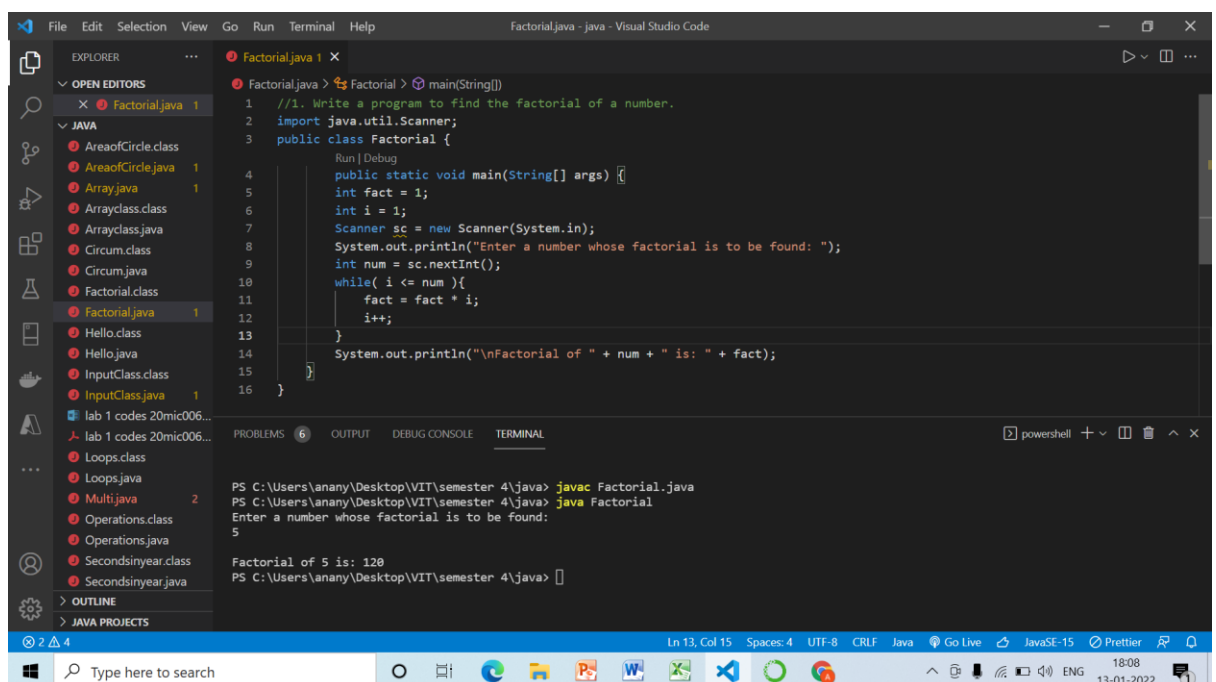


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20MIC0063

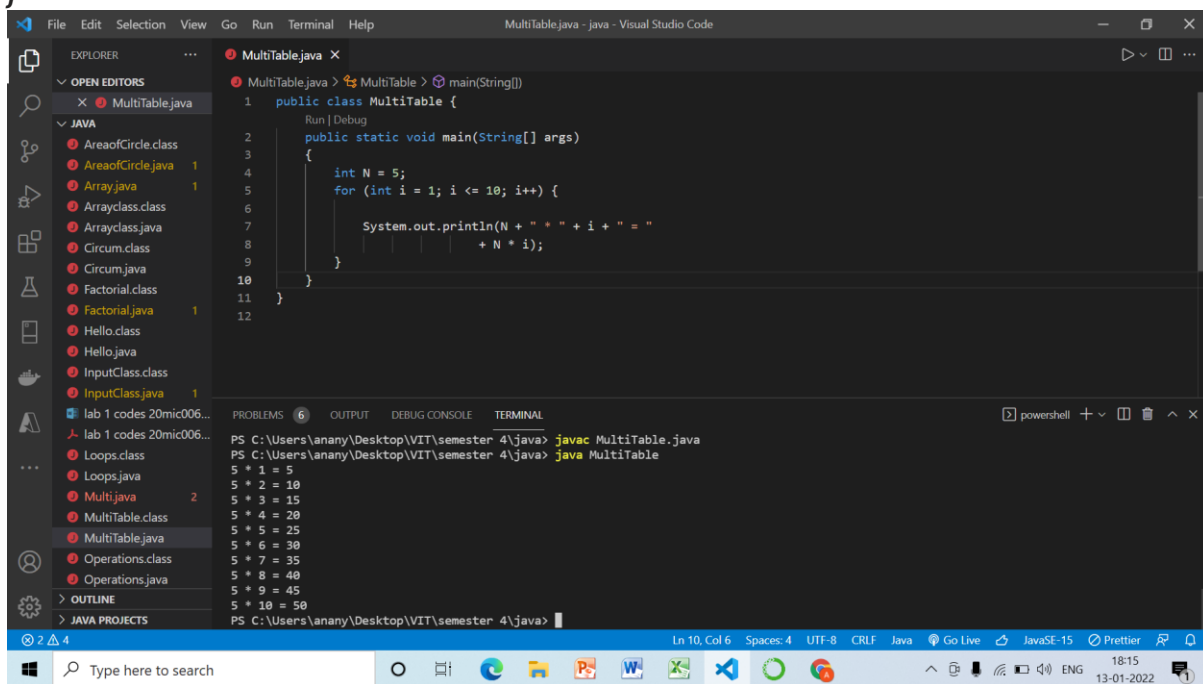
1. Write a program to find the factorial of a number.

```
import java.util.Scanner;
public class Factorial {
    public static void main(String[] args) {
        int fact = 1;
        int i = 1;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a number whose factorial is to be found: ");
        int num = sc.nextInt();
        while( i <= num ){
            fact = fact * i;
            i++;
        }
        System.out.println("\nFactorial of " + num + " is: " + fact);
    }
}
```



