

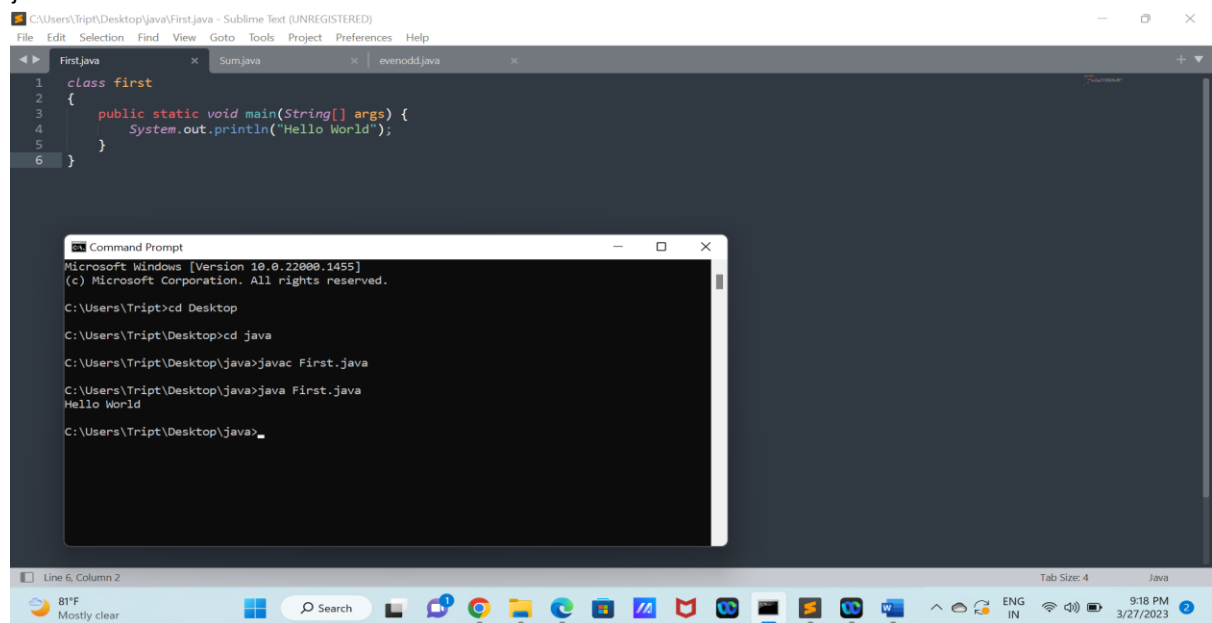
CDAC Hyderabad
PG-DAC March 2023
OOPs With Java
Assignment-1

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1. Write a Java Program to Print Hello World

Ans. class first

```
{  
    public static void main(String[] args)  
    {  
        System.out.println("Hello World");  
    }  
}
```



The screenshot shows a Sublime Text editor window with a file named 'First.java'. The code in the editor is:

```
1 class first  
2 {  
3     public static void main(String[] args) {  
4         System.out.println("Hello World");  
5     }  
6 }
```

