saved the information in the total number of types of room for each type of room and then I needed another variable that calculated the total number of hotel rooms with the sum of number of rooms. This is when I started my code all over again from what I had originally. All the calculations felt easy since we have already practiced it many times.

Creating a code that would compare the values of the number of occupied rooms for each floor time to then store the floor number that had the least amount of occupied rooms and also store the number of rooms for that floor to later display if the occupancy rate was less than 60%. I watched many YouTube videos and tried to read the notes again to learned how to code this. I found a video that was actually very helpful as it showed how to create a program that used a loop, it collected positive integers from the user until the user entered a sentinel. It used a nested if else statement. In the video they compared the highest number entered and lowest number entered. This video helped me understand I needed to declare a variable for the floor that had the lowest number of occupied rooms and another that assigned the number of rooms that floor held. There was a lot of trial and error while I figured out the correct expression to use in the initial if expression. But it was helpful to watch the video for this part.

I felt that project 3 was a little broad in the description, it doesn’t necessarily say use this type of loop and you will need to nest an if statement in the code. It gives you a wide range of ways to code for this project which is nice because your applying your knowledge. It can also be tedious because like I mentioned earlier I thought I had the code down initially with just loops and then I turned into a long switch statement just to learn that I could’ve stuck with my initial code as long as I summed all the input collected. Overall, I feel that project 3 was very stressful but very satisfying when I was able to run the program and it worked.