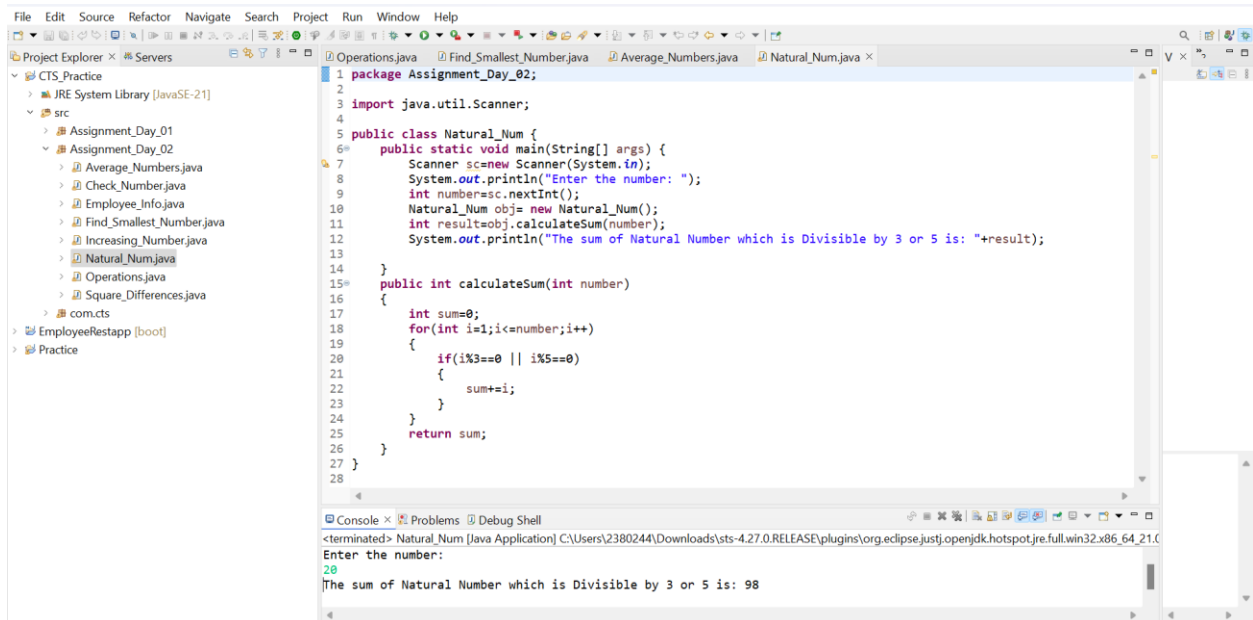


1. Create a class with a method which can calculate the sum of first n natural numbers which are divisible by 3 or 5.



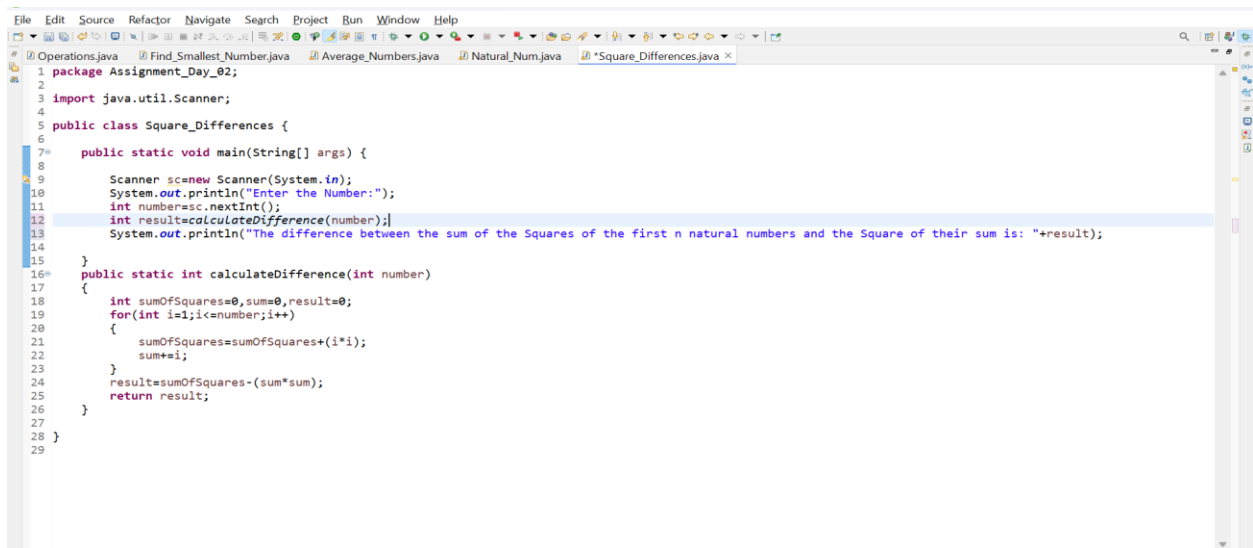
The screenshot shows the Eclipse IDE with a project named 'CTS_Practice'. The 'src' folder contains several Java files, including 'Natural_Num.java'. The code in 'Natural_Num.java' is as follows:

```
1 package Assignment_Day_02;
2
3 import java.util.Scanner;
4
5 public class Natural_Num {
6     public static void main(String[] args) {
7         Scanner sc=new Scanner(System.in);
8         System.out.println("Enter the number: ");
9         int number=sc.nextInt();
10        Natural_Num obj= new Natural_Num();
11        int result=obj.calculateSum(number);
12        System.out.println("The sum of Natural Number which is Divisible by 3 or 5 is: "+result);
13    }
14
15    public int calculateSum(int number)
16    {
17        int sum=0;
18        for(int i=1;i<=number;i++)
19        {
20            if(i%3==0 || i%5==0)
21            {
22                sum+=i;
23            }
24        }
25        return sum;
26    }
27 }
28
```

