CSA0979 Java programming

Assignment-1

T.Deekshitha

(192011256)

1) Write a program to find the number of composite numbers in an array of elements

Sample Input;:

Array of elements = {16, 18, 27, 16, 23, 21, 19}

Sample Output:

Number of Composite Numbers = 5

Test cases:

1. Array of elements = {26, 28, 37, 26, 33, 31, 29}

2. Array of elements = {1.6, 1.8, 2.7, 1.6, 2.3, 2.1, .19}

3. Array of elements = {0, 160, 180, 270, 160, 230, 210, 190, 0}

4. Array of elements = {200, 180, 180, 270, 270, 270, 190, 200}

5. Array of elements = {100, 100, 100, 100, 100, 100, 100, 100}

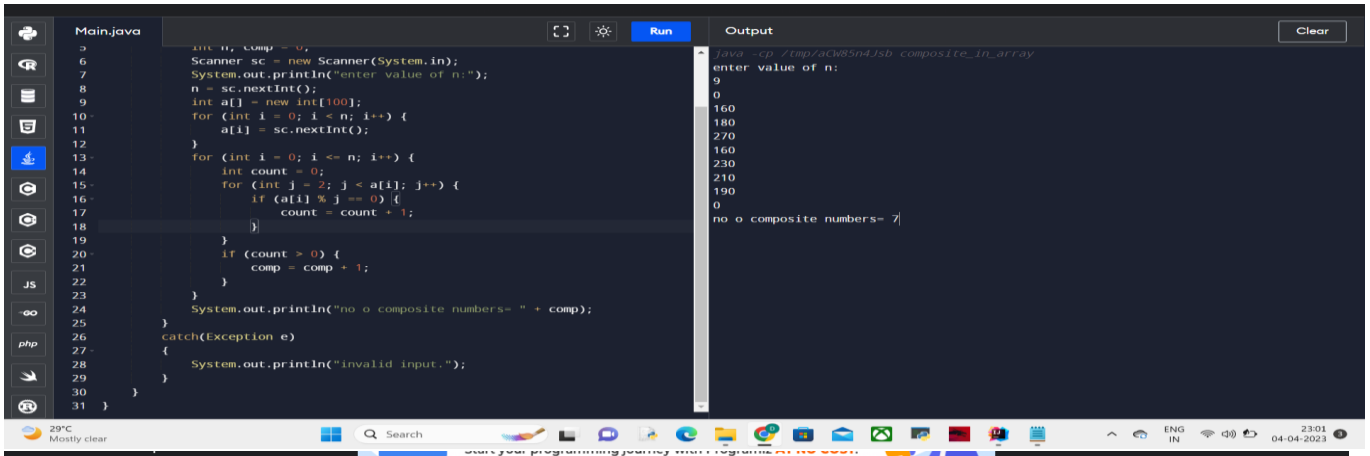
OUTPUT:

```
import java.util.*;

public class composite_in_array {
```