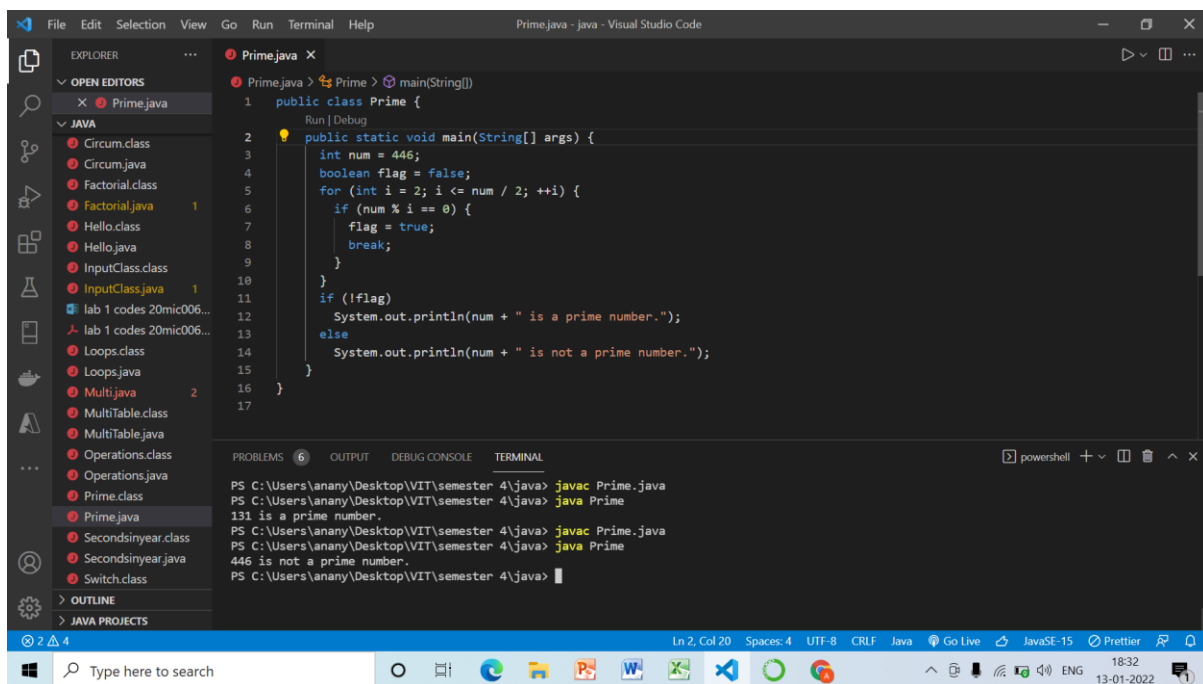
2. Write a program to print the multiplication table of a number.

```
public class MultiTable {  
    public static void main(String[] args)  
    {  
        int N = 5;  
        for (int i = 1; i <= 10; i++) {  
  
            System.out.println(N + " * " + i + " = "  
                                + N * i);  
        }  
    }  
}
```



