

CMSC 131 Quiz 2 Worksheet

The next quiz for the course will be on Wed, Sep 18. The following list provides additional information about the quiz.

- The quiz will be a written quiz (no computer).
- Closed book, closed notes quiz.
- **The quiz will be in lecture.**
- Answers must be neat and legible.
- Quiz instructions can be found at <http://www.cs.umd.edu/~nelson/classes/utilities/examRules.html>.
- Regarding Piazza - Feel free to post questions in Piazza regarding the worksheet and possible solutions to problems.
- We use the Gradescope system to grades your quizzes after they have been scanned. For the system to recognize your work, you **need to print your name (uppercase) and student id**. The following is an example of the information you need to provide in your quiz:

FIRSTNAME, LASTNAME (PRINT IN UPPERCASE):

MARY, SMITH

STUDENT ID (e.g. 123456789):

123456789

The following exercises cover the material to be included in this quiz. Solutions to these exercises will not be provided, but you are welcome to discuss your solutions with the TAs or instructor during office hours. It is recommended that you try these exercises on paper first (without using the computer). For input and output use the Scanner class. For this quiz you are not responsible for methods associated with the JOptionPane class (e.g., showInputDialog, showMessageDialog).

Exercises

1. When do we use a do while?
2. When do we use a for loop?
3. Write a program that reads two integer values and prints the even numbers in that range.
4. Write a program that computes the factorial of a number. For example, factorial of 4 (4!) is 24.
5. Write a program that prints the sum of odd numbers between min (inclusive) and max (inclusive). The program will read the values min and max and display the sum. You can assume min and max are integer values.
6. Write a program that reads an integer value representing the number of rows associated with a triangular diagram. After reading the value, your program will generate a triangular diagram with the specified number of rows. For example, if the user enters 4 your program will print:

```
*
**
***
****
```

7. Write a program that prints a triangle where each row has twice as many characters as the preceding one. The first row will have 2 characters. The program will read the size (an integer value) of the triangle and a character. It will then generate a triangle with a number of rows that corresponds to size and where the character provided is used for odd-numbered rows. Even-numbered rows will always use a *. We use the message "Enter size:" and "Enter character:" to read data. Below we have provided two examples of running the program. Notice your program must work for other values. Underlined text represent input provided by the user.

```
Enter size: 3
Enter character: $
$$
****
$$$$$$$$
```

```
Enter size: 4
Enter character: #
##
****
#####
*****
```