

PROGRAM 1:

Print a simple “Hello World!” and move the subsequent text to the next line.

The screenshot shows a Java code editor interface. The current file is `Main.java`. The code contains a simple `Hello World!` application:

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

Below the code editor, the terminal window shows the output of running the compiled Java program:

```
@19akshansh ~ /workspaces/IT-project/JAVA/programs (main) $ javac ./Main.java  
@19akshansh ~ /workspaces/IT-project/JAVA/programs (main) $ java ./Main.java  
Hello World!  
@19akshansh ~ /workspaces/IT-project/JAVA/programs (main) $
```

PROGRAM 2:

Receive grade(in float) from the User and return the percentage based on the fact that max marks = 500.

The screenshot shows a Java code editor interface. The current file is `PercentageCalculator.java`. The code prompts the user for marks obtained and calculates the percentage relative to a maximum of 500:

```
1 import java.util.Scanner;  
2  
3 public class PercentageCalculator {  
4     public static void main (String[] args) {  
5         double maxMarks = 500;  
6         Scanner userInput = new Scanner(System.in);  
7         System.out.print("Enter Marks Obtained: ");  
8         double marksObtained = userInput.nextDouble();  
9         double percentage = (marksObtained/maxMarks)*100;  
10        System.out.println("Percentage: " + percentage);  
11    }  
12 }
```

Below the code editor, the terminal window shows the execution of the program and user interaction:

```
@19akshansh ~ /workspaces/IT-project/JAVA/programs (main) $ java ./PercentageCalculator.java  
Enter Marks Obtained: 83  
Percentage: 0.166  
@19akshansh ~ /workspaces/IT-project/JAVA/programs (main) $ java ./PercentageCalculator.java  
Enter Marks Obtained: 50  
Percentage: 10.0  
@19akshansh ~ /workspaces/IT-project/JAVA/programs (main) $ java ./PercentageCalculator.java  
Enter Marks Obtained: 50.5  
Percentage: 10.100000000000001
```

PROGRAM 3:

Receive two Integers and return their sum.

The screenshot shows a Java code editor with the following code:

```
JAVA > programs > J SumTwoNumbers.java > SumTwoNumbers > main(String[])
```

```
1 import java.util.Scanner;
2
3 public class SumTwoNumbers {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.print("Enter first number: ");
7         int a = sc.nextInt();
8         System.out.print("Enter second number: ");
9         int b = sc.nextInt();
10        int sum = a + b;
11        System.out.println("Sum = " + sum);
12    }
13}
```

Below the code, there is a terminal window showing the execution of the program:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
```

```
@19akshansh ➔ /workspaces/IT-project/JAVA/programs (main) $ java ./SumTwoNumbers.java
Enter first number: 10
Enter second number: 20
Sum = 30
@19akshansh ➔ /workspaces/IT-project/JAVA/programs (main) $
```

PROGRAM 4:

Receive a non-zero Integer and identify whether it's Odd or Even.

The screenshot shows a Java code editor with the following code:

```
J JAVA > programs > J EvenOrOdd.java > EvenOrOdd > main(String[])
```

```
1 import java.util.Scanner;
2
3 public class EvenOrOdd {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.print("Enter a number: ");
7         int n = sc.nextInt();
8
9         if (n == 0)
10            System.out.println("0 is neither Odd nor Even!");
11         else if (n % 2 == 0)
12            System.out.println(n+ " is an Even number");
13         else
14            System.out.println(n+ " is an Odd number");
15     }
16 }
```

Below the code, there is a terminal window showing the execution of the program:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
```

```
@19akshansh ➔ /workspaces/IT-project/JAVA/programs (main) $ java ./EvenOrOdd.java
Enter a number: 12
12 is an Even number
@19akshansh ➔ /workspaces/IT-project/JAVA/programs (main) $
```

PROGRAM 5:

Receive three numbers and return the largest one.

