Lab 7

If – else and Switch case

Name-Surname…….....Student No.....Section (LAB)……

Lab instruction

1. Open VS code or JAVA IDE in your computer.
2. Create a new java class name TestBooleanOperators.java, then write the following code.

```
import java.util.Scanner;

public class TestBooleanOperators {
  public static void main(String[] args) {
    // Create a Scanner
    Scanner input = new Scanner(System.in);

    // Receive an input
    System.out.print("Enter an integer: ");
    int number = input.nextInt();

    if (number % 2 == 0 && number % 3 == 0)
      System.out.println(number + " is divisible by 2 and 3.");

    if (number % 2 == 0 || number % 3 == 0)
      System.out.println(number + " is divisible by 2 or 3.");

    if (number % 2 == 0 ^ number % 3 == 0)
      System.out.println(number +
        " divisible by 2 or 3, but not both.");
  }
}
```

This program will test an integer number with three conditions.

1. The number is remainder (%) by 2 equal 0 *and* remainder (%) by 3 equal 0. Example 6, 12, 18, 24…

2. The number is remainder (%) by 2 equal 0 *or* remainder (%) by 3 equal 0. Example 2,3,4,6,8…

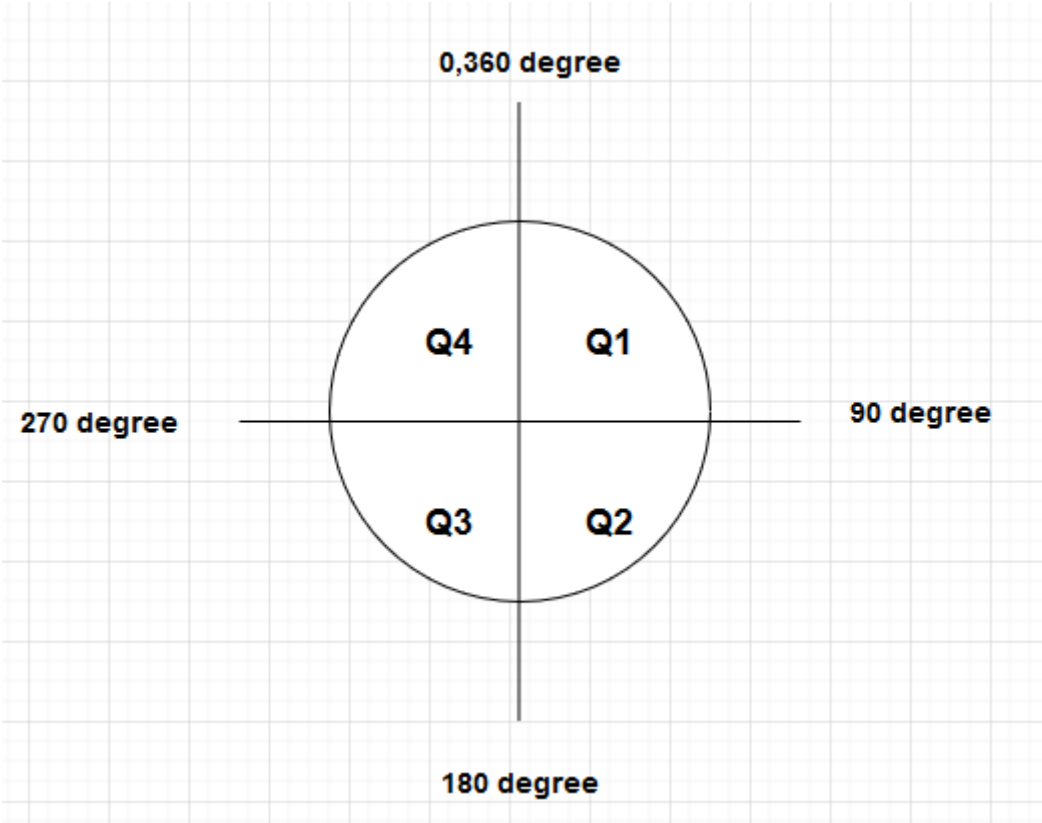
3. The number is remainder (%) by 2 equal 0 *or* remainder (%) by 3 equal 0. *But not both*. Example 2,3,8,9

3. Save and test the program by difference inputs.

4. The quadrant in which a line drawn from the origin resides is determined by the angle that the line makes with the positive X axis as follows:

Angel from the Positive X	Quadrant
Between 0 and 90 degrees	I
Between 90 and 180 degrees	II
Between 180 and 270 degrees	III
Between 270 and 360 degrees	IV

Using this information, write a Java program that accepts the angle of the line as user input and determines and displays the quadrant appropriate to the input data. (Note: If the angle is exactly 0, 90, 180, or 270 degrees, the corresponding line does not reside in any quadrant but lies on an axis.)



**********CHECK POINT #1**********

5. Write a Java program to sort three integers. The integers are enter from input dialog and store in variables num1, num2, and num3, respectively. *The program sort number so that num1≤num2≤num3.*

**********CHECK POINT #2**********

6. Create a Java program Calculator.java

```
import java.util.Scanner;
public class Calculator {
    public static void main(String[] args) {
      // Create a Scanner
      Scanner input = new Scanner(System.in);
      System.out.println("If x = 50 and y = 2");
      System.out.println("Please select the operator 1.plus 2.subtract 3.multip
ly 4.division");
      System.out.print("Enter:");
      double answer = 0;
      int x = 50;
      int y = 2;
      int menu = input.nextInt();

      switch (menu) {
        case 1:answer = x+y;
            System.out.print("Answer is "+answer);
                break;
        case 2:answer = x-y;
            System.out.print("Answer is "+answer);
                break;
        case 3:answer = x*y;
            System.out.print("Answer is "+answer);
                break;
        case 4:answer = x/y;
            System.out.print("Answer is "+answer);
                break;

        default:
          System.out.println("You put invalid choice");
              break;
        }
    }
}
```

7. Compile and Run program.

**********CHECK POINT #3**********

6. Write a Java program with **switch-case** to apply trigonometric function. The user can choose the function by input the number following the menu. The function of the program which are sine, cosine, tangent, hyperbolic sine, hyperbolic cosin, hyperbolic tan. The program will receive the number of degree and show the result in the dialog(GUI). If user fill the invalid input the program will show an error message.

trigonometric function	java.lang.Math method
sine,	Math.sin()
cosine	Math.cos()
tangent	Math.tan()
hyperbolic sine	Math.sinh()
hyperbolic cosin	Math.cosh()
hyperbolic tan	Math.tanh()

**********CHECK POINT #4**********

----------End of Lab----------