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) {
        try (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("Addition result of %.2f and %.2f is: %.2f", num1, num2, result);
        }
    }
}
```

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: 23
Enter second number: 56.73
Addition result of 23.00 and 56.73 is: 79.73
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) {
        try (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);
        }
    }
}
```

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: 67.98
Enter second number: 45.89
Multiplication result of 67.98 and 45.89 is: 3119.60
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){

      try (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);

      }

   }

}
```

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: 9
Cube of 9.00 is: 729.00
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 the average of the numbers.

Code:

```
import java.util.Scanner;

public class Three {

   public static void main (String[] args){

      try (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);

      }

   }

}
```

Output:

```
PS D:\UNI Material\LAB\sem 3\Week 3> javac Four.java
PS D:\UNI Material\LAB\sem 3\Week 3> java Four
Enter three numbers (space-separated): 23 4 21
Average of 23.00, 4.00 and 21.00 is: 16.00
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) {

      try (Scanner scan = new Scanner(System.in)) {

         System.out.print("Enter the first point (space separated - x y): ");

         double x1 = scan.nextDouble();

         double y1 = scan.nextDouble();

         System.out.print("Enter the second point (space separated - x y): ");

         double x2 = scan.nextDouble();

         double 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);

      }

   }

}
```

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): 3 2
Enter the second point (space separated - x y): 5 6
Distance between (3.00, 2.00) and (5.00, 6.00) is: 4.47
PS D:\UNI Material\LAB\sem 3\Week 3>
```

Optional

Question 6: Write a Java program to compute the distance between two points.

Code:

```
import java.util.Scanner;

public class Six {

   public static void main(String[] args) {

      try (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);

      }

   }

}
```

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): 3
Enter second number (b): 5
Before swapping: a = 3, b = 5
After swapping:  a = 5, b = 3
PS D:\UNI Material\LAB\sem 3\Week 3>
```

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

Code:

```
import java.util.Scanner;
public class Seven {
    public static void main(String[] args) {
        try (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);
        }
    }
}
```

```
PS D:\UNI Material\LAB\sem 3\Week 3> javac Seven.java
PS D:\UNI Material\LAB\sem 3\Week 3> java Seven
Enter the length of rectangle: 24.2
Enter the breadth of rectangle: 7
Area of rectangle is : 169.40
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) {
        try (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.");
        }
    }
  }
}
```

Output:

```
PS D:\UNI Material\LAB\sem 3\Week 3> javac Eight.java
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): 1
Enter temperature in Celsius: 35
35.00°C = 95.00°F
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) {
        try (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);
        }
    }
}
```

Output:

```
PS D:\UNI Material\LAB\sem 3\Week 3> javac Nine.java
PS D:\UNI Material\LAB\sem 3\Week 3> java Nine
Enter the first number (dividend): 78
Enter the second number (divisor): 4
Quotient: 19
Remainder: 2
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) {
      try(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);
      }
   }
}
```

Output:

```
PS D:\UNI Material\LAB\sem 3\Week 3> javac Ten.java
PS D:\UNI Material\LAB\sem 3\Week 3> java Ten
Enter the radius of the circle: 3.67
The circumference of the circle with radius 3.67 is: 23.06
PS D:\UNI Material\LAB\sem 3\Week 3>
```