

Candidate Id: 2380155

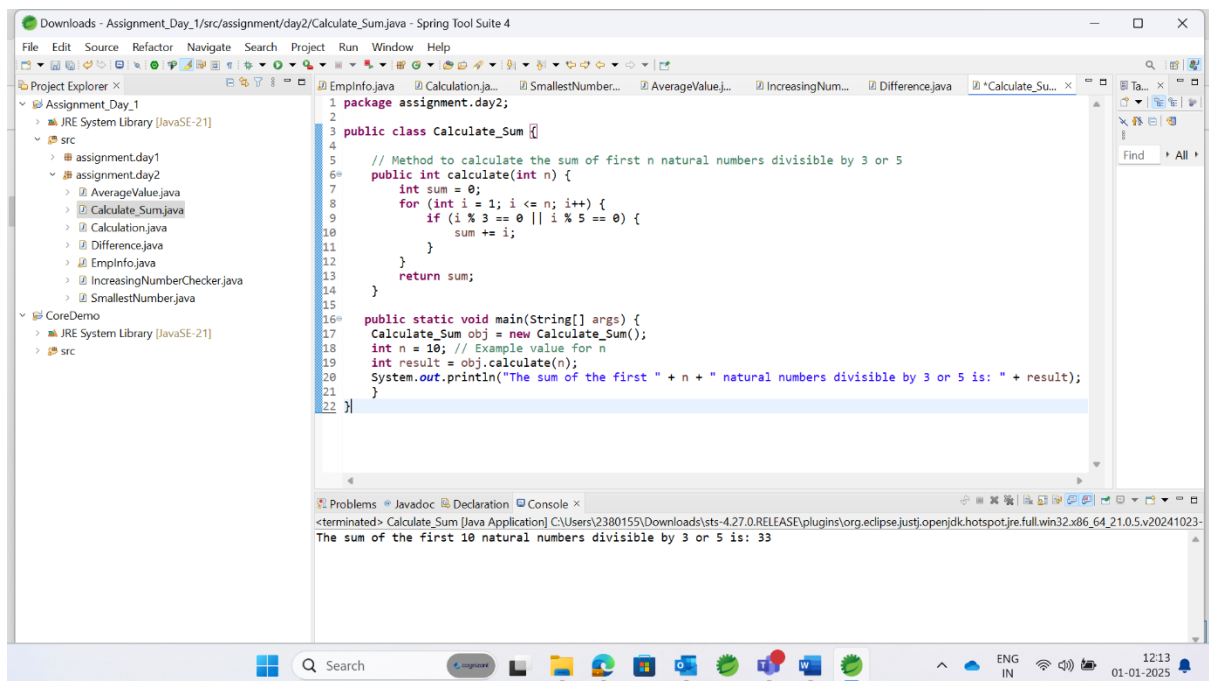
Name : Bharath Magesh

Assignment No : 02

Question No : 01

Create a class with a method which can calculate the sum of first n natural numbers which are divisible by 3 or 5.

Answer:



```
1 package assignment.day2;
2
3 public class Calculate_Sum {
4
5     // Method to calculate the sum of first n natural numbers divisible by 3 or 5
6     public int calculate(int n) {
7         int sum = 0;
8         for (int i = 1; i <= n; i++) {
9             if (i % 3 == 0 || i % 5 == 0) {
10                 sum += i;
11             }
12         }
13         return sum;
14     }
15
16     public static void main(String[] args) {
17         Calculate_Sum obj = new Calculate_Sum();
18         int n = 10; // Example value for n
19         int result = obj.calculate(n);
20         System.out.println("The sum of the first " + n + " natural numbers divisible by 3 or 5 is: " + result);
21     }
22 }
```