The console output shows the program execution:

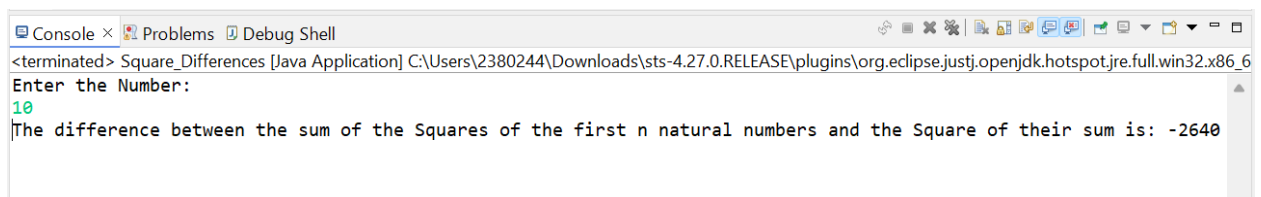
```
<terminated> Natural_Num [Java Application] C:\Users\2380244\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_21.0
Enter the number:
28
The sum of Natural Number which is Divisible by 3 or 5 is: 98
```

2. 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.



The screenshot shows the Eclipse IDE with the same project. The 'src' folder contains a new file, 'Square_Differences.java'. The code in 'Square_Differences.java' is as follows:

```
1 package Assignment_Day_02;
2
3 import java.util.Scanner;
4
5 public class Square_Differences {
6
7     public static void main(String[] args) {
8
9         Scanner sc=new Scanner(System.in);
10        System.out.println("Enter the Number:");
11        int number=sc.nextInt();
12        int result=calculateDifference(number);
13        System.out.println("The difference between the sum of the Squares of the first n natural numbers and the Square of their sum is: "+result);
14    }
15
16    public static int calculateDifference(int number)
17    {
18        int sumOfSquares=0,sum=0,result=0;
19        for(int i=1;i<=number;i++)
20        {
21            sumOfSquares=sumOfSquares+(i*i);
22            sum+=i;
23        }
24        result=sumOfSquares-(sum*sum);
25        return result;
26    }
27 }
28
29
```



The console output shows the program execution:

```
<terminated> Square_Differences [Java Application] C:\Users\2380244\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_21.0
Enter the Number:
10
The difference between the sum of the Squares of the first n natural numbers and the Square of their sum is: -2640
```

