Rahul Anand(2380273)

Task1

task1.java × task2.java task3.java task4.java task5.java task6.java task7.java task8.java

```java
public class task1 {
    public static int sumOfNaturalNumber(int n) {
        int sum = 0;
        for (int i = 1; i <= n; i++) {
            if (i % 3 == 0 || i % 5 == 0) {
                sum += i;
            }
        }
        return sum;
    }

    public static void main(String[] args) {

        int n = 15;
        System.out.println(sumOfNaturalNumber(n));
    }
}
```

Console ×

```
<terminated> task1 [Java Application] C:\Users\2380273\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_21.0.5.v20241023-
60
```

Task2

task1.java | task2.java × | task3.java | task4.java | task5.java | task6.java | task7.java | task8.java

```java
public class task2 {
    // Method to calculate the difference
    public int calculateDifference(int n) {
        int sumOfSquares = 0;
        int sum = 0;

        for (int i = 1; i <= n; i++) {
            sumOfSquares += i * i;
            sum += i;
        }

        int squareOfSum = sum * sum;

        return squareOfSum - sumOfSquares;
    }

    public static void main(String[] args) {
        // Example usage
        int n = 10;
        task2 calculator = new task2();
        System.out.println("The difference is: " + calculator.calculateDifference(n));
    }
}
```

Console ×

```
<terminated> task2 [Java Application] C:\Users\2380273\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86
The difference is: 2640
```

Task3

task1.java | task2.java | task3.java × | task4.java | task5.java | task6.java | task7.java | task8.java

```java
public class task3 {
    // Method to check if a number is an increasing number
    public boolean checkNumber(int number) {
        String numStr = Integer.toString(number);

        for (int i = 0; i < numStr.length() - 1; i++) {
            if (numStr.charAt(i) > numStr.charAt(i + 1)) {
                return false;
            }
        }

        return true;
    }

    public static void main(String[] args) {
        // Example usage
        task3 checker = new task3();
        int number = 134468;
        System.out.println("The number " + number + " is increasing: " + checker.checkNumber(number));
    }
}
```

Console ×

```
<terminated> task3 [Java Application] C:\Users\2380273\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jr
The number 134468 is increasing: true
```

Task4

task1.java | task2.java | task3.java | task4.java × | task5.java | task6.java | task7.java | task8.java

```java
public class task4 {
    // Method to check if a number is a power of two
    public boolean checkNumber(int n) {
        if (n <= 0) {
            return false;
        }

        return (n & (n - 1)) == 0;
    }

    public static void main(String[] args) {
        // Example usage
        task4 checker = new task4();
        int number = 8;
        System.out.println("The number " + number + " is a power of two: " + checker.checkNumber(number));
    }
}
```

Console ×

```
<terminated> task4 [Java Application] C:\Users\2380273\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_21.0
The number 8 is a power of two: true
```

Task5

task1.java | task2.java | task3.java | task4.java | task5.java × | task6.java | task7.java | task8.java

```java
public class task5 {
    private int empId;
    private String empName;
    private double empSal;
    private String empAdd;
    private String empGender;
    private String empEmail;

    public task5(int empId, String empName, double empSal, String empAdd, String empGender, String empEmail) {
        this.empId = empId;
        this.empName = empName;
        this.empSal = empSal;
        this.empAdd = empAdd;
        this.empGender = empGender;
        this.empEmail = empEmail;
    }

    public void display() {
        System.out.println("Employee ID: " + empId);
        System.out.println("Employee Name: " + empName);
        System.out.println("Employee Salary: " + empSal);
        System.out.println("Employee Address: " + empAdd);
        System.out.println("Employee Gender: " + empGender);
        System.out.println("Employee Email: " + empEmail);
    }

    public static void main(String[] args) {
        task5 emp = new task5(101, "Jenny", 70000, "Hyderabad", "Male", "jenny@gmail.com");
        emp.display();
```

Console ×

```
<terminated> task5 [Java Application] C:\Users\2380273\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_21.0.5.v2
Employee Gender: Male
Employee Email: jenny@gmail.com
```

Task6

task1.java task2.java task3.java task4.java task5.java task6.java × task7.java task8.java

```java
import java.util.Scanner;

public class task6 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Input first number: ");
        int num1 = scanner.nextInt();

        System.out.print("Input second number: ");
        int num2 = scanner.nextInt();

        int sum = num1 + num2;
        int difference = num1 - num2;
        int product = num1 * num2;
        int quotient = num1 / num2;
        int remainder = num1 % num2;

        System.out.println(num1 + " + " + num2 + " = " + sum);
        System.out.println(num1 + " - " + num2 + " = " + difference);
        System.out.println(num1 + " x " + num2 + " = " + product);
        System.out.println(num1 + " / " + num2 + " = " + quotient);
        System.out.println(num1 + "  " + num2 + " = " + remainder);

        scanner.close();
```

Console ×

<terminated> task6 [Java Application] C:\Users\2380273\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win3

```
Input first number: 3
Input second number: 5
3 + 5 = 8
3 - 5 = -2
3 x 5 = 15
3 / 5 = 0
3  5 = 3
```

Task7

task1.java task2.java task3.java task4.java task5.java task6.java task7.java × task8.jav

```java
import java.util.Scanner;

public class task7 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Input the first number: ");
        int num1 = scanner.nextInt();

        System.out.print("Input the second number: ");
        int num2 = scanner.nextInt();

        System.out.print("Input the third number: ");
        int num3 = scanner.nextInt();

        int smallest = findSmallest(num1, num2, num3);

        System.out.println("The smallest value is " + smallest);

        scanner.close();
    }

    public static int findSmallest(int num1, int num2, int num3) {
        return Math.min(num1, Math.min(num2, num3));
    }
```

Console ×

<terminated> task7 [Java Application] C:\Users\2380273\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.h

```
Input the first number: 2
Input the second number: 3
Input the third number: 4
The smallest value is 2
```

Task8

task1.java task2.java task3.java task4.java task5.java task6.java task7.java task8.java

```java
import java.util.Scanner;

public class task8 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Input the three numbers
        System.out.print("Input the first number: ");
        int num1 = scanner.nextInt();

        System.out.print("Input the second number: ");
        int num2 = scanner.nextInt();

        System.out.print("Input the third number: ");
        int num3 = scanner.nextInt();

        // Compute the average
        double average = computeAverage(num1, num2, num3);

        // Print the average
        System.out.println("The average value is " + average);

        scanner.close();
    }
```

Console

<terminated> task8 [Java Application] C:\Users\2380273\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.w

```
Input the first number: 2
Input the second number: 4
Input the third number: 5
The average value is 3.6666666666666665
```