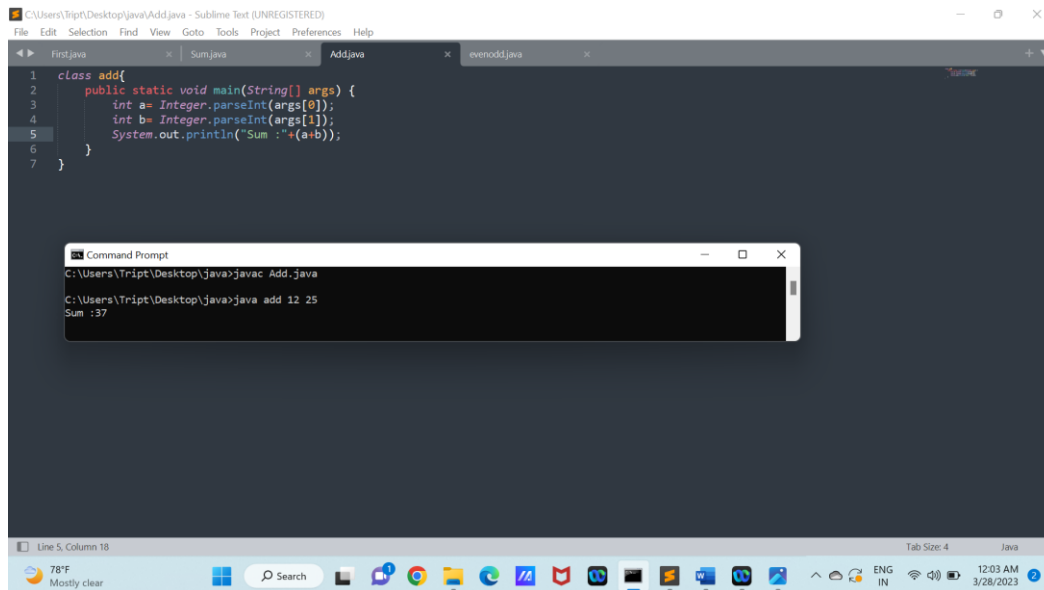
Below the editor, a Command Prompt window is open, showing the following commands and output:

```
Microsoft Windows [Version 10.0.22000.1455]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\Tript>cd Desktop  
  
C:\Users\Tript\Desktop>cd java  
  
C:\Users\Tript\Desktop\java>javac First.java  
  
C:\Users\Tript\Desktop\java>java First.java  
Hello World  
  
C:\Users\Tript\Desktop\java>
```

2. Write a Java Program to Add two numbers/binary numbers/characters.

Ans. class add{

```
    public static void main(String[] args) {  
        int a= Integer.parseInt(args[0]);  
        int b= Integer.parseInt(args[1]);  
        System.out.println("Sum :"+(a+b));  
    }  
}
```



```
1 class add{
2     public static void main(String[] args) {
3         int a= Integer.parseInt(args[0]);
4         int b= Integer.parseInt(args[1]);
5         System.out.println("Sum :'+(a+b));
6     }
7 }
```

```
C:\Users\Tript\Desktop\java>javac Add.java
C:\Users\Tript\Desktop\java>java add 12 25
Sum :37
```

3. Write a Java Program to Calculate compound interest.

Ans.

```
public class CompoundInterest {

    public static void main (String args[]){

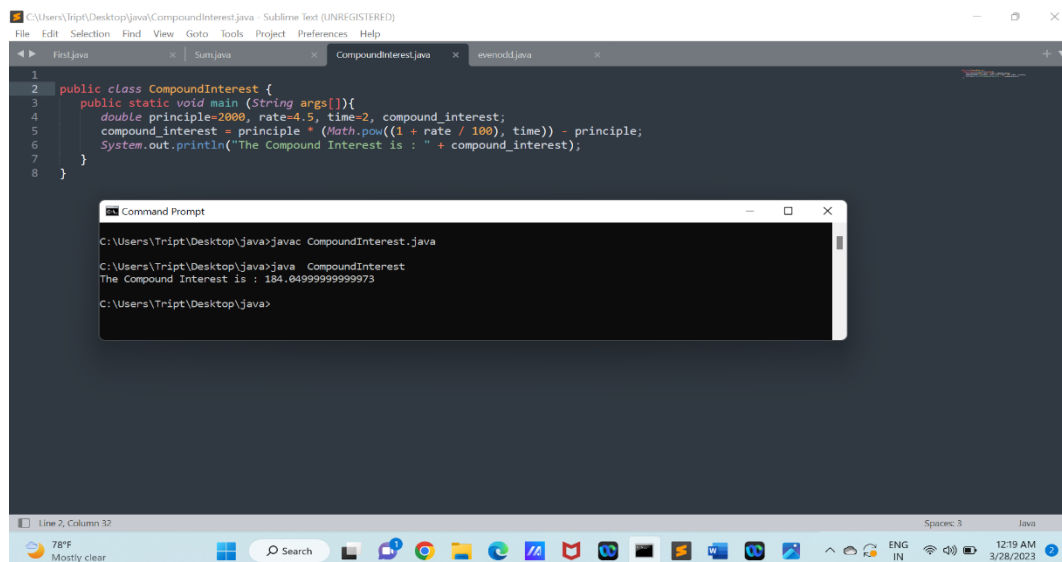
        double principle=2000, rate=4.5, time=2, compound_interest;

        compound_interest = principle * (Math.pow((1 + rate / 100), time)) - principle;

        System.out.println("The Compound Interest is : " + compound_interest);

    }

}
```



```
1
2 public class CompoundInterest {
3     public static void main (String args[]){
4         double principle=2000, rate=4.5, time=2, compound_interest;
5         compound_interest = principle * (Math.pow((1 + rate / 100), time)) - principle;
6         System.out.println("The Compound Interest is : " + compound_interest);
7     }
8 }
```

```
C:\Users\Tript\Desktop\java>javac CompoundInterest.java
C:\Users\Tript\Desktop\java>java CompoundInterest
The Compound Interest is : 184.04999999999973
C:\Users\Tript\Desktop\java>
```