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

```
1 package Assignment_Day_02;
2
3 import java.util.Scanner;
4
5 public class Increasing_Number {
6
7     public static void main(String[] args) {
8         Scanner sc=new Scanner(System.in);
9         System.out.println("Enter the Number:");
10        int number=sc.nextInt();
11        boolean result=checkNumber(number);
12        if(result)
13        {
14            System.out.println(number+" is an increasing number");
15        }
16        else {
17            System.out.println(number+" is not an increasing number");
18        }
19    }
20 }
21
22 public static boolean checkNumber(int number)
23 {
24     while(number>0)
25     {
26         int number1=number%10;
27         number/=10;
28         int number2=number%10;
29
30         if(number1<number2)
31         {
32             return false;
33         }
34     }
35     return true;
36 }
```

```
Console × Problems Debug Shell
<terminated> Increasing_Number [Java Application]
Enter the Number:
134278
134278 is not an increasing number
```

```
Console × Problems Debug Shell
<terminated> Increasing_Number [Java Application]
Enter the Number:
134468
134468 is an increasing number
```

4. Create a method to check if a number is a power of two or not.

```
File Edit Source Refactor Navigate Search Project Run Window Help
1 package Assignment_Day_02;
2
3 import java.util.Scanner;
4 public class Check_Number {
5     public static void main(String[] args) {
6         Scanner sc=new Scanner(System.in);
7         System.out.println("Enter the Number: ");
8         int number=sc.nextInt();
9         Check_Number obj=new Check_Number();
10        boolean result=obj.checkNumber(number);
11        if(result)
12        {
13            System.out.println(number+" is a Power of 2");
14        }
15        else
16        {
17            System.out.println(number+" is not a Power of 2");
18        }
19    }
20 }
21
22 public boolean checkNumber(int number)
23 {
24     int i=1,res=0;
25     while(true)
26     {
27         int j=0,sum=1;
28         while(j<i)
29         {
30             sum*=2;
31             j++;
32         }
33         if(sum>=number)
34         {
35             res=sum;
36             break;
37         }
38     }
39     if(res==number)
40     {
41         return true;
42     }
43     else
44     {
45         return false;
46     }
47 }
```

```
Console × Problems Debug Shell
<terminated> Check_Number [Java Application]
Enter the Number:
256
256 is a Power of 2
```

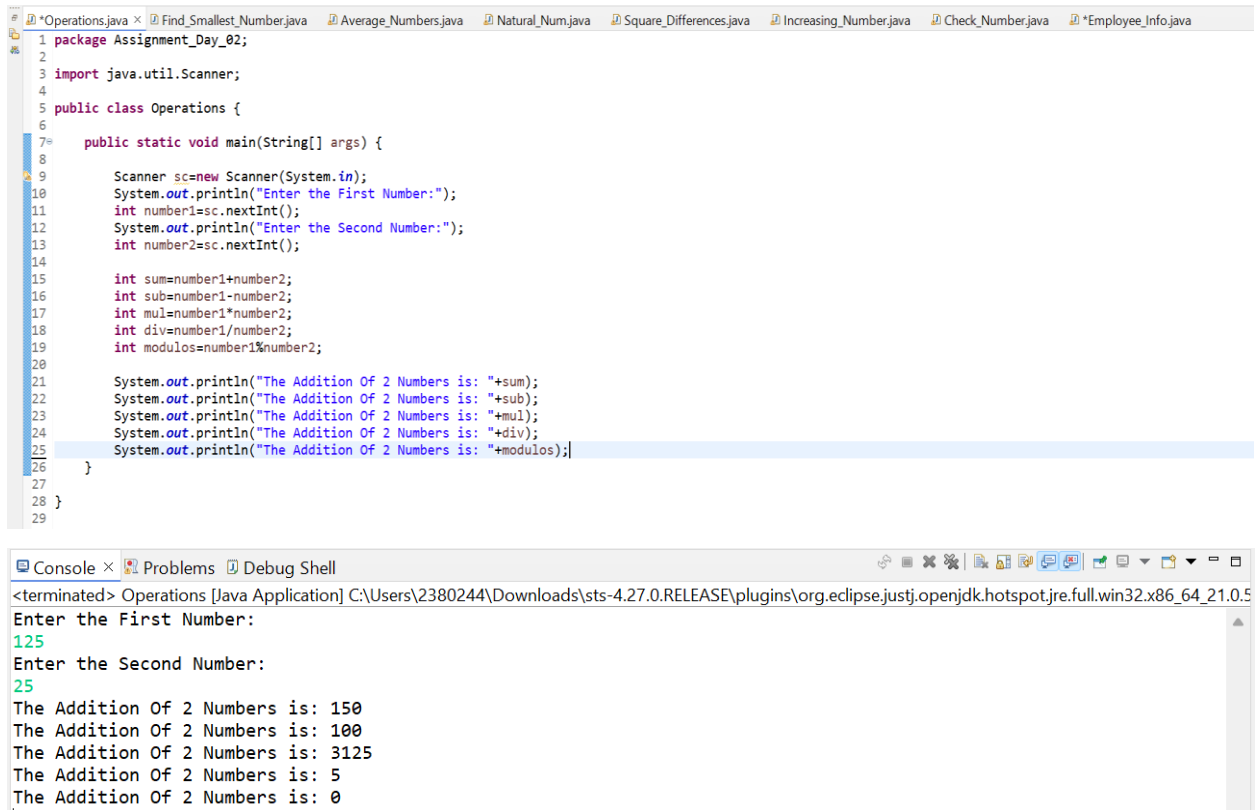
```
Console × Problems Debug Shell
<terminated> Check_Number [Java Application]
Enter the Number:
124
124 is not a Power of 2
```