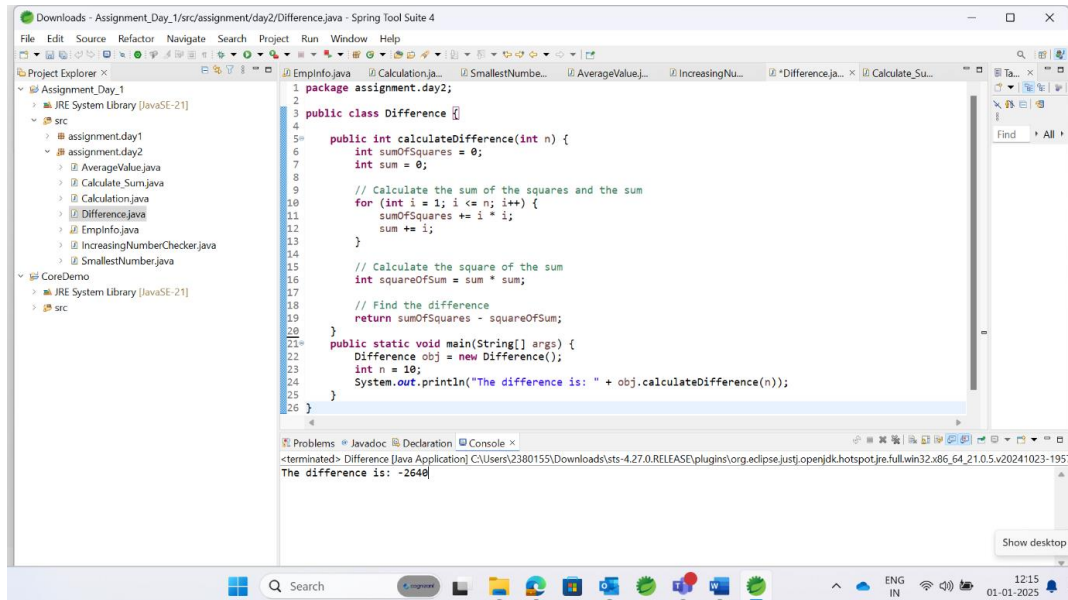
The screenshot shows the Eclipse IDE with the following details:

- Project Explorer:** Shows a project named 'Assignment_Day_1' with a source folder 'src'. Inside 'src', there are two sub-packages: 'assignment.day1' and 'assignment.day2'. The 'assignment.day2' package contains several Java files, including 'Calculate_Sum.java' which is currently selected.
- Editor:** Displays the code for 'Calculate_Sum.java' as shown in the pre-block above.
- Console:** At the bottom, it shows the output of the program: 'The sum of the first 10 natural numbers divisible by 3 or 5 is: 33'.

Question No : 02

Create a class with a method to find the difference between the sum of the squares and the square of the sum of the first n natural numbers.

Answer:



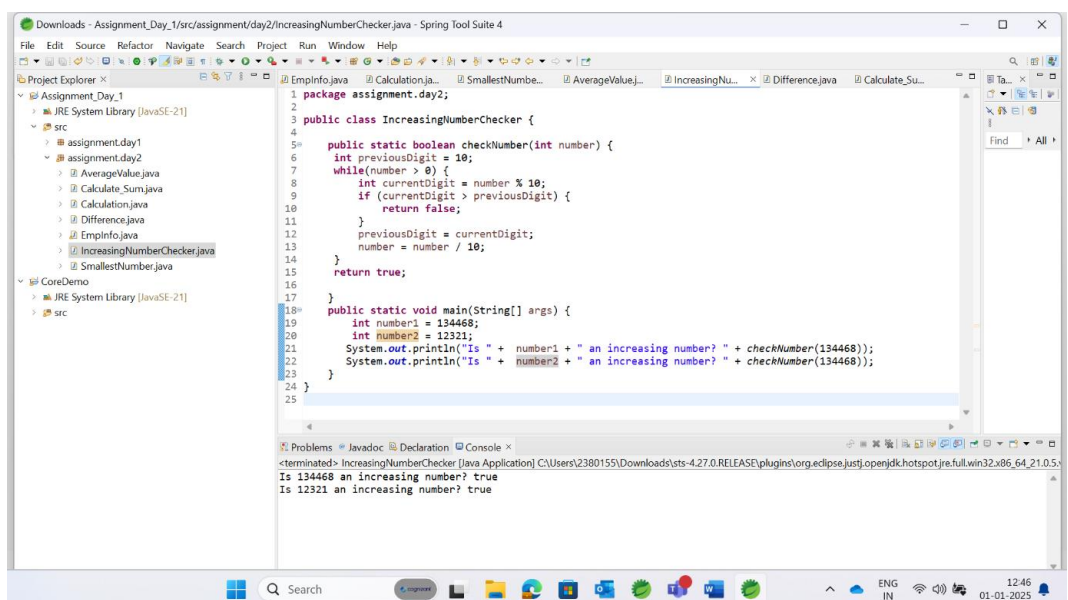
```
1 package assignment.day2;
2
3 public class Difference {
4
5     public int calculateDifference(int n) {
6         int sumOfSquares = 0;
7         int sum = 0;
8
9         // Calculate the sum of the squares and the sum
10        for (int i = 1; i <= n; i++) {
11            sumOfSquares += i * i;
12            sum += i;
13        }
14
15        // Calculate the square of the sum
16        int squareOfSum = sum * sum;
17
18        // Find the difference
19        return sumOfSquares - squareOfSum;
20    }
21
22    public static void main(String[] args) {
23        Difference obj = new Difference();
24        int n = 10;
25        System.out.println("The difference is: " + obj.calculateDifference(n));
26    }
27 }
```

The screenshot shows the Eclipse IDE with the 'Difference.java' file open. The code implements a class 'Difference' with a method 'calculateDifference' that takes an integer 'n' and returns the difference between the sum of squares and the square of the sum. The 'main' method tests this with 'n = 10'. The console output at the bottom shows 'The difference is: -2640'.

