Lab Report 2
Elementary Programming

Objectives:

- To obtain input from the console using the Scanner class.
- To use variables to store data.
- To perform operations using operators +, -, *, /, and %.
- To write and evaluate numeric expressions.

Java programs

Example 1:

Write a java program to read multiple input from the keyboard (read three numbers) and display their average.

```
import java.util.Scanner; // Scanner is in the java.util package

public class ComputeAverag {

    public static void main(String[] args) {

// Create a Scanner object
        Scanner input = new Scanner(System.in);

// Prompt the user to enter three numbers
        System.out.print("Enter three numbers: ");
        double number1 = input.nextDouble();
        double number2 = input.nextDouble();
        double number3 = input.nextDouble();
        // Compute average
        double average = (number1 + number2 + number3) / 3;

// Display results
        System.out.println("The average of " + number1 + " " + number2
                + " " + number3 + " is " + average);
    }

}
```

Example 2:

Write a java program to:

- **Read a number from the keyboard and assign the number to the radius.**
- **Computer the area of a circle by the following equation:**

$$Area = \pi r^2$$

```
import java.util.Scanner; // Scanner is in the java.util package

public class ComputeAreaWithConsoleInput {

    public static void main(String[] args) {

// Create a Scanner object
        Scanner input = new Scanner(System.in);

// Prompt the user to enter a radius
        System.out.print("Enter a number for radius: ");
        double radius = input.nextDouble();

// Compute area
        double area = radius * radius * 3.14159;

// Display results
        System.out.println("The area for the circle of radius "
            + radius + " is " + area);
    }

}
```

Another solution by declaring PI as a constant

```
import java.util.Scanner;

public class ComputeAreaWithConstant {

    public static void main(String[] args) {
        final double PI = 3.14159; // Declare a constant

        // Create a Scanner object
        Scanner input = new Scanner(System.in);

// Prompt the user to enter a radius
        System.out.print("Enter a number for radius: ");
        double radius = input.nextDouble();

// Compute area
        double area = radius * radius * PI;

// Display result
        System.out.println("The area for the circle of radius "
            + radius + " is " + area);
    }
}
```

Example 3:

Write a program to converts a Fahrenheit degree to Celsius using the formula:
Celsius = (59)(Fahrenheit - 32)

```
import java.util.Scanner;

public class FahrenheitToCelsius {

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Enter a degree in Fahrenheit: ");
        double fahrenheit = input.nextDouble();

// Convert Fahrenheit to Celsius
        double celsius = (5.0 / 9) * (fahrenheit - 32);
        System.out.println("Fahrenheit " + fahrenheit + " is "
                + celsius + " in Celsius");
    }

}
```