WEEK 3

Question 1: Write a java program to add the two numbers.

Code:

```
import java.util.Scanner;
public class One {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("\nEnter first number: ");
      double num1 = scan.nextDouble();
      System.out.print("Enter second number: ");
      double num2 = scan.nextDouble();
      double result = num1 + num2;
      System.out.printf("%.2f + %.2f = %.2f \n\n", num1, num2, result);
      scan.close();
   }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 3> javac One.java
PS D:\Uni Material\LAB\sem 3\Week 3> java One
Enter first number: 25
Enter second number: 3.89
25.00 + 3.89 = 28.89
PS D:\Uni Material\LAB\sem 3\Week 3>
```

Question 2: Write a java program to multiply two floating numbers.

Code:

```
import java.util.Scanner;
public class Two {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter first number: ");
      double num1 = scan.nextDouble();
      System.out.print("Enter second number: ");
      double num2 = scan.nextDouble();
      double result = num1 * num2;
      System.out.printf("Multiplication result of %.2f and %.2f is: %.2f", num1, num2, result);
      scan.close();
   }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 3> javac Two.java
PS D:\Uni Material\LAB\sem 3\Week 3> java Two
Enter first number: 78.05
Enter second number: 68.21
Multiplication result of 78.05 and 68.21 is: 5323.79
PS D:\Uni Material\LAB\sem 3\Week 3>
```

Question 3: Write a java program to display a cube of a number.

Code:

```
import java.util.Scanner;
public class Three {
    public static void main (String[] args){
        Scanner scan = new Scanner(System.in);
        System.out.print("Enter the number: ");
        double num = scan.nextDouble();
        double result = num*num*num;
        System.out.printf("Cube of %.2f is: %.2f",num, result);
        scan.close();
    }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 3> javac Three.java
PS D:\Uni Material\LAB\sem 3\Week 3> java Three
Enter the number: 89
Cube of 89.00 is: 704969.00
PS D:\Uni Material\LAB\sem 3\Week 3>
```

Question 4: Write a Java program that takes three numbers as input to calculate and print average of numbers.

Code:

```
import java.util.Scanner;
public class Four {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        System.out.print("Enter three numbers (space-separated): ");
        double num1 = scan.nextDouble();
        double num2 = scan.nextDouble();
        double num3 = scan.nextDouble();
        double average = (num1 + num2 + num3) / 3;
        System.out.printf("Average of %.2f, %.2f and %.2f is: %.2f", num1, num2, num3, average);
        scan.close();
    }
}
```

```
PS D:\Uni Material\LAB\sem 3\Week 3> javac Four.java
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 3> java Four
Enter three numbers (space-separated): 2 3 4
Average of 2.00, 3.00 and 4.00 is: 3.00
PS D:\Uni Material\LAB\sem 3\Week 3>
```

Question 5: Write a Java program to compute the distance between two points.

Code:

```
import java.util.Scanner;
public class Five {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        System.out.print("Enter the first point (space separated - x y): ");
        double x1 = scan.nextDouble(), y1 = scan.nextDouble();
        System.out.print("Enter the second point (space separated - x y): ");
        double x2 = scan.nextDouble(), y2 = scan.nextDouble();
        double distance = Math.sqrt( ( (x1 - x2)*(x1 - x2) ) + ( (y1 - y2)*(y1-y2) ) );
        System.out.printf("Distance between (%.2f, %.2f) and (%.2f, %.2f) is: %.2f", x1, y1, x2, y2, distance);
        scan.close();
    }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 3> javac Five.java
PS D:\Uni Material\LAB\sem 3\Week 3> java Five
Enter the first point (space separated - x y): 1.12 5.3
Enter the second point (space separated - x y): 2 4.68
Distance between (1.12, 5.30) and (2.00, 4.68) is: 1.08
PS D:\Uni Material\LAB\sem 3\Week 3>
```

Optional

Question 6: Write a Java program to swap two numbers using a temporary variable.