Question No : 03

Create a method to check if a number is an increasing number

Answer:



```
1 package assignment.day2;
2
3 public class IncreasingNumberChecker {
4
5     public static boolean checkNumber(int number) {
6         int previousDigit = 10;
7         while(number > 0) {
8             int currentDigit = number % 10;
9             if (currentDigit > previousDigit) {
10                return false;
11            }
12            previousDigit = currentDigit;
13            number = number / 10;
14        }
15        return true;
16    }
17
18    public static void main(String[] args) {
19        int number1 = 134468;
20        int number2 = 12321;
21        System.out.println("Is " + number1 + " an increasing number? " + checkNumber(134468));
22        System.out.println("Is " + number2 + " an increasing number? " + checkNumber(134468));
23    }
24 }
25 }
```

The screenshot shows the Eclipse IDE with the 'IncreasingNumberChecker.java' file open. The code implements a class 'IncreasingNumberChecker' with a static method 'checkNumber' that takes an integer 'number' and returns a boolean. The 'main' method tests this with 'number1 = 134468' and 'number2 = 12321'. The console output at the bottom shows 'Is 134468 an increasing number? true' and 'Is 12321 an increasing number? true'.

The screenshot displays the Eclipse IDE interface. The top menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The Project Explorer on the left shows a project named 'Downloads - Assignment_Day1' with a package structure: 'src' contains 'assignment.day1' and 'assignment.day2'. The main editor shows the code for 'EmpInfo.java', which includes a package declaration, imports, and a main method that prints employee details. The Console at the bottom shows the output of the program, displaying the employee details for Bharath Magesh.

```

1 package assignment.day2;
2 import java.util.*;
3 public class EmpInfo {
4
5     public static void main(String[] args) {
6
7         System.out.println("Employee Details");
8         int empid = 2380155;
9         String empname = "Bharath Magesh";
10        float empsal = 25797.43f;
11        String empAdd = "Hyderabad";
12        String empGender = "Male";
13        String empEmail = "mbharathmsb@gmail.com";
14
15        System.out.print("empid : " + empid + "\n" + "empname : " + empname + "\n" + "empsalary : " + empsal +
16
17    }
18
19 }
20

```

Console Output:

```

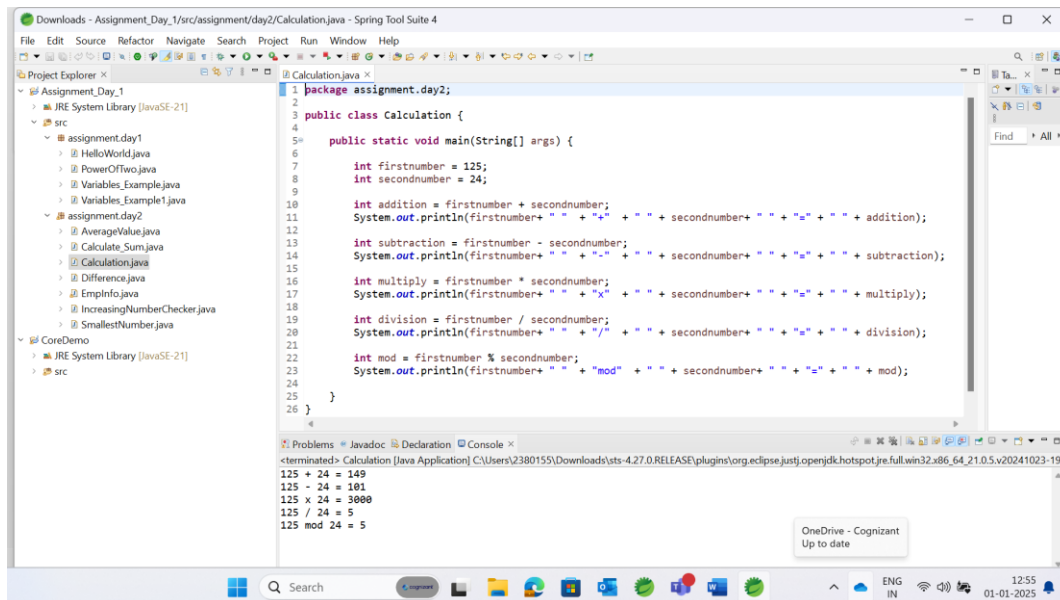
<terminated> EmpInfo [Java Application] C:\Users\2380155\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_21.0.5.v20241023-1957\
Employee Details
empid : 2380155
empname : Bharath Magesh
empsalary : 25797.43
address : Hyderabad
gender : Male
email : mbharathmsb@gmail.com