3. Write a program to check whether the given number is a prime number or not

```
public class Prime {  
    public static void main(String[] args) {  
        int num = 446;  
        boolean flag = false;  
        for (int i = 2; i <= num / 2; ++i) {  
            if (num % i == 0) {  
                flag = true;  
                break;  
            }  
        }  
        if (!flag)  
            System.out.println(num + " is a prime number.");  
        else  
            System.out.println(num + " is not a prime number.");  
    }  
}
```



The screenshot shows the Visual Studio Code editor with the file `Prime.java` open. The code is as follows:

```
1 public class Prime {  
2     public static void main(String[] args) {  
3         int num = 446;  
4         boolean flag = false;  
5         for (int i = 2; i <= num / 2; ++i) {  
6             if (num % i == 0) {  
7                 flag = true;  
8                 break;  
9             }  
10        }  
11        if (!flag)  
12            System.out.println(num + " is a prime number.");  
13        else  
14            System.out.println(num + " is not a prime number.");  
15        }  
16    }  
17 }
```

The terminal output shows the following commands and results:

```
PS C:\Users\anany\Desktop\VIT\semester 4\java> javac Prime.java  
PS C:\Users\anany\Desktop\VIT\semester 4\java> java Prime  
131 is a prime number.  
PS C:\Users\anany\Desktop\VIT\semester 4\java> javac Prime.java  
PS C:\Users\anany\Desktop\VIT\semester 4\java> java Prime  
446 is not a prime number.  
PS C:\Users\anany\Desktop\VIT\semester 4\java>
```

4. Write a program to generate the following patterns.

i)

```
1
1 2
1 2 3
1 2
1
```

ii)

```
*
* *
* * *
* * * *
```

```
public class Patterb {
```

```
    public static void main(String[] args) {  
        int rows = 4;
```

```
        for (int i = 1; i <= rows; ++i) {  
            for (int j = 1; j <= i; ++j) {  
                System.out.print("* ");  
            }  
            System.out.println();  
        }  
    }  
}
```

The screenshot shows the Visual Studio Code editor with a Java file named `Patterb.java`. The code is as follows:

```
1 public class Patterb {  
2  
3     public static void main(String[] args) {  
4         int rows = 4;  
5  
6         for (int i = 1; i <= rows; ++i) {  
7             for (int j = 1; j <= i; ++j) {  
8                 System.out.print("* ");  
9             }  
10            System.out.println();  
11        }  
12    }  
13 }
```

The terminal output shows the execution of the program:

```
PS C:\Users\anany\Desktop\VIT\semester 4\java> javac Patterb.java  
PS C:\Users\anany\Desktop\VIT\semester 4\java> java Patterb  
*  
* *  
* * *  
* * * *
```

5. Write a program to generate the Fibonacci series.

```
import java.util.Scanner;
```

```
public class Fibbo {
```

```
public static void main(String[] args) {  
int FibLength;  
Scanner sc = new Scanner(System.in);
```

```
System.out.print("Please enter length: ");  
FibLength = sc.nextInt();
```

```
int[] num = new int[FibLength];
```

```
num[0] = 0;
```

```
num[1] = 1;  
for (int i = 2; i < FibLength; i++) {  
num[i] = num[i - 1] + num[i - 2];  
}
```

```
System.out.println("Fibonacci Series: ");  
for (int i = 0; i < FibLength; i++) {  
System.out.print(num[i] + " ");  
}  
}
```

```
File Edit Selection View Go Run Terminal Help Fibbo.java - java - Visual Studio Code
```

EXPLORER

- OPEN EDITORS
 - Fibbo.java 1
- JAVA
 - AreaofCircle.class
 - AreaofCircle.java 1
 - Array.java 1
 - Arrayclass.class
 - Arrayclass.java
 - Circum.class
 - Circum.java
 - Factorial.class
 - Factorial.java 1
 - Fibbo.class
 - Fibbo.java 1
 - Hello.class
 - Hello.java
 - InputClass.class
 - InputClass.java 1
 - lab 1 codes 20mic006...
 - lab 1 codes 20mic006...
 - Loops.class
 - Loops.java
 - Multi.java 2
 - MultiTable.class
 - MultiTable.java

PROBLEMS 7 OUTPUT DEBUG CONSOLE TERMINAL

```
*****  
PS C:\Users\anany\Desktop\VIT\semester 4\java> javac Fibbo.java  
PS C:\Users\anany\Desktop\VIT\semester 4\java> java Fibbo  
Please enter length: 12  
Fibonacci Series:  
0 1 1 2 3 5 8 13 21 34 55 89  
PS C:\Users\anany\Desktop\VIT\semester 4\java>
```