The screenshot shows a Java code editor with the file 'LargestOfThree.java' open. The code reads three integers from the user, determines the largest one, and prints it out. Below the code editor is a terminal window showing the execution of the program and its output.

```
JAVA > programs > J LargestOfThree.java > LargestOfThree > main(String[])
1 import java.util.Scanner;
2
3 public class LargestOfThree {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6
7         System.out.print("Enter a: ");
8         int a = sc.nextInt();
9         System.out.print("Enter b: ");
10        int b = sc.nextInt();
11        System.out.print("Enter c: ");
12        int c = sc.nextInt();
13
14        int largest = a;
15        if (b > largest) largest = b;
16        if (c > largest) largest = c;
17
18        System.out.println("Largest = " + largest);
19    }
20
21 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

- @19akshansh ➔ /workspaces/IT-project/JAVA/programs (main) \$ java ./LargestOfThree.java
Enter a: 10
Enter b: 12
Enter c: 8
Largest = 12
- @19akshansh ➔ /workspaces/IT-project/JAVA/programs (main) \$ █

PROGRAM 6:

Receive a radius and return the area of the circle.

The screenshot shows a Java code editor with the file 'AreaCircle.java' open. The code reads a radius from the user and calculates the area of a circle using the formula πr^2 . Below the code editor is a terminal window showing the execution of the program and its output.

```
JAVA > programs > J AreaCircle.java > AreaCircle > main(String[])
1 import java.util.Scanner;
2
3 public class AreaCircle {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6
7         System.out.print("Enter radius of the circle: ");
8         double r = sc.nextDouble();
9
10        double area = 3.14159 * r * r;
11        System.out.println("Area of the circle = " + area);
12    }
13
14 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

- @19akshansh ➔ /workspaces/IT-project/JAVA/programs (main) \$ java ./AreaCircle.java
Enter radius of the circle: 7
Area of the circle = 153.93791
- @19akshansh ➔ /workspaces/IT-project/JAVA/programs (main) \$ █

PROGRAM 7:

Receive a radius and return the area of the cube.

```
J AreaCube.java ✘ 
JAVA > programs > J AreaCube.java > AreaCube > main(String[])
1 import java.util.Scanner;
2
3 public class AreaCube {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6
7         System.out.print("Enter length of a side of the cube(cms): ");
8         double a = sc.nextDouble();
9
10        double area = a * a * a;
11        System.out.println("Area of the Cube = " + area);
12    }
13 }
14
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

- @19akshansh → /workspaces/IT-project/JAVA/programs (main) \$ java ./AreaCube.java
Enter length of a side of the cube(cms): 12
Area of the Cube = 1728.0
- @19akshansh → /workspaces/IT-project/JAVA/programs (main) \$

PROGRAM 8:

Receive a Number and return its Factorial.

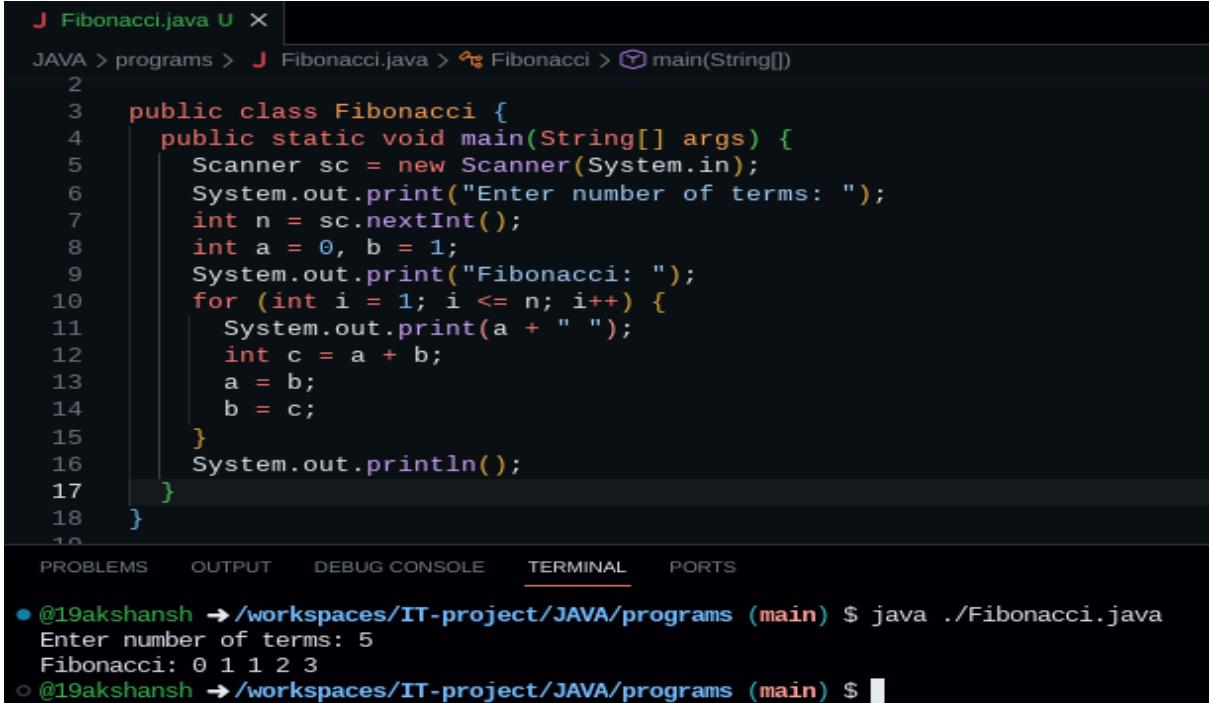
```
J Factorial.java ✘ 
JAVA > programs > J Factorial.java > Factorial > main(String[])
1 import java.util.Scanner;
2
3 public class Factorial {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.print("Enter a number: ");
7         int n = sc.nextInt();
8         long fact = 1;
9         for (int i = 1; i <= n; i++) {
10             fact *= i;
11         }
12         System.out.println("Factorial of " + n + " = " + fact);
13     }
14 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

- @19akshansh → /workspaces/IT-project/JAVA/programs (main) \$ java ./Factorial.java
Enter a number: 4
Factorial of 4 = 24
- @19akshansh → /workspaces/IT-project/JAVA/programs (main) \$

PROGRAM 9:

Returns a Fibonacci Sequence.