5. Take Employee Info like empid, empname, empsal, empAdd, empGender, empEmail and display .

```
Operations.java Find_Smallest_Number.java Average_Numbers.java Natural_Num.java Square_Differences.java Increasing_Number.java Check_Number.java *Employee_Info.java ×
1 package Assignment_Day_02;
2
3 import java.util.Scanner;
4
5 public class Employee_Info {
6
7     public static void main(String[] args) {
8
9         Scanner sc=new Scanner(System.in);
10        System.out.println("Enter the Employee Id: ");
11        int empId=sc.nextInt();
12        sc.nextLine();
13        System.out.println("Enter the Employee Name: ");
14        String empName=sc.nextLine();
15        System.out.println("Enter the Employee's Salary: ");
16        double empSalary=sc.nextDouble();
17        sc.nextLine();
18        System.out.println("Enter the Employee Address: ");
19        String empAdd=sc.nextLine();
20        System.out.println("Enter the Employee Gender (M/F): ");
21        char empGender=sc.next().charAt(0);
22        sc.nextLine();
23        System.out.println("Enter the Employee's Email: ");
24        String email=sc.nextLine();
25
26        System.out.println("=====");
27        System.out.println("Employee's Id is: "+empId);
28        System.out.println("Employee's Name is: "+empName.toUpperCase());
29        System.out.println("Employee's Salary is: "+empSalary);
30        System.out.println("Employee's Address is: "+empAdd);
31        System.out.println("Employee's Gender is: "+empGender);
32        System.out.println("Employee's Email is: "+email);
33    }
34 }
35
```

```
Console × Problems Debug Shell
<terminated> Employee_Info [Java Application] C:\Users\2380244\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_21
Enter the Employee Id:
2380244
Enter the Employee Name:
Sanjay P
Enter the Employee's Salary:
18118
Enter the Employee Address:
Salem, TamilNadu
Enter the Employee Gender (M/F):
M
Enter the Employee's Email:
sanjaydp1228@gmail.com
=====
Employee's Id is: 2380244
Employee's Name is: SANJAY P
Employee's Salary is: 18118.0
Employee's Address is: Salem, TamilNadu
Employee's Gender is: M
Employee's Email is: sanjaydp1228@gmail.com
```

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



The screenshot shows the Eclipse IDE with a Java project named 'Assignment_Day_02'. The file 'Operations.java' is open, containing a public class 'Operations' with a 'main' method. The code prompts the user to enter two numbers, calculates their sum, difference, product, quotient, and remainder, and prints the results. The console output shows the program running with inputs 125 and 25, resulting in: 'The Addition Of 2 Numbers is: 150', 'The Addition Of 2 Numbers is: 100', 'The Addition Of 2 Numbers is: 3125', 'The Addition Of 2 Numbers is: 5', and 'The Addition Of 2 Numbers is: 0'.

```
1 package Assignment_Day_02;
2
3 import java.util.Scanner;
4
5 public class Operations {
6
7     public static void main(String[] args) {
8
9         Scanner sc=new Scanner(System.in);
10        System.out.println("Enter the First Number:");
11        int number1=sc.nextInt();
12        System.out.println("Enter the Second Number:");
13        int number2=sc.nextInt();
14
15        int sum=number1+number2;
16        int sub=number1-number2;
17        int mul=number1*number2;
18        int div=number1/number2;
19        int modulus=number1%number2;
20
21        System.out.println("The Addition Of 2 Numbers is: "+sum);
22        System.out.println("The Addition Of 2 Numbers is: "+sub);
23        System.out.println("The Addition Of 2 Numbers is: "+mul);
24        System.out.println("The Addition Of 2 Numbers is: "+div);
25        System.out.println("The Addition Of 2 Numbers is: "+modulus);
26    }
27 }
28
29
```