```

Question No : 06

Write a Java program to print the sum (addition), multiply, subtract, divide and remainder of two numbers.

Answer:



The screenshot shows the Spring Tool Suite 4 IDE with a project named 'Assignment_Day_1'. The 'Project Explorer' on the left shows the file structure, including 'assignment.day2' which contains 'Calculation.java'. The 'Calculation.java' file is open in the editor, showing the following code:

```
1 package assignment.day2;
2
3 public class Calculation {
4
5     public static void main(String[] args) {
6
7         int firstnumber = 125;
8         int secondnumber = 24;
9
10        int addition = firstnumber + secondnumber;
11        System.out.println(firstnumber + " + " + secondnumber + " = " + addition);
12
13        int subtraction = firstnumber - secondnumber;
14        System.out.println(firstnumber + " - " + secondnumber + " = " + subtraction);
15
16        int multiply = firstnumber * secondnumber;
17        System.out.println(firstnumber + " * " + secondnumber + " = " + multiply);
18
19        int division = firstnumber / secondnumber;
20        System.out.println(firstnumber + " / " + secondnumber + " = " + division);
21
22        int mod = firstnumber % secondnumber;
23        System.out.println(firstnumber + " % " + secondnumber + " = " + mod);
24    }
25 }
26 }
```

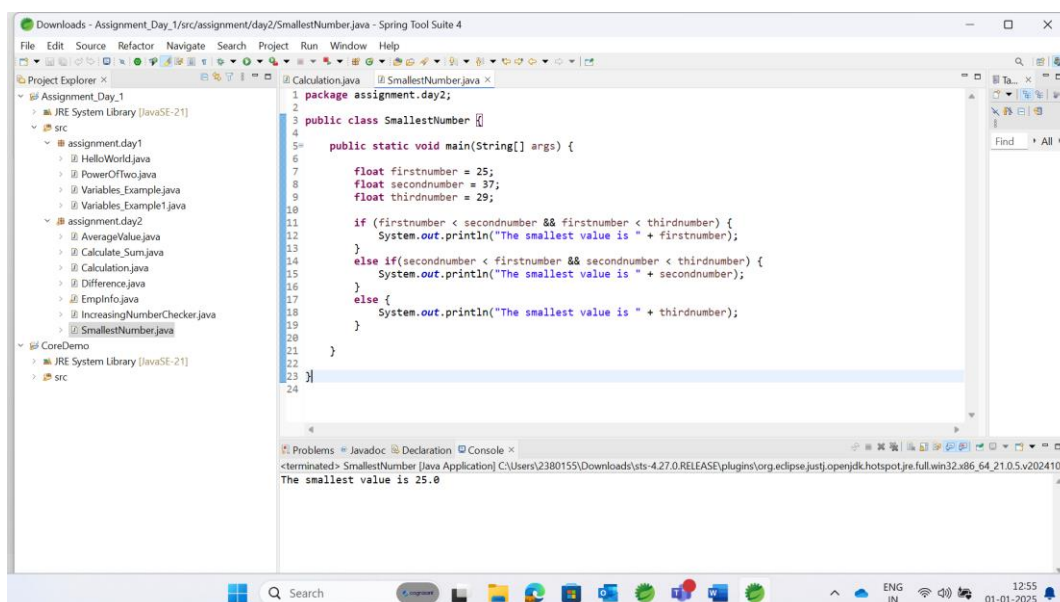
The 'Console' at the bottom shows the output of the program:

```
<terminated> Calculation [Java Application] C:\Users\2380155\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_21.0.5.v20241023-195
125 + 24 = 149
125 - 24 = 101
125 x 24 = 3000
125 / 24 = 5
125 mod 24 = 5
```

Question No : 07

Write a Java method to find the smallest number among three numbers.

