

ITSE 2321 – OBJECT-ORIENTED PROGRAMMING (JAVA)

Program 5 – Repetition Control Structures

Write a program, in a file named **Program5.java**, that calculates the occupancy rate for a hotel. The program should start by asking the user how many floors the hotel has. A loop should then iterate once for each floor. In each iteration, the loop should ask the user for the number of rooms on the floor and how many of them are occupied.

After all the iterations, the program should display how many rooms the hotel has, how many of them are occupied, how many are unoccupied, and the percentage of rooms that are occupied.

The percentage may be calculated by dividing the number of rooms occupied by the number of rooms and then multiplying by one hundred. **Format your output to one decimal place where necessary.**

Compile your program and correct all syntax errors and warnings. **You will not receive credit for the program if it does not compile successfully.**

Run your program **two times** with the data below and save the outputs as one text file named, **Program5-output.txt**.

Run 1	Run 2
Floors on the hotel: 5	Floors on the hotel: 6
Rooms on floor 1: 10 Rooms occupied: 5	Rooms on floor 1: 12 Rooms occupied: 8
Rooms on floor 2: 12 Rooms occupied: 11	Rooms on floor 2: 11 Rooms occupied: 11
Rooms on floor 3: 8 Rooms occupied: 4	Rooms on floor 3: 10 Rooms occupied: 5
Rooms on floor 4: 10 Rooms occupied: 0	Rooms on floor 4: 10 Rooms occupied: 3
Rooms on floor 5: 12 Rooms occupied: 8	Rooms on floor 5: 9 Rooms occupied: 2
	Rooms on floor 6: 10 Rooms occupied: 0

Create a folder named, **<YourFullName>_Program5**. Copy your source code and the output file to the folder. Zip the folder, as a **“.zip”** file, and upload it to Blackboard.

Before you upload your project to Blackboard:

- Ensure that your code conforms to the style expectations set out in class and briefly discussed below.
- Make sure your variable names and methods are descriptive and follow standard capitalization conventions.
- Put comments wherever necessary. Comments at the top of each module should include your name, file name, and a description of the module. Comments at the beginning of methods describe what the method does, what the parameters are, and what the return value is. See the **Program1-Template.java** for more details.
- *Program readability and elegance are as important as correctness.* After you have written your method, read and re-read it to eliminate any redundant lines of code, and to make sure variables and methods names are intuitive and relevant.

Read the assignment very carefully to ensure that you have followed all instructions and satisfied all requirements. **You will not get full credit for this program if it is not written as instructed even if it works as expected.**