4. Write a Java Program to Calculate power of a number.

Ans. import java.util.Scanner;

class Power{

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

int a = sc.nextInt();

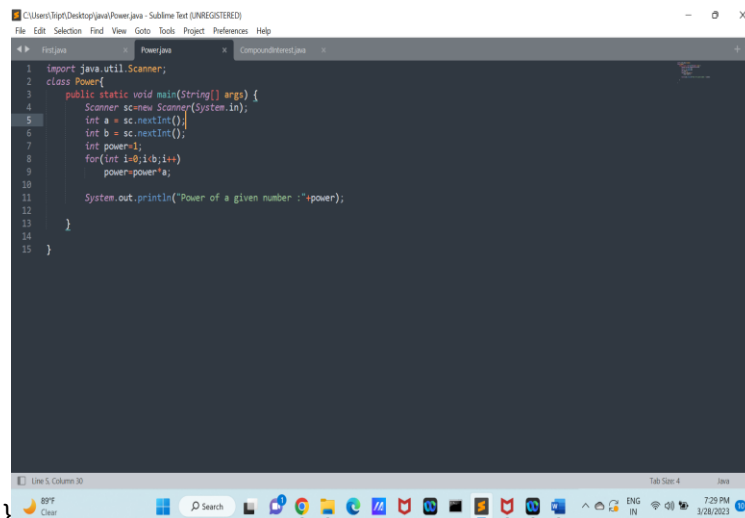
int b = sc.nextInt();

int power=1;

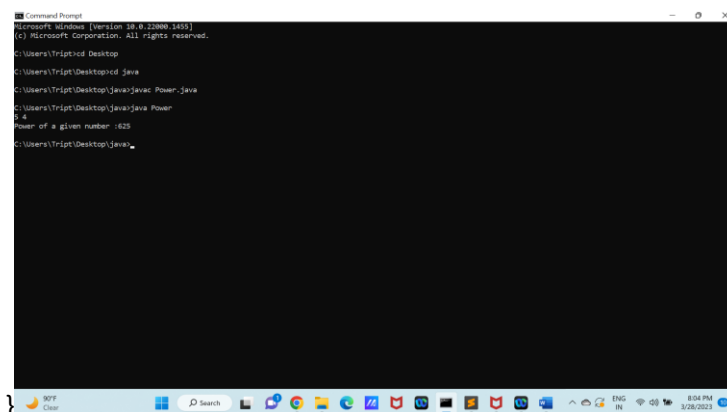
for(int i=0;i<b;i++)

power=power*a;

System.out.println("Power of a given number :"+power);

A screenshot of a Sublime Text editor window. The title bar shows the file path 'C:\Users\Tript\Desktop\Java\Power.java - Sublime Text (UNREGISTERED)'. The editor contains the following Java code:

```
1 import java.util.Scanner;
2 class Power{
3     public static void main(String[] args) {
4         Scanner sc=new Scanner(System.in);
5         int a = sc.nextInt();
6         int b = sc.nextInt();
7         int power=1;
8         for(int i=0;i<b;i++)
9             power=power*a;
10
11         System.out.println("Power of a given number :"+power);
12     }
13 }
14
15 }
```