Ln 7, Col 39 Spaces: 4 UTF-8 CRLF Java Go Live JavaSE-15 Prettier

Type here to search

19:36 13-01-2022

6. Write a program to sort n numbers in ascending order.

```
import java.util.Arrays;
import java.util.Scanner;

public class SortArr {
    private static Scanner sc;
    public static void main(String[] args)
    {
        int Size, i;
        sc = new Scanner(System.in);

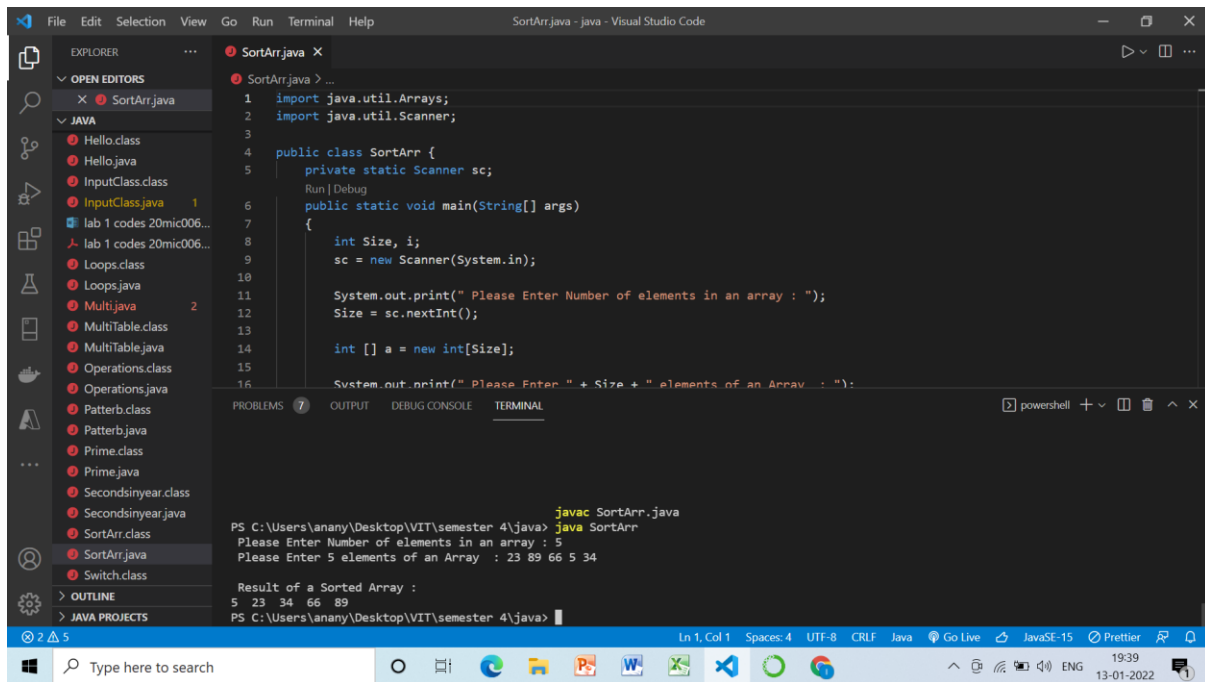
        System.out.print(" Please Enter Number of elements in an array : ");
        Size = sc.nextInt();

        int [] a = new int[Size];

        System.out.print(" Please Enter " + Size + " elements of an Array : ");
        for (i = 0; i < Size; i++)
        {
            a[i] = sc.nextInt();
        }

        Arrays.sort(a);

        System.out.println("\n Result of a Sorted Array : ");
        for (int Number: a)
        {
            System.out.print(Number + " ");
        }
    }
}
```



7. Write a program to search a number among n numbers

```
import java.util.*;
```

```
public class SearchNum
```

```
{
```

```
    public static void main(String args[]){
```

```
        int n,loop;
```

```
        Scanner SC=new Scanner(System.in);
```

```
        System.out.print("Enter total number of elements: ");
```

```
        n=SC.nextInt();
```

```
        int arr[]=new int[n];
```

```
        System.out.println("Enter array elements:");
```

```
        for(loop=0; loop<n; loop++){
```

```
            System.out.print("Enter element (" + (loop+1) + "): ");
```

```
            arr[loop]=SC.nextInt();
```

```
        }
```

```
        int num;
```

```
        System.out.print("Enter number to search: ");
```

```
        num=SC.nextInt();
```

```
        int index=-1;
```

