North South University
Department of Electrical and Computer Engineering
CSE 215L: Programming Language II Lab
Lab Manual - 3
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Objective:

- To learn to use conditional statements (switch case)
- To learn the usage of loops (for, while, do-while)

Conditional Statement

switch

```
switch(case){
      case 1:
            // do things for case 1
      break;
      case 2:
            // do things for case 2
      break;
      default:
      // do things for default case
}
```

Loop

While Loop	***Do-While Loop***	***For Loop***

while (loop-continuation-condition)
{
// Loop body
Statement(s);
}
	do {
	// Loop body;
	Statement(s);
	} **while** (loop-continuation-condition);
		for (initial-action; loop-continuationcondition; action-after-each-iteration) {
		// Loop body;
		Statement(s);
		}

Nested loops consist of an outer loop and one or more inner loops. Each time the outer loop is repeated, the inner loops are reentered, and started anew. Following code is an example of a nested loop

Nested Loop

```
public class MultiplicationTable{
    public static void main(String[] args) {
        System.out.println(" Multiplication Table");
        System.out.print(" ");
        for (int j = 1; j <= 9; j++)
            System.out.print(" " + j);
            System.out.println("\n———————————————————————————————————————");
        for (int i = 1; i <= 9; i++) {
            System.out.print(i + " | ");
            for (int j = 1; j <= 9; j++) {
                System.out.printf("%4d", i * j);
            }
            System.out.println();
       }
    }
}
```

Task – 1

(*Display pyramid*) Write a program that prompts the user to enter an integer from **1** to **15** and displays a pyramid, as shown in the following sample run:

```
Enter the number of
lines: 7
           1
         2 1 2
       3 2 1 2 3
     4 3 2 1 2 3 4
   5 4 3 2 1 2 3 4 5
 6 5 4 3 2 1 2 3 4 5 6
   7 6 5 4 3 2 1 2 3 4
          5 6 7
```

Task – 2

(*Financial application: compute future tuition*) Suppose that the tuition for a university is $10,000 this year and increases 5% every year. In one year, the tuition will be $10,500. Write a program that computes the tuition in ten years and the total cost of four years' worth of tuition after the tenth year.

Task – 3

(*Calculator*) Making Calculator using the switch statement

```
Choose an operator: +, -, *, or /: +
Enter first number: 23
Enter second number: 21
23.0+21.0 = 44.0
```

Homework – 1

(*Financial application: compute CD value*) Suppose you put $10,000 into a CD with an annual percentage yield of 5.75%. After one month, the CD is worth

10000 + 10000 * 5.75 / 1200 = 10047.92

After two months, the CD is worth

10047.91 + 10047.91 * 5.75 / 1200 = 10096.06

After three months, the CD is worth

10096.06 + 10096.06 * 5.75 / 1200 =

10144.44 and so on.

Write a program that prompts the user to enter an amount (e.g., **10000**), the annual percentage yield (e.g., **5.75**), and the number of months (e.g., **18**) and displays a table as shown in the sample run.

```
Enter the initial deposit amount: 10000
Enter annual percentage yield: 5.75
Enter maturity period (number of months): 18
Month CD Value
1 10047.92
2 10096.06
...
17 10846.57
18 10898.54
```

Homework – 2

(*Longest common prefix*) Write a program that prompts the user to enter two strings and displays the largest common prefix of the two strings. Here are some sample runs:

```
Enter the first string: Welcome to C++
Enter the second string: Welcome to programming
The common prefix is Welcome to
```

Homework – 3

(*Financial application: compute future tuition*) Suppose that the tuition for a university is $10,000 this year and increases 5% every year. In one year, the tuition will be $10,500. Write a program that computes the tuition in ten years and the total cost of four years' worth of tuition after the tenth year.