The status bar at the bottom indicates 'Line 5, Column 30' and 'Tab Size: 4'.A screenshot of a Windows Command Prompt window. The title bar says 'Command Prompt'. The text shows the directory path 'C:\Users\Tript\Desktop\Java' and the command 'javac Power.java' being executed. The output shows the number '4' entered, followed by the calculated power '625'.

```
C:\Users\Tript\Desktop\Java
C:\Users\Tript\Desktop\Java>javac Power.java
4
Power of a given number :625
C:\Users\Tript\Desktop\Java>
```

5. Write a Java Program to Swap two numbers.

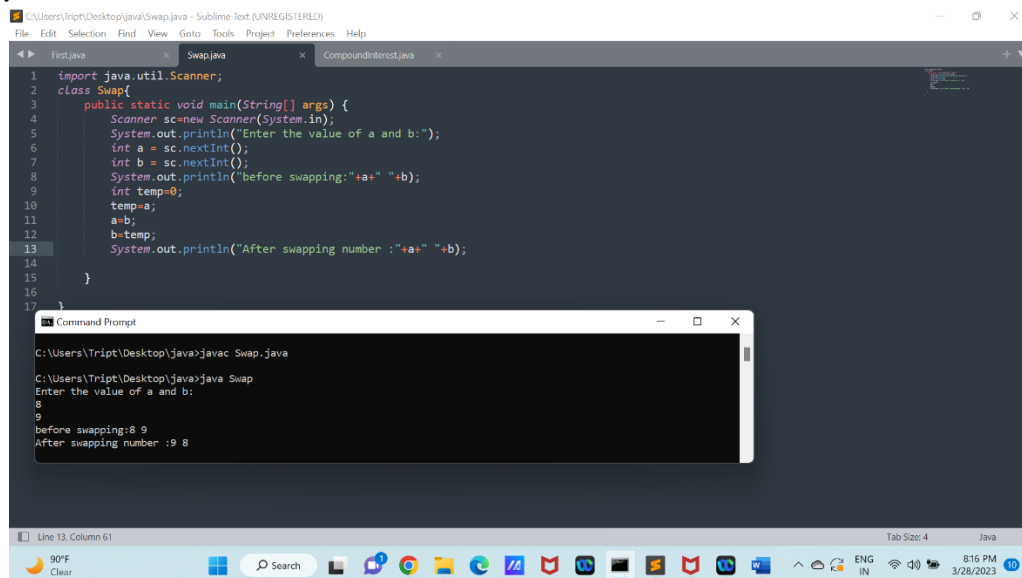
Ans. import java.util.Scanner;

```
class Swap{
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the value of a and b:");
        int a = sc.nextInt();
        int b = sc.nextInt();
        System.out.println("before swapping:"+a+" "+b);

        int temp=0;
        temp=a;
        a=b;
        b=temp;

        System.out.println("After swapping number :"+a+" "+b);

    }
}
```



The screenshot shows a Sublime Text editor window with the following code in 'Swap.java':

```
1 import java.util.Scanner;
2 class Swap{
3     public static void main(String[] args) {
4         Scanner sc=new Scanner(System.in);
5         System.out.println("Enter the value of a and b:");
6         int a = sc.nextInt();
7         int b = sc.nextInt();
8         System.out.println("before swapping:"+a+" "+b);
9         int temp=0;
10        temp=a;
11        a=b;
12        b=temp;
13        System.out.println("After swapping number :"+a+" "+b);
14    }
15 }
16 }
17 }
```

Below the editor is a Command Prompt window showing the execution:

```
C:\Users\Tript\Desktop\java>javac Swap.java
C:\Users\Tript\Desktop\java>java Swap
Enter the value of a and b:
8
9
before swapping:8 9
After swapping number :9 8
```

6. Write a Java Program to Calculate area of rectangle.

Ans. import java.util.Scanner;

```
class Rectangle{
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the value of length and breadth:");
        float l = sc.nextFloat();
        float b = sc.nextFloat();

        float rect =l*b;

        System.out.println("Area of a rectangle :"+rect+"square metre");
    }
}
```

```

}
}

C:\Users\Tript\Desktop\java\Rectangle.java - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
First.java Rectangle.java CompoundInterest.java
1 import java.util.Scanner;
2 class Rectangle{
3     public static void main(String[] args) {
4         Scanner sc=new Scanner(System.in);
5         System.out.println("Enter the value of length and breadth:");
6         float l = sc.nextFloat();
7         float b = sc.nextFloat();
8         float rect =l*b;
9         System.out.println("Area of a rectangle :"+rect+"square metre");
10    }
11 }
12
13

Command Prompt
C:\Users\Tript\Desktop\java>java Rectangle.java
Enter the value of length and breadth:
30
30
Area of a rectangle :600.0square metre
C:\Users\Tript\Desktop\java>