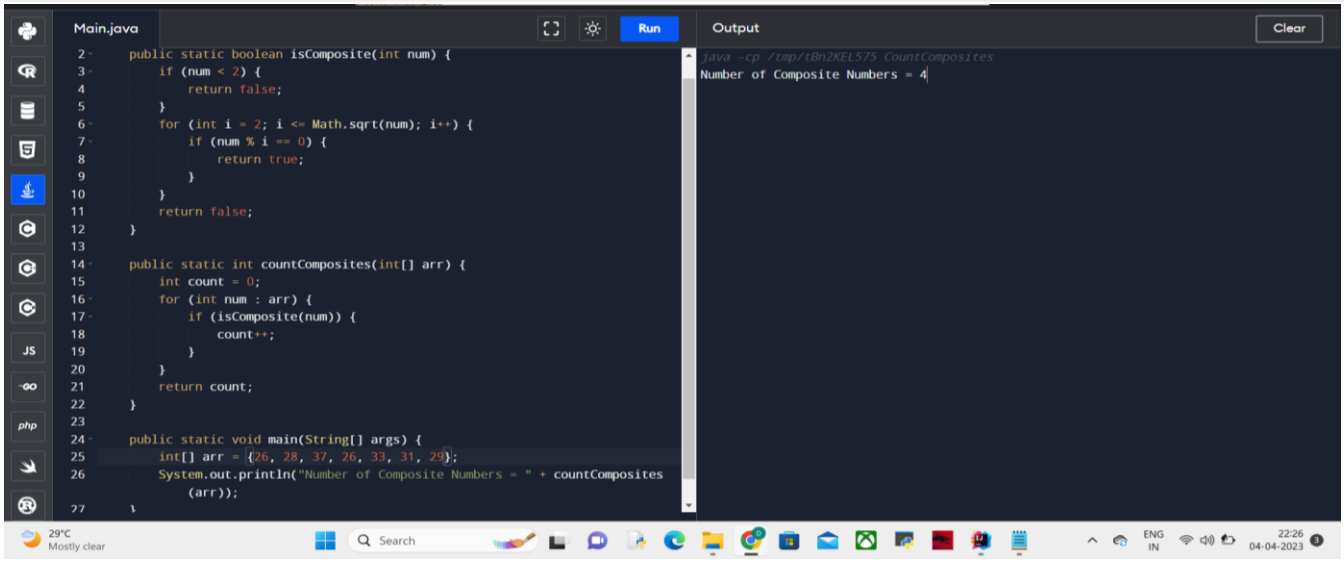
```
public static void main(String[] args) {
   try {
      int n, comp = 0;
      Scanner sc = new Scanner(System.in);
      System.out.println("enter value of n:");
      n = sc.nextInt();
      int a[] = new int[100];
      for (int i = 0; i < n; i++) {
         a[i] = sc.nextInt();
      }
      for (int i = 0; i <= n; i++) {
         int count = 0;
         for (int j = 2; j < a[i]; j++) {
            if (a[i] % j == 0) {
               count = count + 1;
            }
         }
         if (count > 0) {
            comp = comp + 1;
         }
      }
      System.out.println("no o composite numbers= " + comp);
   }
   catch(Exception e)
```

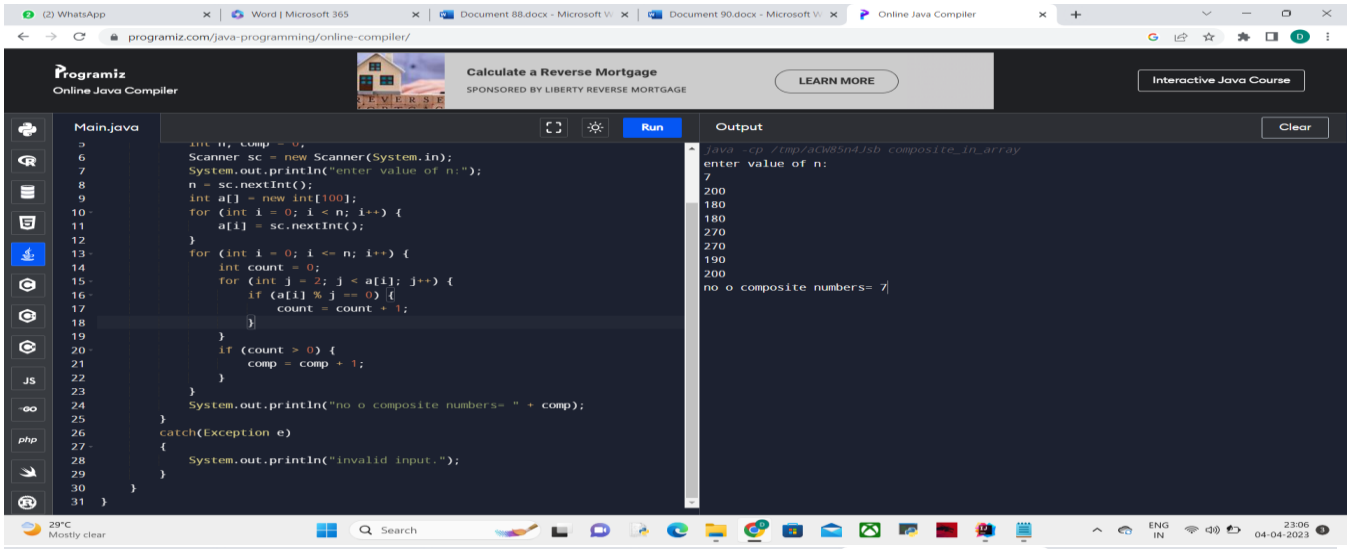
```
        {
            System.out.println("invalid input.");
        }
    }
}
```