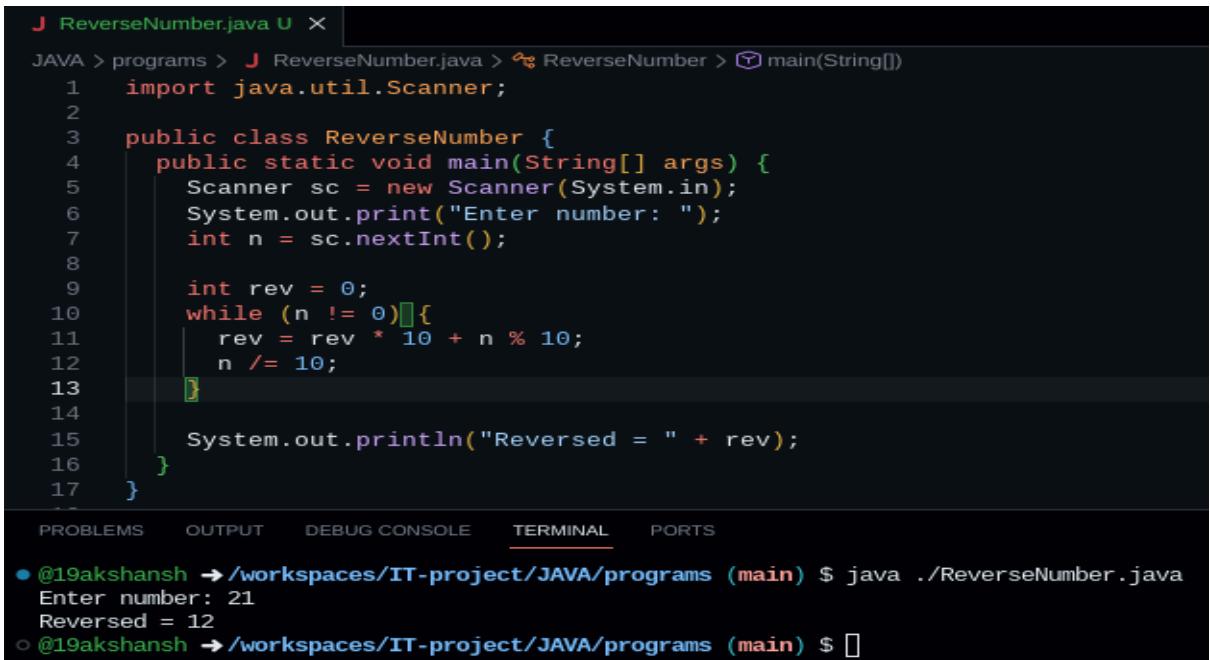
```
J Fibonacci.java ✘
JAVA > programs > J Fibonacci.java > ⚙ Fibonacci > main(String[])
1
2 public class Fibonacci {
3     public static void main(String[] args) {
4         Scanner sc = new Scanner(System.in);
5         System.out.print("Enter number of terms: ");
6         int n = sc.nextInt();
7         int a = 0, b = 1;
8         System.out.print("Fibonacci: ");
9         for (int i = 1; i <= n; i++) {
10             System.out.print(a + " ");
11             int c = a + b;
12             a = b;
13             b = c;
14         }
15         System.out.println();
16     }
17 }
18 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL TERMINAL PORTS

- @19akshansh → /workspaces/IT-project/JAVA/programs (main) \$ java ./Fibonacci.java