Code:

```
import java.util.Scanner;
public class Six {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter first number (a): ");
      int a = scan.nextInt();
      System.out.print("Enter second number (b): ");
      int b = scan.nextInt();
      System.out.printf("Before swapping: a = %d, b = %d\n", a, b);
      int temp = a; a = b; b = temp;
      System.out.printf("After swapping:  a = %d, b = %d\n", a, b);
      scan.close();
   }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 3> javac Six.java
PS D:\Uni Material\LAB\sem 3\Week 3> java Six
Enter first number (a): 42
Enter second number (b): 17
Before swapping: a = 42, b = 17
After swapping:  a = 17, b = 42
PS D:\Uni Material\LAB\sem 3\Week 3>
```

Question 7: Write a Java program to calculate the area of a rectangle given its length and breadth.

Code:

```
import java.util.Scanner;
public class Seven {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter the length of rectangle: ");
      double length = scan.nextDouble();
      System.out.print("Enter the breadth of rectangle: ");
      double breadth = scan.nextDouble();
      double area = length*breadth;
      System.out.printf("Area of rectangle is : %.2f", area);
      scan.close();
   }
}
```

```
PS D:\Uni Material\LAB\sem 3\Week 3> javac Seven.java
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 3> java Seven
Enter the length of rectangle: 49
Enter the breadth of rectangle: 23
Area of rectangle is : 1127.00
PS D:\Uni Material\LAB\sem 3\Week 3>
```

Question 8: Write a Java program to convert temperature from Celsius to Fahrenheit.

Code:

```
import java.util.Scanner;
public class Eight {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        System.out.println("Select the unit you want to convert FROM:");
        System.out.println(" 1. Celsius (C or c)");
        System.out.println(" 2. Fahrenheit (F or f)");
        System.out.print("Enter your choice (1/C or 2/F): ");
        String input = scan.next().toLowerCase();
        switch (input) {
            case "1", "c" -> {
                System.out.print("Enter temperature in Celsius: ");
                double celsius = scan.nextDouble();
                double fahrenheit = (celsius * 9.0 / 5) + 32;
                System.out.printf("%.2f C = %.2f F\n", celsius, fahrenheit);
            }
            case "2", "f" -> {
                System.out.print("Enter temperature in Fahrenheit: ");
                double fahrenheit = scan.nextDouble();
                double celsius = (fahrenheit - 32) * 5.0 / 9;
                System.out.printf("%.2f F = %.2f C\n", fahrenheit, celsius);
            }
            default -> System.out.println(" Invalid input. Please enter 1, 2, C, or F.");
        }
    }
}
```

```
PS D:\Uni Material\LAB\sem 3\Week 3> javac Eight.java
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 3> java Eight
Select the unit you want to convert FROM:
 1. Celsius (C or c)
 2. Fahrenheit (F or f)
Enter your choice (1/C or 2/F): f
Enter temperature in Fahrenheit: 102
102.00 F = 38.89 C
PS D:\Uni Material\LAB\sem 3\Week 3>
```

Question 9: Write a Java program that takes two integer inputs and computes their remainder and quotient.

Code:

```
import java.util.Scanner;
public class Nine {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter the first number (dividend): ");
      int num1 = scan.nextInt();
      System.out.print("Enter the second number (divisor): ");
      int num2 = scan.nextInt();
      int quotient = num1 / num2;
      int remainder = num1 % num2;
      System.out.println("Quotient: " + quotient);
      System.out.println("Remainder: " + remainder);
      scan.close();
   }
}
```

```
PS D:\Uni Material\LAB\sem 3\Week 3> javac Nine.java
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 3> java Nine
Enter the first number (dividend): 77
Enter the second number (divisor): 12
Quotient: 6
Remainder: 5
PS D:\Uni Material\LAB\sem 3\Week 3>
```

Question 10: Write a Java program to find the circumference of a circle given its radius.

Code:

```
import java.util.Scanner;
public class Ten {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        System.out.print("Enter the radius of the circle: ");
        double radius = scan.nextDouble();
        double circumference = 2 * Math.PI * radius;
        System.out.printf("The circumference of the circle with radius %.2f is: %.2f\n", radius, circumference);
        scan.close();
    }
}
```

```
PS D:\Uni Material\LAB\sem 3\Week 3> javac Ten.java
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 3> java Ten
Enter the radius of the circle: 7.52
The circumference of the circle with radius 7.52 is: 47.25
PS D:\Uni Material\LAB\sem 3\Week 3>
```