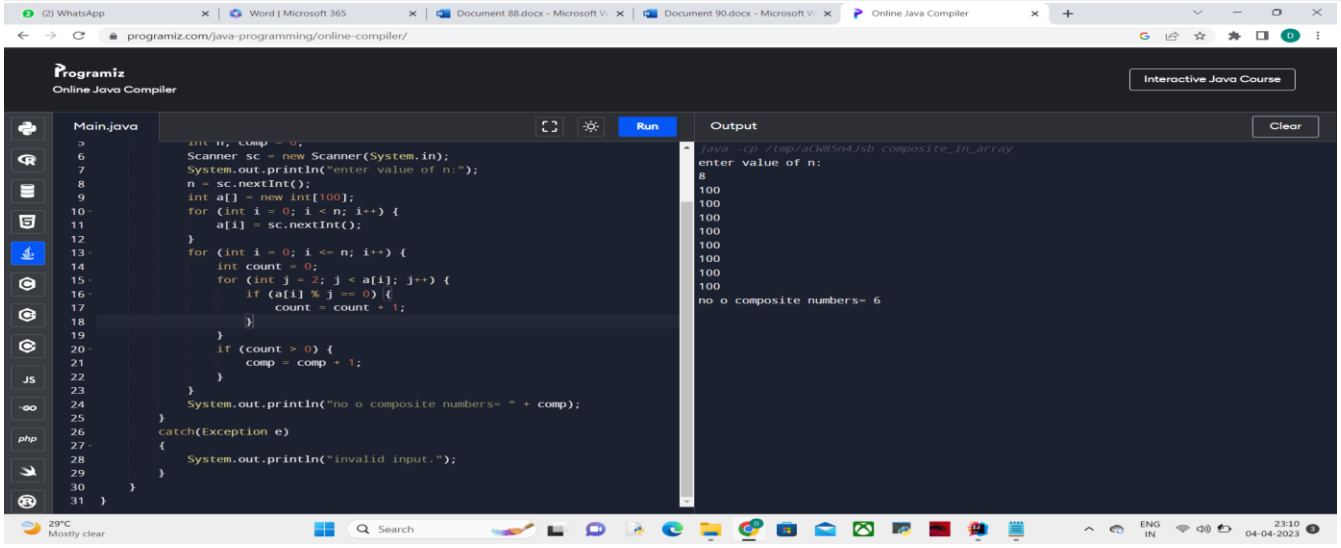
OUTPUT:


Main.java
Run
Output
Clear
Scanner sc = new Scanner(System.in);
System.out.println("enter value of n:");
n = sc.nextInt();
int a[] = new int[100];
for (int i = 0; i < n; i++) {
a[i] = sc.nextInt();
}
for (int i = 0; i <= n; i++) {
int count = 0;
for (int j = 2; j < a[i]; j++) {
if (a[i] % j == 0) {
count = count + 1;
}
}
if (count > 0) {
comp = comp + 1;
}
}
System.out.println("no o composite numbers= " + comp);
}
catch(Exception e)
{
System.out.println("invalid input.");
}
}
}
java -cp /tmp/aCW85n4Jsb composite_in_array
enter value of n:
9
0
160
180
270
160
230
210
190
0
no o composite numbers= 7
29°C
Mostly clear
Search
ENG
IN
23:01
04-04-2023


Main.java
Run
Output
Clear
import java.util.*;
public class composite_in_array {
public static void main(String[] args) {
try {
int n, comp = 0;
Scanner sc = new Scanner(System.in);
System.out.println("enter value of n:");
n = sc.nextInt();
int a[] = new int[100];
for (int i = 0; i < n; i++) {
a[i] = sc.nextInt();
}
for (int i = 0; i <= n; i++) {
int count = 0;
for (int j = 2; j < a[i]; j++) {
if (a[i] % j == 0) {
count = count + 1;
}
}
if (count > 0) {
comp = comp + 1;
}
}
System.out.println("no o composite numbers= " + comp);
}
catch(Exception e)
java -cp /tmp/69HC5WNMTi composite_in_array
enter value of n:
7
1.6
invalid input.
29°C
Mostly clear
Search
ENG
IN
22:54
04-04-2023


