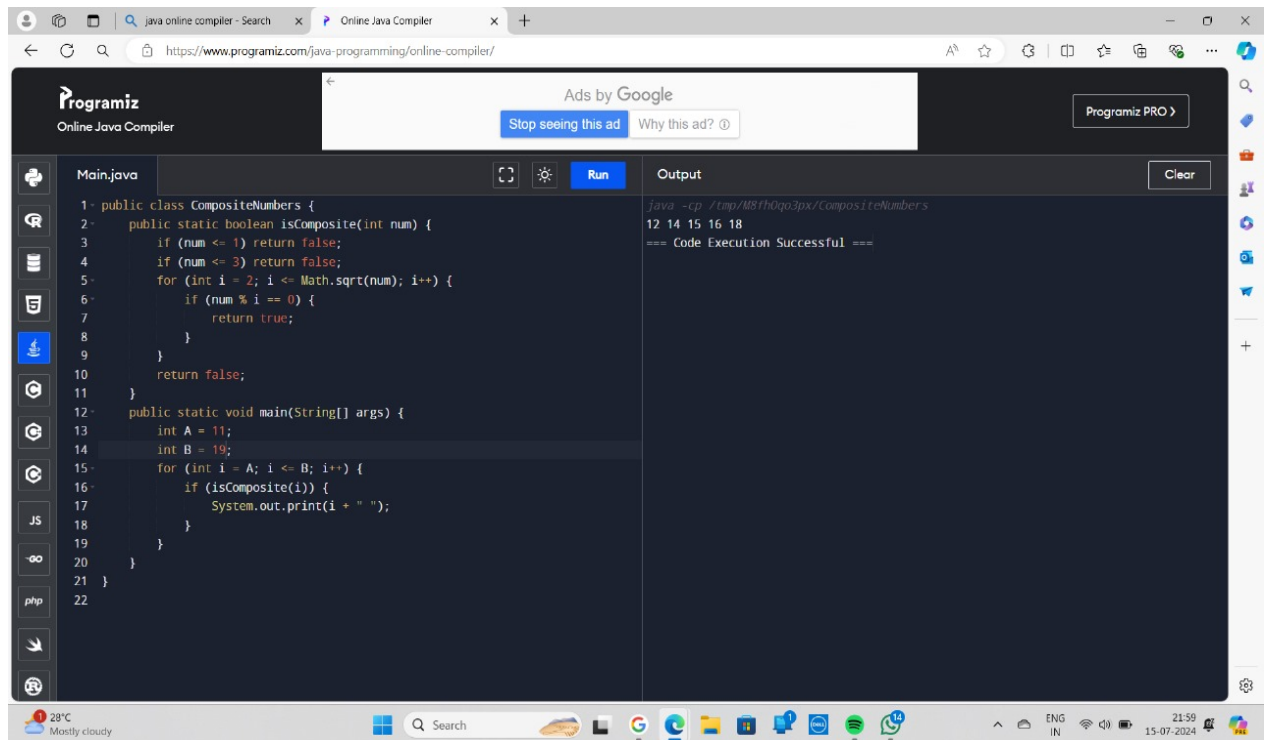


ASSIGNMENT-1

1. Write a program to print all the composite numbers between a and b?



The screenshot shows a web browser window with the URL <https://www.programiz.com/java-programming/online-compiler/>. The page features a dark-themed code editor with a file named 'Main.java'. The code defines a class 'CompositeNumbers' with a static method 'isComposite' that checks if a number is composite by testing divisibility from 2 to its square root. The 'main' method sets 'A' to 11 and 'B' to 19, then iterates through the range, printing numbers that are composite. The 'Output' pane on the right shows the execution result: '12 14 15 16 18', indicating that these are the composite numbers found between 11 and 19. The status bar at the bottom indicates the system is at 28°C and mostly cloudy on 15-07-2024.

```
1 public class CompositeNumbers {
2     public static boolean isComposite(int num) {
3         if (num <= 1) return false;
4         if (num <= 3) return false;
5         for (int i = 2; i <= Math.sqrt(num); i++) {
6             if (num % i == 0) {
7                 return true;
8             }
9         }
10        return false;
11    }
12    public static void main(String[] args) {
13        int A = 11;
14        int B = 19;
15        for (int i = A; i <= B; i++) {
16            if (isComposite(i)) {
17                System.out.print(i + " ");
18            }
19        }
20    }
21 }
22
```