Enter number of terms: 5
Fibonacci: 0 1 1 2 3
- @19akshansh → /workspaces/IT-project/JAVA/programs (main) \$ █

PROGRAM 10:

Receive a Number and return its reverse.



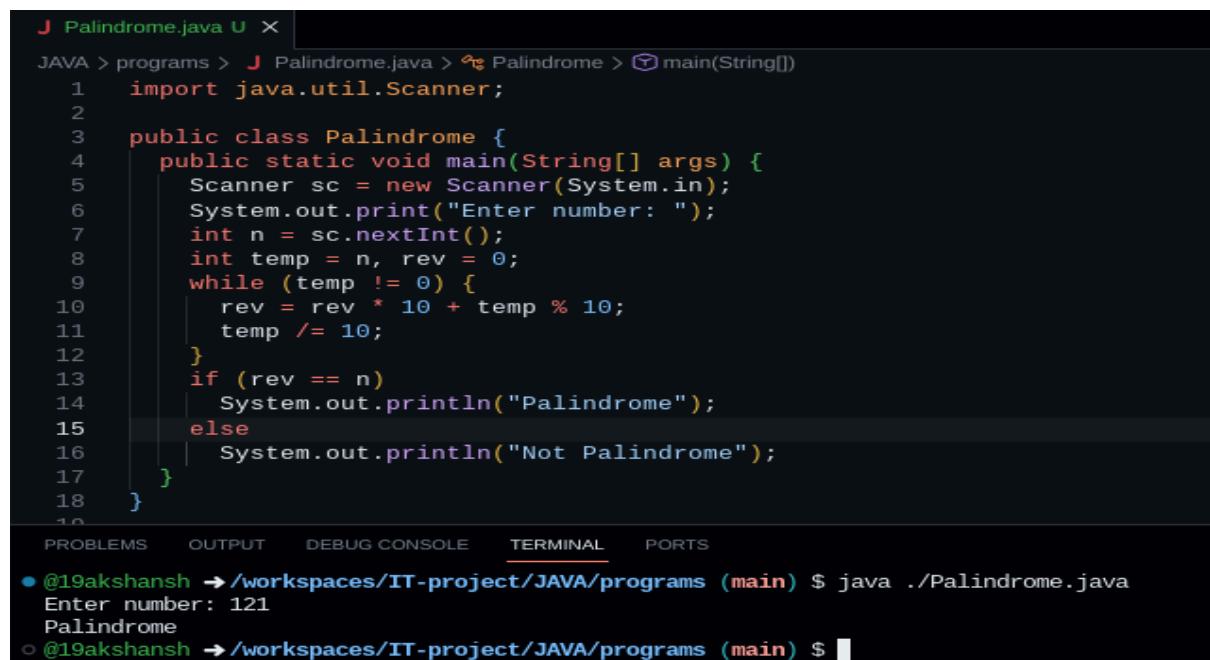
```
J ReverseNumber.java ✘
JAVA > programs > J ReverseNumber.java > ⚙ ReverseNumber > main(String[])
1 import java.util.Scanner;
2
3 public class ReverseNumber {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.print("Enter number: ");
7         int n = sc.nextInt();
8
9         int rev = 0;
10        while (n != 0){
11            rev = rev * 10 + n % 10;
12            n /= 10;
13        }
14
15        System.out.println("Reversed = " + rev);
16    }
17 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL TERMINAL PORTS