Console Output:

```
<terminated> Operations [Java Application] C:\Users\2380244\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_21.0.5
Enter the First Number:
125
Enter the Second Number:
25
The Addition Of 2 Numbers is: 150
The Addition Of 2 Numbers is: 100
The Addition Of 2 Numbers is: 3125
The Addition Of 2 Numbers is: 5
The Addition Of 2 Numbers is: 0
```

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



The screenshot shows the Eclipse IDE with a Java project named 'Assignment_Day_02'. The file 'Find_Smallest_Number.java' is open, containing a public class 'Find_Smallest_Number' with a 'main' method and a static method 'findSmallestNumber'. The code prompts the user to enter three numbers and prints the smallest one. The console output shows the program running with inputs 125, 25, and 100, resulting in: 'The Smallest Value is: 25'.

```
1 package Assignment_Day_02;
2
3 import java.util.Scanner;
4
5 public class Find_Smallest_Number {
6     public static void main(String[] args) {
7         Scanner sc=new Scanner(System.in);
8         System.out.println("Enter the First Number:");
9         int number1=sc.nextInt();
10        System.out.println("Enter the Second Number:");
11        int number2=sc.nextInt();
12        System.out.println("Enter the Third Number:");
13        int number3=sc.nextInt();
14
15        float result=findSmallestNumber(number1,number2,number3);
16        System.out.printf("The Smallest Value is: %.1f",result);
17    }
18    public static float findSmallestNumber(int number1, int number2,int number3)
19    {
20        if((number1<number2) && (number1<number3))
21        {
22            return number1;
23        }
24        else if((number1>number2) && (number2<number3))
25        {
26            return number2;
27        }
28        else {
29            return number3;
30        }
31    }
32 }
33
```

Console Output:

```
<terminated> Find_Smallest_Number [Java Application] C:\Users\2380244\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_21.0.5
Enter the First Number:
125
Enter the Second Number:
25
Enter the Third Number:
100
The Smallest Value is: 25
```

```

Console × Problems Debug Shell
<terminated> Find_Smallest_Number [Java Application]
Enter the First Number:
25
Enter the Second Number:
34
Enter the Third Number:
43
The Smallest Value is: 25.0

```

```

Console × Problems Debug Shell
<terminated> Find_Smallest_Number [Java Application]
Enter the First Number:
45
Enter the Second Number:
18
Enter the Third Number:
33
The Smallest Value is: 18.0

```

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

The screenshot shows an IDE with the following components:

- Project Explorer:** Shows a project named 'CTS_Practice' with a source folder 'src'. Inside 'src', there is a package 'Assignment_Day_02' containing several Java files, including 'Average_Numbers.java'.
- Editor:** Displays the code for 'Average_Numbers.java'. The code is as follows:


```

1 package Assignment_Day_02;
2
3 import java.util.Scanner;
4
5 public class Average_Numbers {
6     public static void main(String[] args) {
7         Scanner sc=new Scanner(System.in);
8         System.out.println("Enter the First Number:");
9         int number1=sc.nextInt();
10        System.out.println("Enter the Second Number:");
11        int number2=sc.nextInt();
12        System.out.println("Enter the Third Number:");
13        int number3=sc.nextInt();
14
15        Average_Numbers obj=new Average_Numbers();
16        double result=obj.averageNumber(number1,number2,number3);
17        System.out.printf("The Average of 3 numbers is: %.2f\n",result);
18    }
19    public double averageNumber(int number1, int number2,int number3)
20    {
21        return (number1+number2+number3)/3.0;
22    }
23 }
24

```
- Console:** Shows the output of the program:


```

<terminated> Average_Numbers [Java Application] C:\Users\2380244\Downloads\sts-4.27.0.RELEASE\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64
Enter the First Number:
12
Enter the Second Number:
20
Enter the Third Number:
15
The Average of 3 numbers is: 15.67

```