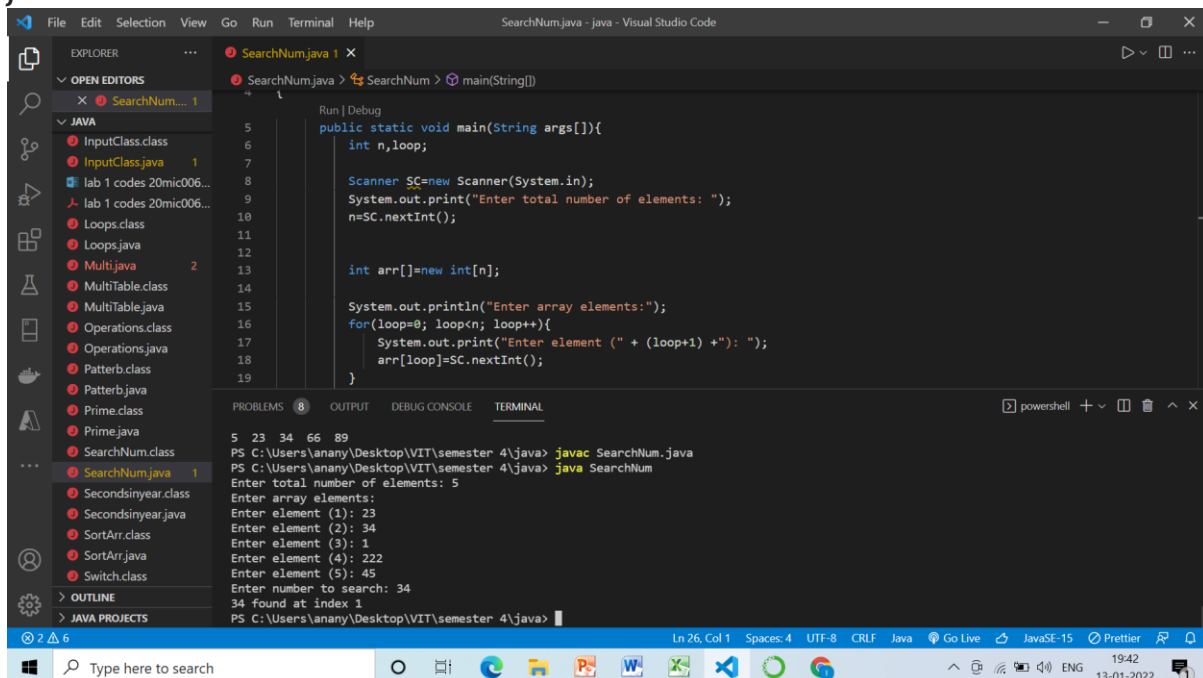
```

        for(loop=0;loop<n;loop++){
            if(arr[loop]==num){
                index=loop;
                break;
            }
        }

        if(index==-1){
            System.out.println("Sorry! " + num + " is not found in array.");
        }
        else{
            System.out.println(num + " found at index " + index);
        }

        SC.close();
    }
}

```



8. Write a program to read 'n' numbers and print their sum and average.

```

import static java.lang.Float.sum;
import java.util.Scanner;
public class Avgsum {
    public static void main(String[] args)
    {
        int n, count = 1;
        float xF, averageF, sumF = 0;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the value of n");
        n = sc.nextInt();
        while (count <= n)

```



```

    {
        System.out.println("Enter the "+count+" number?");
        xF = sc.nextInt();
        sumF += xF;
        ++count;
    }

    averageF = sumF/n;
    System.out.println("The Sum is"+sumF);
    System.out.println("The Average is"+averageF);
}
}

```

The screenshot shows the Visual Studio Code interface with the file `Avgsum.java` open. The code in the editor is as follows:

```

11  while (count <= n)
12  {
13      System.out.println("Enter the "+count+" number?");
14      xF = sc.nextInt();
15      sumF += xF;
16      ++count;
17  }
18
19  averageF = sumF/n;
20  System.out.println("The Sum is"+sumF);
21  System.out.println("The Average is"+averageF);

```

The terminal output shows the execution of the program:

```

PS C:\Users\anany\Desktop\VIT\semester 4\java> javac Avgsum.java
PS C:\Users\anany\Desktop\VIT\semester 4\java> java Avgsum
Enter the value of n
5
Enter the 1 number?
1
Enter the 2 number?
2
Enter the 3 number?
3
Enter the 4 number?
4
Enter the 5 number?
5
The Sum is15.0
The Average is3.0
PS C:\Users\anany\Desktop\VIT\semester 4\java>

```