Output

```
java -cp /tmp/MB1H0qo3px/CompositeNumbers
12 14 15 16 18
=== Code Execution Successful ===
```

2. Write a program to print the numbers from M to N by skipping K numbers in between?

```
1- public class SkipNumbers {
2-     public static void main(String[] args) {
3-         int M = 50;
4-         int N = 100;
5-         int K = 7;
6-         for (int i = M; i <= N; i += (K + 1)) {
7-             System.out.print(i + " ");
8-         }
9-     }
10- }
11-
```

Output

```
java -cp /tmp/q500dJH2o/SkipNumbers
50 58 66 74 82 90 98
=== Code Execution Successful ===
```

3. Write a program to enter the marks of a student in four subjects. Then calculate the total and aggregate, display the grade obtained by the student. If the student scores an aggregate greater than 75%, then the grade is Distinction. If aggregate is $60 \geq$ and < 75 , then the grade is First Division. If aggregate is $50 \geq$ and < 60 , then the grade is Second Division. If aggregate is $40 \geq$ and < 50 , then the grade is Third Division. Else the grade is Fail

The screenshot shows a web browser window with the URL <https://www.programiz.com/java-programming/online-compiler/>. The page title is "Programiz Online Java Compiler". The code editor on the left contains the following Java code:

```
1- import java.util.Scanner;
2- public class StudentGrades {
3-     public static void main(String[] args) {
4-         Scanner scanner = new Scanner(System.in);
5-         System.out.print("Enter the marks in Python: ");
6-         int pythonMarks = scanner.nextInt();
7-         System.out.print("Enter the marks in C Programming: ");
8-         int cProgrammingMarks = scanner.nextInt();
9-         System.out.print("Enter the marks in Mathematics: ");
10-        int mathematicsMarks = scanner.nextInt();
11-        System.out.print("Enter the marks in Physics: ");
12-        int physicsMarks = scanner.nextInt();
13-        int total = pythonMarks + cProgrammingMarks + mathematicsMarks +
            physicsMarks;
14-        double aggregate = total / 4.0;
15-        System.out.println("Total = " + total);
16-        System.out.println("Aggregate = " + aggregate);
17-        if (aggregate > 75) {
18-            System.out.println("DISTINCTION");
19-        } else if (aggregate >= 60 && aggregate < 75) {
20-            System.out.println("FIRST DIVISION");
21-        } else if (aggregate >= 50 && aggregate < 60) {
22-            System.out.println("SECOND DIVISION");
23-        } else if (aggregate >= 40 && aggregate < 50) {
24-            System.out.println("THIRD DIVISION");
25-        } else {
26-            System.out.println("FOURTH DIVISION");
27-        }
28-    }
29- }
```

The "Output" window on the right shows the following text:

```
java -cp /tmp/DXpR5rKLfn/StudentGrades
Enter the marks in Python: 99
Enter the marks in C Programming: 100
Enter the marks in Mathematics: 98
Enter the marks in Physics: 99
Total = 396
Aggregate = 99.0
DISTINCTION

=== Code Execution Successful ===
```

The browser's taskbar at the bottom shows the date and time as 15-07-2024, 22:03, and the system language as ENG IN.

4. Write a program to calculate tax given the following conditions:

a.If income is less than or equal to 1,50,000 then no tax

b.If taxable income is 1,50,001 – 3,00,000 the charge 10% tax

c.If taxable income is 3,00,001 – 5,00,000 the charge 20% tax

d.If taxable income is above 5,00,001 then charge 30% tax

Programiz Online Java Compiler

28°C Mostly cloudy

Search

ENG IN

22:05 15-07-2024

```
1- public class TaxCalculator {
2-     public static void main(String[] args) {
3-         double income = 200000;
4-         double tax = 0;
5-         if (income <= 150000) {
6-             tax = 0;
7-         } else if (income <= 300000) {
8-             tax = (income - 150000) * 0.10;
9-         } else if (income <= 500000) {
10-            tax = (150000 * 0.10) + ((income - 300000) * 0.20);
11-        } else {
12-            tax = (150000 * 0.10) + (200000 * 0.20) + ((income - 500000) * 0.30);
13-        }
14-        System.out.println("Tax = " + tax);
15-    }
16- }
17-
```

Output

```
java -cp ./tmp/S0d9xKLtw9/TaxCalculator
Tax = 50000.0
=== Code Execution Successful ===
```