```

7. Write a Java Program to Calculate area and circumference of circle using multiple classes.

Ans. import java.util.Scanner;

public class circle{

public static void main(String[] args) {

Scanner sc= new Scanner(System.in);

System.out.println("Enter radius of a circle :");

float r=sc.nextFloat();

float circum=2*(float)Math.PI*r;

float area = (float)Math.PI*r*r;

System.out.println("circumference of a circle :"+circum);

System.out.println("Area of a circle :"+area);

}

)

```

C:\Users\Tript\Desktop\java\circle.java - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
untitled circle.java
1 import java.util.Scanner;
2 public class circle{
3     public static void main(String[] args) {
4         Scanner sc= new Scanner(System.in);
5         System.out.println("Enter radius of a circle :");
6         float r=sc.nextFloat();
7         float circum=2*(float)Math.PI*r;
8         float area = (float)Math.PI*r*r;
9         System.out.println("circumference of a circle :"+circum);
10        System.out.println("Area of a circle :"+area);
11    }
12 }
13
14

Command Prompt
C:\Users\Tript\Desktop\java>java circle
Enter radius of a circle :
5
circumference of a circle :50.265484
Area of a circle :201.06194
C:\Users\Tript\Desktop\java>

```

8. Write a Java Program to find ASCII value of a character.

Ans. import java.util.*;

public class Ascii{

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

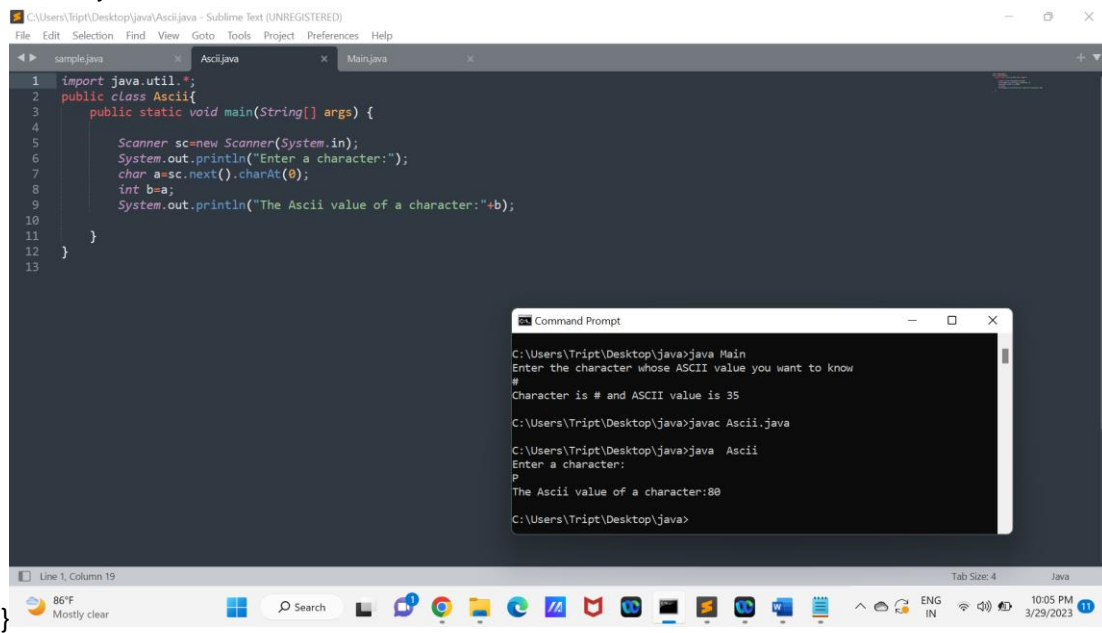
System.out.println("Enter a character:");

char a=sc.next().charAt(0);

int b=a;

System.out.println("The Ascii value of a character:"+b);