Main.java
Run
Output
Clear
public static boolean isComposite(int num) {
if (num < 2) {
return false;
}
for (int i = 2; i <= Math.sqrt(num); i++) {
if (num % i == 0) {
return true;
}
}
return false;
}
public static int countComposites(int[] arr) {
int count = 0;
for (int num : arr) {
if (isComposite(num)) {
count++;
}
}
return count;
}
public static void main(String[] args) {
int[] arr = {26, 28, 37, 26, 33, 31, 29};
System.out.println("Number of Composite Numbers = " + countComposites
(arr));
java -cp /tmp/tBn2KEL575 CountComposites
Number of Composite Numbers = 4
29°C
Mostly clear
Search
ENG
IN
22:26
04-04-2023





2) Write a program for matrix addition?

Sample Input:

Mat1 = 1 2

5 3

Mat2 = 2 3

4 1

Sample Output:

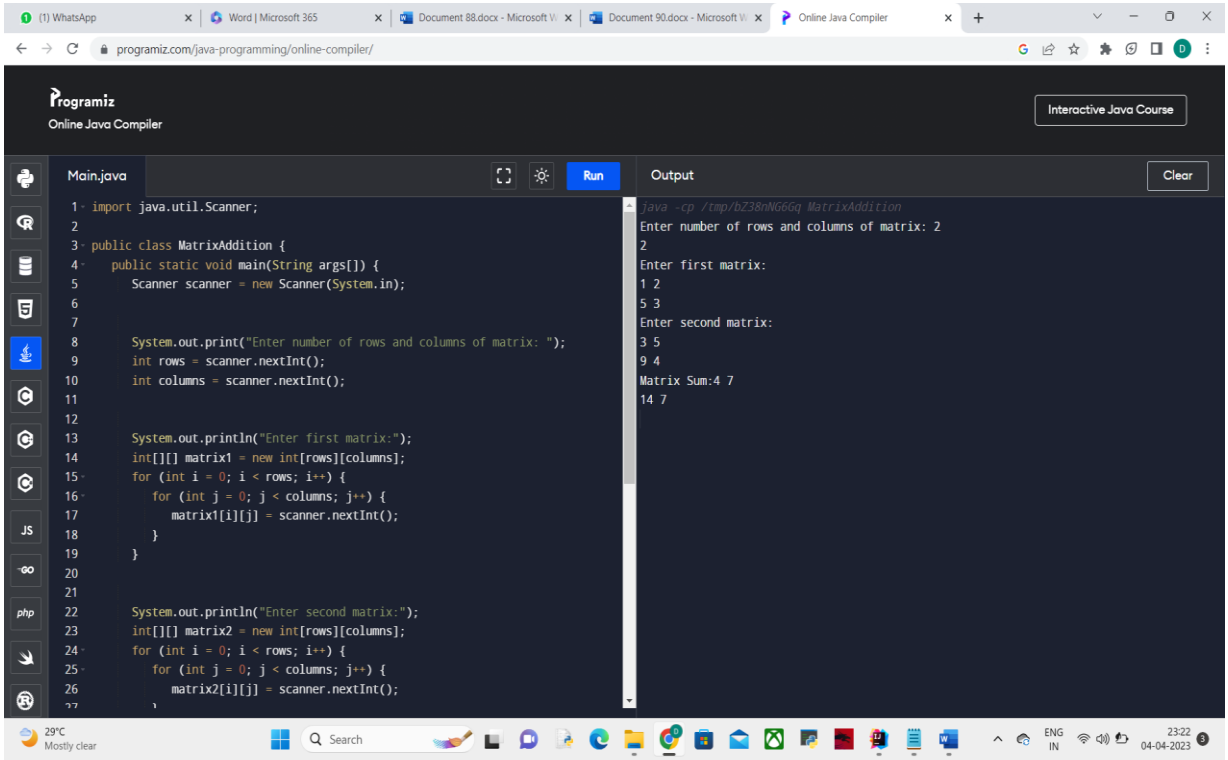
Mat Sum = 3 5

9 4

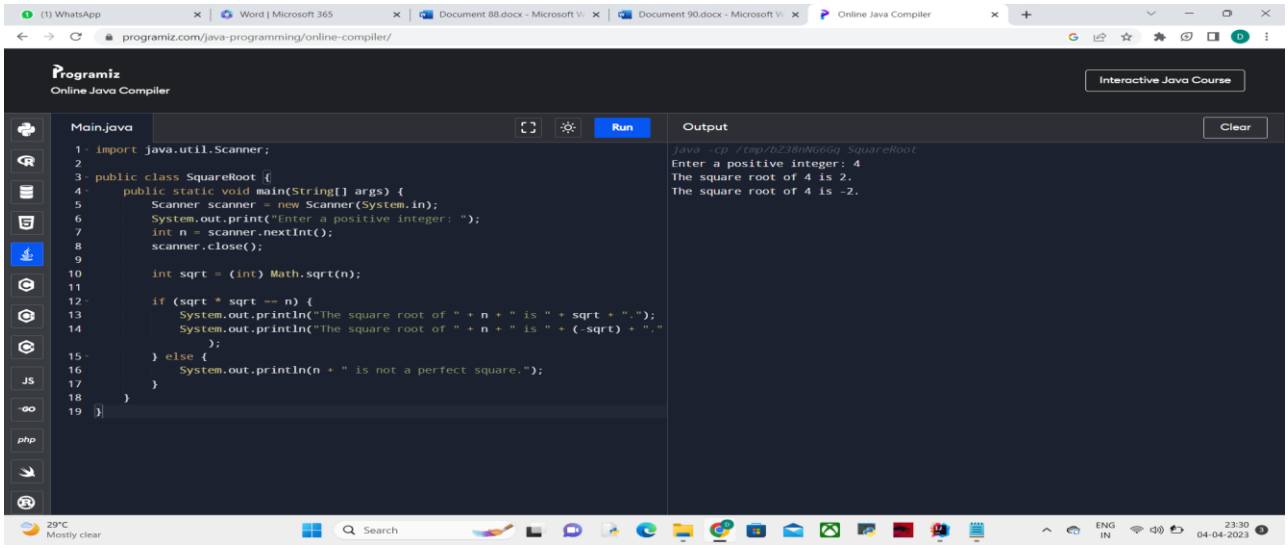
```
import java.util.Scanner;

public class MatrixAddition {
  public static void main(String args[]) {
    Scanner scanner = new Scanner(System.in);


    System.out.print("Enter number of rows and columns of matrix: ");
    int rows = scanner.nextInt();
    int columns = scanner.nextInt();


    System.out.println("Enter first matrix:");
    int[][] matrix1 = new int[rows][columns];
    for (int i = 0; i < rows; i++) {
      for (int j = 0; j < columns; j++) {
        matrix1[i][j] = scanner.nextInt();
      }
    }


    System.out.println("Enter second matrix:");
    int[][] matrix2 = new int[rows][columns];
    for (int i = 0; i < rows; i++) {
      for (int j = 0; j < columns; j++) {
        matrix2[i][j] = scanner.nextInt();
      }
    }


    int[][] sum = new int[rows][columns];
```

```
    for (int i = 0; i < rows; i++) {
      for (int j = 0; j < columns; j++) {
        sum[i][j] = matrix1[i][j] + matrix2[i][j];
      }
    }


    System.out.println("Matrix Sum:");
    for (int i = 0; i < rows; i++) {
      for (int j = 0; j < columns; j++) {
        System.out.print(sum[i][j] + " ");
      }
      System.out.println();
    }
  }
}
```

OUTPUT:



3) OUTPUT: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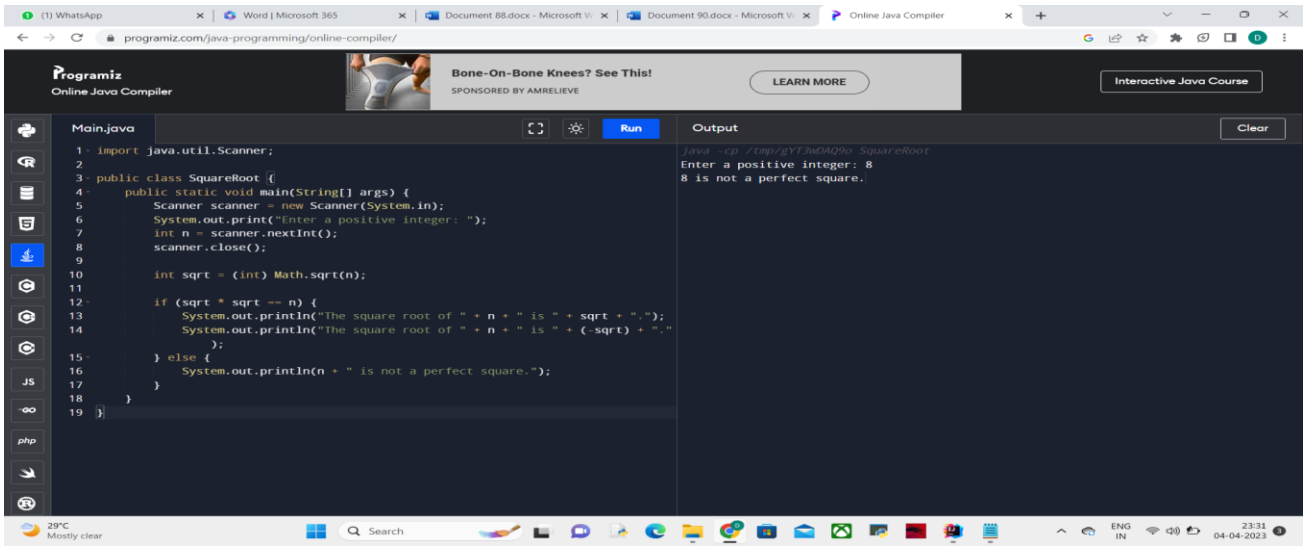
Main.java
Run
Output
Clear
import java.util.Scanner;
public class SquareRoot {
public static void main(String[] args) {
Scanner scanner = new Scanner(System.in);
System.out.print("Enter a positive integer: ");
int n = scanner.nextInt();
scanner.close();
int sqrt = (int) Math.sqrt(n);
if (sqrt * sqrt == n) {
System.out.println("The square root of " + n + " is " + sqrt + ".");
System.out.println("The square root of " + n + " is " + (-sqrt) + ".");
} else {
System.out.println(n + " is not a perfect square.");
}
}
}
Enter a positive integer: 4
The square root of 4 is 2.
The square root of 4 is -2.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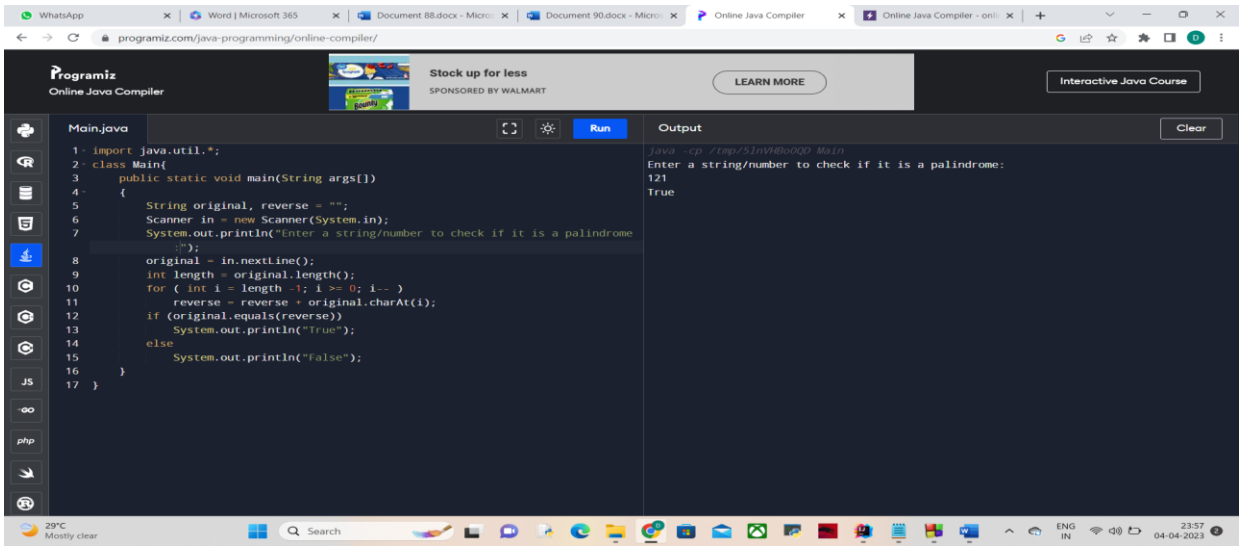
Main.java
Run
Output
Clear
import java.util.Scanner;
public class SquareRoot {
public static void main(String[] args) {
Scanner scanner = new Scanner(System.in);
System.out.print("Enter a positive integer: ");
int n = scanner.nextInt();
scanner.close();
int sqrt = (int) Math.sqrt(n);
if (sqrt * sqrt == n) {
System.out.println("The square root of " + n + " is " + sqrt + ".");
System.out.println("The square root of " + n + " is " + (-sqrt) + ".");
} else {
System.out.println(n + " is not a perfect square.");
}
}
}
Enter a positive integer: 8
8 is not a perfect square.