Answer:



The screenshot shows the Spring Tool Suite 4 IDE with the same project. The 'Project Explorer' shows 'assignment.day2' containing 'SmallestNumber.java'. The 'SmallestNumber.java' file is open in the editor, showing the following code:

```
1 package assignment.day2;
2
3 public class SmallestNumber {
4
5     public static void main(String[] args) {
6
7         float firstnumber = 25;
8         float secondnumber = 37;
9         float thirdnumber = 29;
10
11        if (firstnumber < secondnumber && firstnumber < thirdnumber) {
12            System.out.println("The smallest value is " + firstnumber);
13        }
14        else if (secondnumber < firstnumber && secondnumber < thirdnumber) {
15            System.out.println("The smallest value is " + secondnumber);
16        }
17        else {
18            System.out.println("The smallest value is " + thirdnumber);
19        }
20    }
21 }
22 }
23 }
24 }
```

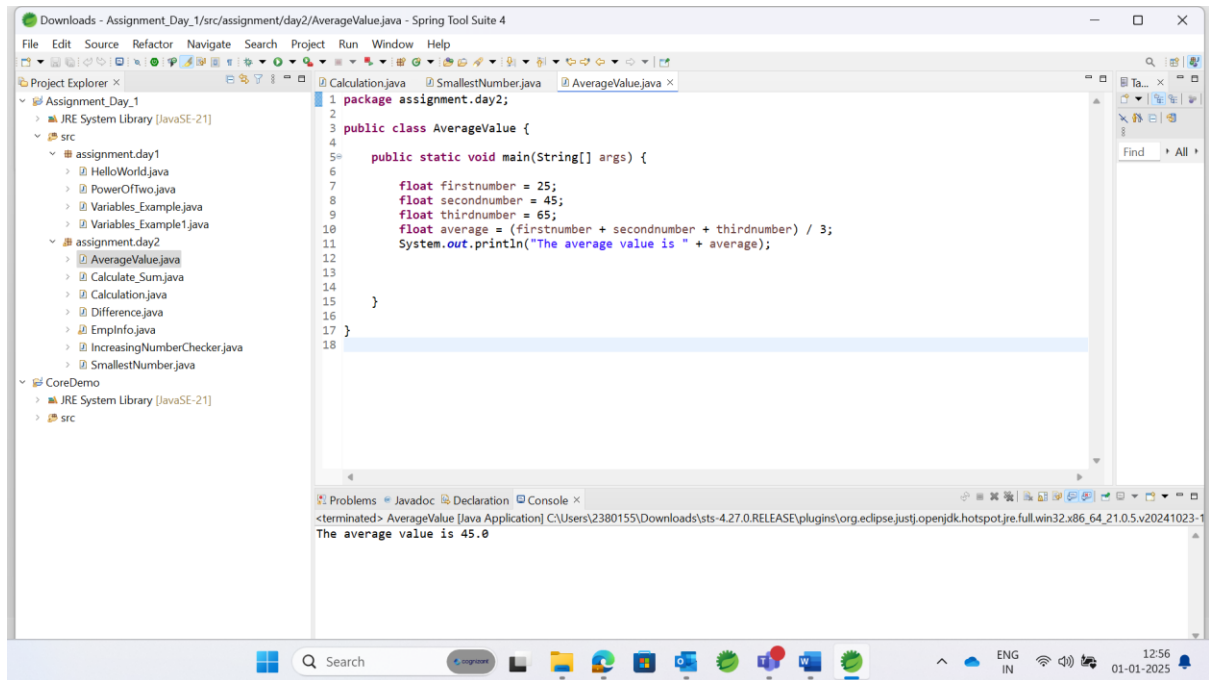
The 'Console' at the bottom shows the output of the program:

```
<terminated> SmallestNumber [Java Application] C:\Users\2380155\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_21.0.5.v20241023-195
The smallest value is 25.0
```

Question No : 08

Write a Java method to compute the average of three numbers.

Answer:



The screenshot shows an IDE window titled "Downloads - Assignment_Day_1/src/assignment/day2/AverageValue.java - Spring Tool Suite 4". The Project Explorer on the left shows a project named "Assignment_Day_1" with a source folder "src" containing several Java files, including "AverageValue.java". The main editor displays the following Java code:

```
1 package assignment.day2;
2
3 public class AverageValue {
4
5     public static void main(String[] args) {
6
7         float firstnumber = 25;
8         float secondnumber = 45;
9         float thirddnumber = 65;
10        float average = (firstnumber + secondnumber + thirddnumber) / 3;
11        System.out.println("The average value is " + average);
12    }
13
14 }
15
16
17
18
```

The Console window at the bottom shows the output of the program:

```
<terminated> AverageValue [Java Application] C:\Users\2380155\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_21.0.5.v20241023-1
The average value is 45.0
```