}



The screenshot shows a Sublime Text editor window with the following Java code:

```
1 import java.util.*;
2 public class Ascii{
3     public static void main(String[] args) {
4
5         Scanner sc=new Scanner(System.in);
6         System.out.println("Enter a character:");
7         char a=sc.next().charAt(0);
8         int b=a;
9         System.out.println("The Ascii value of a character:"+b);
10
11     }
12 }
13
```

Below the editor, a Command Prompt window shows the execution of the program:

```
C:\Users\Tript\Desktop\java>java Main
Enter the character whose ASCII value you want to know
#
Character is # and ASCII value is 35

C:\Users\Tript\Desktop\java>javac Ascii.java

C:\Users\Tript\Desktop\java>java Ascii
Enter a character:
P
The Ascii value of a character:80

C:\Users\Tript\Desktop\java>
```

9. Write a Java Program to Print default values of primitive data type variables.

Ans. public class Primitive {

static boolean a;

static int b;

static long c;

static byte d;

static float e;

static double f;

static short g;

```

static char h;

public static void main(String[] args) {

    System.out.println("Default value of boolean Type = " + a);

    System.out.println("Default value of int Type = " + b);

    System.out.println("Default value of long Type = " + c);

    System.out.println("Default value of byte Type = " + d);

    System.out.println("Default value of float Type = " + e);

    System.out.println("Default value of double Type = " + f);

    System.out.println("Default value of short Type = " + g);

    System.out.println("Default value of char Type = " + h);

}
}

```

The screenshot shows a Sublime Text editor window with a file named 'Primitive.java'. The code defines a class 'Primitive' with static variables for all primitive types and a 'main' method that prints their default values. A 'Command Prompt' window is open, showing the execution of 'javac Primitive.java' and 'java Primitive', which outputs the default values for each type: boolean (false), int (0), long (0), byte (0), float (0.0), double (0.0), short (0), and char ().

```

C:\Users\Tript\Desktop\java\Primitive.java - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help

untitled circle.java Primitive.java

1
2 public class Primitive {
3
4     static boolean a;
5     static int b;
6     static long c;
7     static byte d;
8     static float e;
9     static double f;
10    static short g;
11    static char h;
12
13    public static void main(String[] args) {
14
15        System.out.println("Default value of boolean Type = " + a);
16        System.out.println("Default value of int Type = " + b);
17        System.out.println("Default value of long Type = " + c);
18        System.out.println("Default value of byte Type = " + d);
19        System.out.println("Default value of float Type = " + e);
20        System.out.println("Default value of double Type = " + f);
21        System.out.println("Default value of short Type = " + g);
22        System.out.println("Default value of char Type = " + h);
23    }
24 }

C:\Users\Tript\Desktop\java>javac Primitive.java
C:\Users\Tript\Desktop\java>java Primitive
Default value of boolean Type = false
Default value of int Type = 0
Default value of long Type = 0
Default value of byte Type = 0
Default value of float Type = 0.0
Default value of double Type = 0.0
Default value of short Type = 0
Default value of char Type = 
C:\Users\Tript\Desktop\java>

```

10. Write a Java Program to Swap two variables without using the third variable.

Ans. import java.util.Scanner;

```

class Swapping{

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

        System.out.println("Enter the value of a and b:");
    }
}

```

```

        int a = sc.nextInt();

        int b = sc.nextInt();

        System.out.println("before swapping:"+a+" "+b);

        a=a+b;

        b=a-b;

        a=a-b;

        System.out.println("After swapping number :"+a+" "+b);

    }}

```

The screenshot shows a Sublime Text editor window with a Java file named 'Swapping.java'. The code in the editor is as follows:

```

1  import java.util.Scanner;
2  class Swapping{
3      public static void main(String[] args) {
4          Scanner sc=new Scanner(System.in);
5          System.out.println("Enter the value of a and b:");
6          int a = sc.nextInt();
7          int b = sc.nextInt();
8          System.out.println("before swapping:"+a+" "+b);
9
10         a=a+b;
11         b=a-b;
12         a=a-b;
13         System.out.println("After swapping number :"+a+" "+b);
14     }
15 }
16
17 }

