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Task1



The screenshot shows an Eclipse IDE with a Java project. The editor displays a file named `task1.java` with the following code:

```
1 public class task1 {  
2     public static int sumOfNaturalNumber(int n) {  
3         int sum = 0;  
4         for (int i = 1; i <= n; i++) {  
5             if (i % 3 == 0 || i % 5 == 0) {  
6                 sum += i;  
7             }  
8         }  
9         return sum;  
10    }  
11  
12    public static void main(String[] args) {  
13  
14        int n = 15;  
15        System.out.println(sumOfNaturalNumber(n));  
16    }  
17 }
```

The console output at the bottom shows the program execution:

```
<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 x task3.java task4.java task5.java task6.java task7.java task8.java
1 public class task2 {
2     // Method to calculate the difference
3     public int calculateDifference(int n) {
4         int sumOfSquares = 0;
5         int sum = 0;
6
7         for (int i = 1; i <= n; i++) {
8             sumOfSquares += i * i;
9             sum += i;
10        }
11
12        int squareOfSum = sum * sum;
13
14        return squareOfSum - sumOfSquares;
15    }
16
17    public static void main(String[] args) {
18        // Example usage
19        int n = 10;
20        task2 calculator = new task2();
21        System.out.println("The difference is: " + calculator.calculateDifference(n));
22    }
23 }
```

Console x

<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 x task4.java task5.java task6.java task7.java task8.java
1 public class task3 {
2     // Method to check if a number is an increasing number
3     public boolean checkNumber(int number) {
4         String numStr = Integer.toString(number);
5
6         for (int i = 0; i < numStr.length() - 1; i++) {
7             if (numStr.charAt(i) > numStr.charAt(i + 1)) {
8                 return false;
9             }
10        }
11
12        return true;
13    }
14
15    public static void main(String[] args) {
16        // Example usage
17        task3 checker = new task3();
18        int number = 134468;
19        System.out.println("The number " + number + " is increasing: " + checker.checkNumber(number));
20    }
21 }
```

Console x

<terminated> task3 [Java Application] C:\Users\2380273\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86
The number 134468 is increasing: true

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Task4

```
task1.java task2.java task3.java task4.java × task5.java task6.java task7.java task8.java
1 public class task4 {
2     // Method to check if a number is a power of two
3     public boolean checkNumber(int n) {
4         if (n <= 0) {
5             return false;
6         }
7
8         return (n & (n - 1)) == 0;
9     }
10
11     public static void main(String[] args) {
12         // Example usage
13         task4 checker = new task4();
14         int number = 8;
15         System.out.println("The number " + number + " is a power of two: " + checker.checkNumber(number));
16     }
17 }
```

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 x task6.java task7.java task8.java
1 public class task5 {
2     private int empId;
3     private String empName;
4     private double empSal;
5     private String empAdd;
6     private String empGender;
7     private String empEmail;
8
9
10    public task5(int empId, String empName, double empSal, String empAdd, String empGender, String empEmail) {
11        this.empId = empId;
12        this.empName = empName;
13        this.empSal = empSal;
14        this.empAdd = empAdd;
15        this.empGender = empGender;
16        this.empEmail = empEmail;
17    }
18
19    public void display() {
20        System.out.println("Employee ID: " + empId);
21        System.out.println("Employee Name: " + empName);
22        System.out.println("Employee Salary: " + empSal);
23        System.out.println("Employee Address: " + empAdd);
24        System.out.println("Employee Gender: " + empGender);
25        System.out.println("Employee Email: " + empEmail);
26    }
27
28    public static void main(String[] args) {
29        task5 emp = new task5(101, "Jenny", 70000, "Hyderabad", "Male", "jenny@gmail.com");
30        emp.display();
31    }
32 }
```

Console x

```
<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
1 import java.util.Scanner;
2
3 public class task6 {
4     public static void main(String[] args) {
5         Scanner scanner = new Scanner(System.in);
6
7         System.out.print("Input first number: ");
8         int num1 = scanner.nextInt();
9
10        System.out.print("Input second number: ");
11        int num2 = scanner.nextInt();
12
13        int sum = num1 + num2;
14        int difference = num1 - num2;
15        int product = num1 * num2;
16        int quotient = num1 / num2;
17        int remainder = num1 % num2;
18
19        System.out.println(num1 + " + " + num2 + " = " + sum);
20        System.out.println(num1 + " - " + num2 + " = " + difference);
21        System.out.println(num1 + " x " + num2 + " = " + product);
22        System.out.println(num1 + " / " + num2 + " = " + quotient);
23        System.out.println(num1 + " % " + num2 + " = " + remainder);
24
25        scanner.close();
26    }
27 }
```

Console ×

```
<terminated> task6 [Java Application] C:\Users\2380273\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32
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.java
1 import java.util.Scanner;
2
3 public class task7 {
4     public static void main(String[] args) {
5         Scanner scanner = new Scanner(System.in);
6
7         System.out.print("Input the first number: ");
8         int num1 = scanner.nextInt();
9
10        System.out.print("Input the second number: ");
11        int num2 = scanner.nextInt();
12
13        System.out.print("Input the third number: ");
14        int num3 = scanner.nextInt();
15
16        int smallest = findSmallest(num1, num2, num3);
17
18        System.out.println("The smallest value is " + smallest);
19
20        scanner.close();
21    }
22
23    public static int findSmallest(int num1, int num2, int num3) {
24        return Math.min(num1, Math.min(num2, num3));
25    }
26 }

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 ×
1 import java.util.Scanner;
2
3 public class task8 {
4     public static void main(String[] args) {
5         Scanner scanner = new Scanner(System.in);
6
7         // Input the three numbers
8         System.out.print("Input the first number: ");
9         int num1 = scanner.nextInt();
10
11         System.out.print("Input the second number: ");
12         int num2 = scanner.nextInt();
13
14         System.out.print("Input the third number: ");
15         int num3 = scanner.nextInt();
16
17         // Compute the average
18         double average = computeAverage(num1, num2, num3);
19
20         // Print the average
21         System.out.println("The average value is " + average);
22
23         scanner.close();
24     }
25
26     // Compute the average
27     private static double computeAverage(int num1, int num2, int num3) {
28         return (num1 + num2 + num3) / 3.0;
29     }
30 }
```

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