- @19akshansh → /workspaces/IT-project/JAVA/programs (main) \$ java ./ReverseNumber.java
Enter number: 21
Reversed = 12
- @19akshansh → /workspaces/IT-project/JAVA/programs (main) \$ █

PROGRAM 11:

Receive a number and return whether it is a Palindrome or not



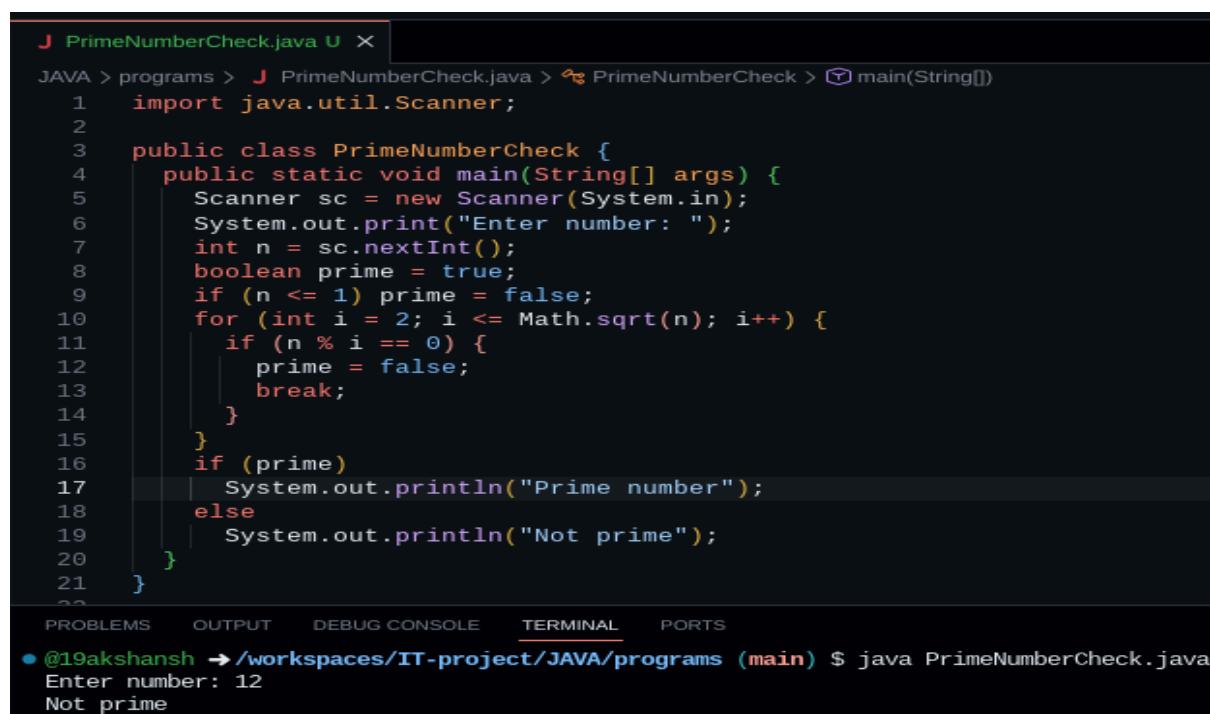
```
J Palindrome.java ✘
JAVA > programs > J Palindrome.java > Palindrome > main(String[])
1 import java.util.Scanner;
2
3 public class Palindrome {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.print("Enter number: ");
7         int n = sc.nextInt();
8         int temp = n, rev = 0;
9         while (temp != 0) {
10             rev = rev * 10 + temp % 10;
11             temp /= 10;
12         }
13         if (rev == n)
14             System.out.println("Palindrome");
15         else
16             System.out.println("Not Palindrome");
17     }
18 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

- @19akshansh → /workspaces/IT-project/JAVA/programs (main) \$ java ./Palindrome.java
Enter number: 121
Palindrome
- @19akshansh → /workspaces/IT-project/JAVA/programs (main) \$

PROGRAM 12:

Receive a Number and Check whether its a Prime number or not.