```

Below the editor, a Command Prompt window is open, showing the execution of the program. The output is as follows:

```

C:\Users\Tript\Desktop\java>java Swapping.java
Enter the value of a and b:
10
12
before swapping:10 12
After swapping number :12 10
C:\Users\Tript\Desktop\java>

```

11. Write a Java Program to Print Fibonacci series till n times.

Ans. class fibonacci

```

{

public static void main(String[] args) {

int n=15;

int fib0 =0, fib1 =1;

System.out.println("fibonacci series is:\n");

for(int i=0;i<15;i++){

System.out.println(fib0);

int sum=fib0 + fib1;

fib0=fib1;

```

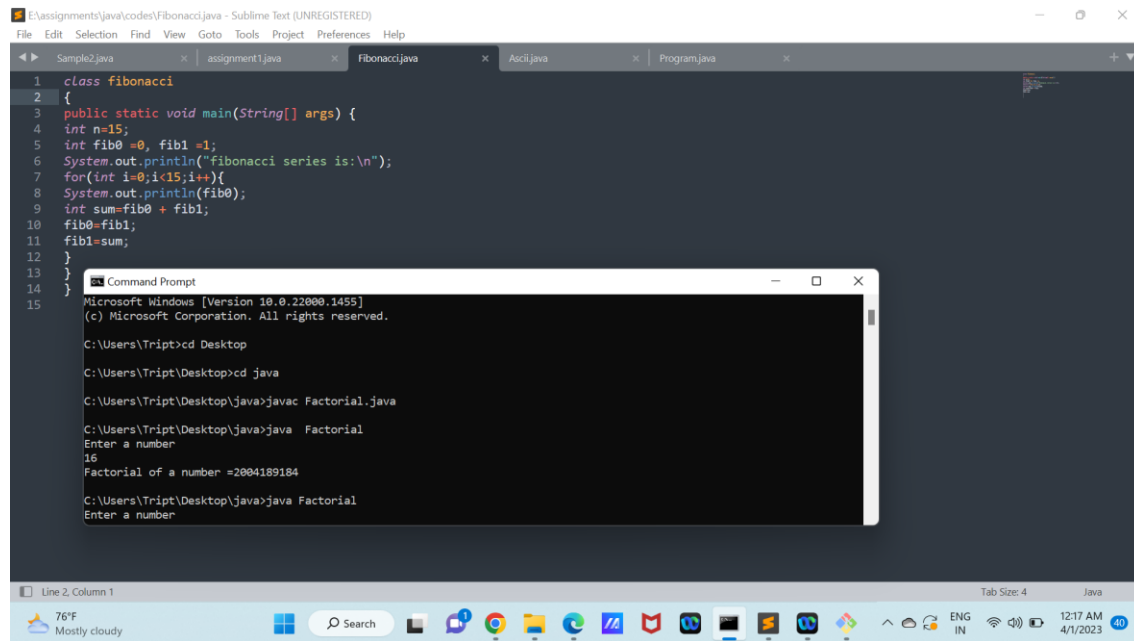


```
fib1=sum;
```

```
}
```

```
}
```

```
}
```



The screenshot shows a Sublime Text editor window with the file path `E:\assignments\java\codes\Fibonacci.java`. The editor contains a Java program for calculating the Fibonacci series. The code is as follows:

```
1 class fibonacci
2 {
3     public static void main(String[] args) {
4         int n=15;
5         int fib0 =0, fib1 =1;
6         System.out.println("fibonacci series is:\n");
7         for(int i=0;i<15;i++){
8             System.out.println(fib0);
9             int sum=fib0 + fib1;
10            fib0=fib1;
11            fib1=sum;
12        }
13    }
14 }
15 }
```

Overlaid on the editor is a Windows Command Prompt window. The commands and output are:

```
C:\Users\Tript>cd Desktop
C:\Users\Tript\Desktop>cd java
C:\Users\Tript\Desktop\java>javac Factorial.java
C:\Users\Tript\Desktop\java>java Factorial
Enter a number
16
Factorial of a number =2004189184
C:\Users\Tript\Desktop\java>java Factorial
Enter a number
```

The Windows taskbar at the bottom shows the system clock as 12:17 AM on 4/1/2023, with a temperature of 76°F and the text 'Mostly cloudy'.