4)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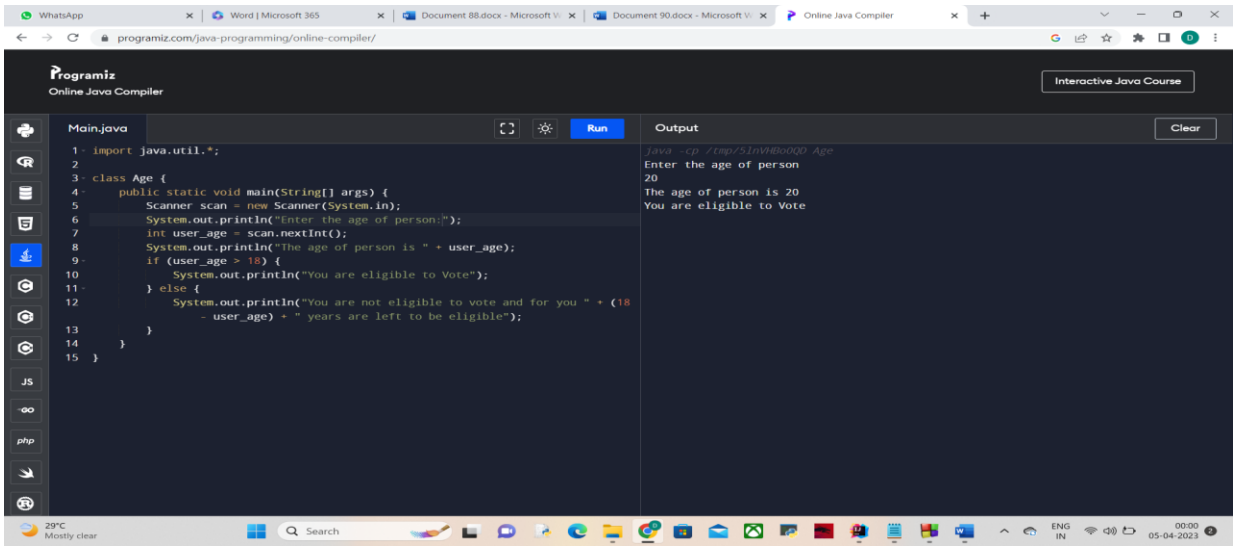
Main.java
Run
Output
Clear
1 import java.util.*;
2 class Main{
3 public static void main(String args[])
4 {
5 String original, reverse = "";
6 Scanner in = new Scanner(System.in);
7 System.out.println("Enter a string/number to check if it is a palindrome
:");
8 original = in.nextLine();
9 int length = original.length();
10 for (int i = length -1; i >= 0; i--)
11 reverse = reverse + original.charAt(i);
12 if (original.equals(reverse))
13 System.out.println("True");
14 else
15 System.out.println("False");
16 }
17 }
java -cp /tmp/5lnVWBoOQD Main
Enter a string/number to check if it is a palindrome:
121
True

5)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Main.java
Run
Output
Clear
1 import java.util.*;
2
3 class Age {
4 public static void main(String[] args) {
5 Scanner scan = new Scanner(System.in);
6 System.out.println("Enter the age of person:");
7 int user_age = scan.nextInt();
8 System.out.println("The age of person is " + user_age);
9 if (user_age > 18) {
10 System.out.println("You are eligible to Vote");
11 } else {
12 System.out.println("You are not eligible to vote and for you " + (18
- user_age) + " years are left to be eligible");
13 }
14 }
15 }
java -cp /tmp/5lnVWBoOQD Age
Enter the age of person
20
The age of person is 20
You are eligible to Vote