```
J PrimeNumberCheck.java ✘
JAVA > programs > J PrimeNumberCheck.java > PrimeNumberCheck > main(String[])
1 import java.util.Scanner;
2
3 public class PrimeNumberCheck {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.print("Enter number: ");
7         int n = sc.nextInt();
8         boolean prime = true;
9         if (n <= 1) prime = false;
10        for (int i = 2; i <= Math.sqrt(n); i++) {
11            if (n % i == 0) {
12                prime = false;
13                break;
14            }
15        }
16        if (prime)
17            System.out.println("Prime number");
18        else
19            System.out.println("Not prime");
20    }
21 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

- @19akshansh → /workspaces/IT-project/JAVA/programs (main) \$ java PrimeNumberCheck.java
Enter number: 12
Not prime

PROGRAM 13:

Receive a Number and provide the sum of its digits.

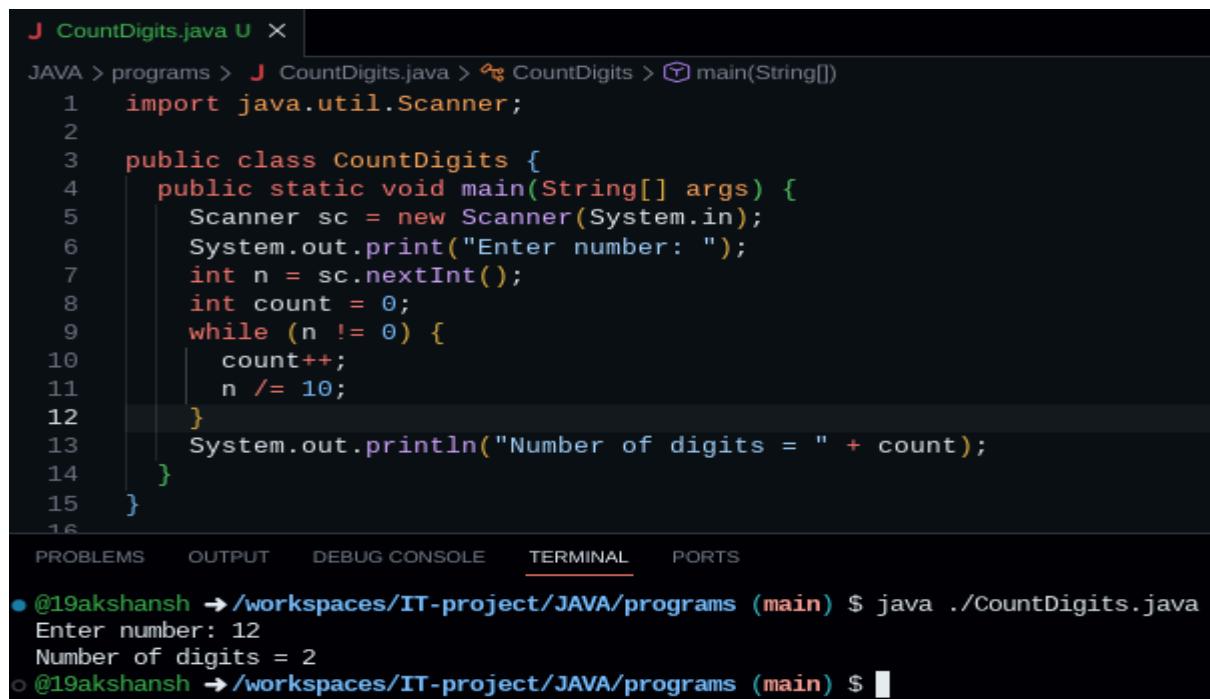


```
J SumOfDigits.java ✘ 
JAVA > programs > J SumOfDigits.java > ...
1 import java.util.Scanner;
2
3 public class SumOfDigits {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6
7         System.out.print("Enter number: ");
8         int n = sc.nextInt();
9
10        int sum = 0;
11        while (n != 0) {
12            sum += n % 10;
13            n /= 10;
14        }
15
16        System.out.println("Sum of digits = " + sum);
17    }
18 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
● @19akshansh → /workspaces/IT-project/JAVA/programs (main) $ java ./SumOfDigits.java
Enter number: 12
Sum of digits = 3
```

PROGRAM 14:

Receive a Number and return the number of digits in that number.



```
J CountDigits.java ✘ 
JAVA > programs > J CountDigits.java > CountDigits > main(String[])
1 import java.util.Scanner;
2
3 public class CountDigits {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.print("Enter number: ");
7         int n = sc.nextInt();
8         int count = 0;
9         while (n != 0) {
10            count++;
11            n /= 10;
12        }
13        System.out.println("Number of digits = " + count);
14    }
15
16 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
● @19akshansh → /workspaces/IT-project/JAVA/programs (main) $ java ./CountDigits.java
Enter number: 12
Number of digits = 2
○ @19akshansh → /workspaces/IT-project/JAVA/programs (main) $ █
```

PROGRAM 15:

Receive a Number and return its Multiplication Table up to 10 Multiples.

The screenshot shows a Java code editor with a file named `MultiplicationTable.java`. The code prints a multiplication table for a user-specified number up to 10 times. The terminal below shows the execution of the program and its output for the number 20.

```
J MultiplicationTable.java U X
JAVA > programs > J MultiplicationTable.java > ...
1 import java.util.Scanner;
2
3 public class MultiplicationTable {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6
7         System.out.print("Enter number: ");
8         int n = sc.nextInt();
9
10        for (int i = 1; i <= 10; i++) {
11            System.out.println(n + " x " + i + " = " + (n * i));
12        }
13    }
14 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
● @19akshansh → /workspaces/IT-project/JAVA/programs (main) $ java ./MultiplicationTable.java
Enter number: 20
20 x 1 = 20
20 x 2 = 40
20 x 3 = 60
20 x 4 = 80
20 x 5 = 100
20 x 6 = 120
20 x 7 = 140
20 x 8 = 160
20 x 9 = 180
20 x 10 = 200
```