**Data Types, Operators**

1. Write a program that takes two integers (values to be given within the program) and displays the output of the following operators: addition, subtraction, multiplication, division and modulus.
2. Repeat exercise 4 using all primitive data types of Java. Analyse the result obtained for different data types.
3. Write a program to display the results of different relational operators and logical operators in Java on two Integer values and two Boolean values. Input values to be given within the program.

**Control Statements**

1. Compute the sum of the series:

1+x+x2 /2!+x3/3!+……

Definition of Done:

1. The program should ask the user to enter the value of x.
2. The program should ask the user to enter the number of terms for which the sum is to be calculated.
3. Write a Java program that asks the user to provide a single character from the alphabet. Print Vowel or Consonant, depending on the user input. If the user input is not a letter (between a and z or A and Z), or is a string of length > 1, print an error message.

Definition of Done:

1. The program asks an input from the user.
2. A single character input is taken from the user or an error message is generated.
3. The program should print “Vowel” if the entered character is a vowel and “Consonant” if the entered character is a consonant.
4. Write a Java program to display Pascal's triangle.

Definition of Done:

1. The program asks the user for the number of rows of the pascal’s triangle.
2. The Expected Output for 5 rows should be as follows.

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

1. After a successful run, the program should ask the user if he wants to try the program for some other value, and should exit only when the user wants to exit (by pressing the character ‘N’).
2. Write a Java program to display the following character rhombus structure.

Definition of Done:

1. The program asks the user for the number of rows for the rhombus structure from the user.
2. The Expected Output for 7 rows should be as follows.

A

ABA

ABCBA

ABCDCBA

ABCDEDCBA

ABCDEFEDCBA

ABCDEFGFEDCBA

ABCDEFEDCBA

ABCDEDCBA

ABCDCBA

ABCBA

ABA

A

1. After a successful run, the program should ask the user if he wants to try the program for some other value, and should exit only when the user wants to exit (by pressing the character ‘N’).