LAB 7 – do...while and for Looping

Objectives:

At the end of this lab, the students are able to:

i.   implement looping control using do...while statements
ii.   implement looping control using for statements

7.1   Activity 1

7.1.1   Objective

Writing pseudocode and Java program implementing looping control using do...while statements.

7.1.2   Problem Description

Modify the pseudocode and Java code written for Activity 1, Activity 2, Activity 3, Activity 4 and Activity 5 in the Module 6 by implementing looping control using do...while statements.

[Estimated Time: 60 minutes]

7.2   Activity 2

7.2.1   Objective

Writing pseudocode and Java program implementing looping control using for statements.

7.2.2   Problem Description

Design a pseudocode and write a Java program that prompts the user to input an integer and then outputs both the individual digits of the number and the sum of the digits. For example, the program should: output the individual digits of 3456 as 3 4 5 6 and the sum as 18, output the individual digits of 8030 as 8 0 3 0 and the sum as 11, output the individual digits of 2345526 as 2 3 4 5 5 2 6 and the sum as 27, output the individual digits of 4000 as 4 0 0 0 and the sum as 4, and output the individual digits of -2345 as 2 3 4 5 and the sum as 14.

[Estimated Time: 30 minutes]

7.3   Activity 3

7.3.1   Objective

Writing pseudocode and Java program implementing looping control using for statements.

7.3.2   Problem Description

Design a pseudocode and write a Java program that prompts the user to enter an integer number line and displays the following patterns based on the number line entered. For example, the number of line entered for the following patterns is 6.

```
Pattern I        Pattern II       Pattern III       Pattern IV
1                1 2 3 4 5 6                 1        1 2 3 4 5 6
1 2              1 2 3 4 5                 2 1          1 2 3 4 5
1 2 3            1 2 3 4                 3 2 1            1 2 3 4
1 2 3 4          1 2 3                 4 3 2 1              1 2 3
1 2 3 4 5        1 2                 5 4 3 2 1                1 2
1 2 3 4 5 6      1                 6 5 4 3 2 1                  1
```

[Estimated Time: 90 minutes]