

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

Sample Input:

A = 12

B = 19

Sample Output

14, 15, 16, 18

Test cases:

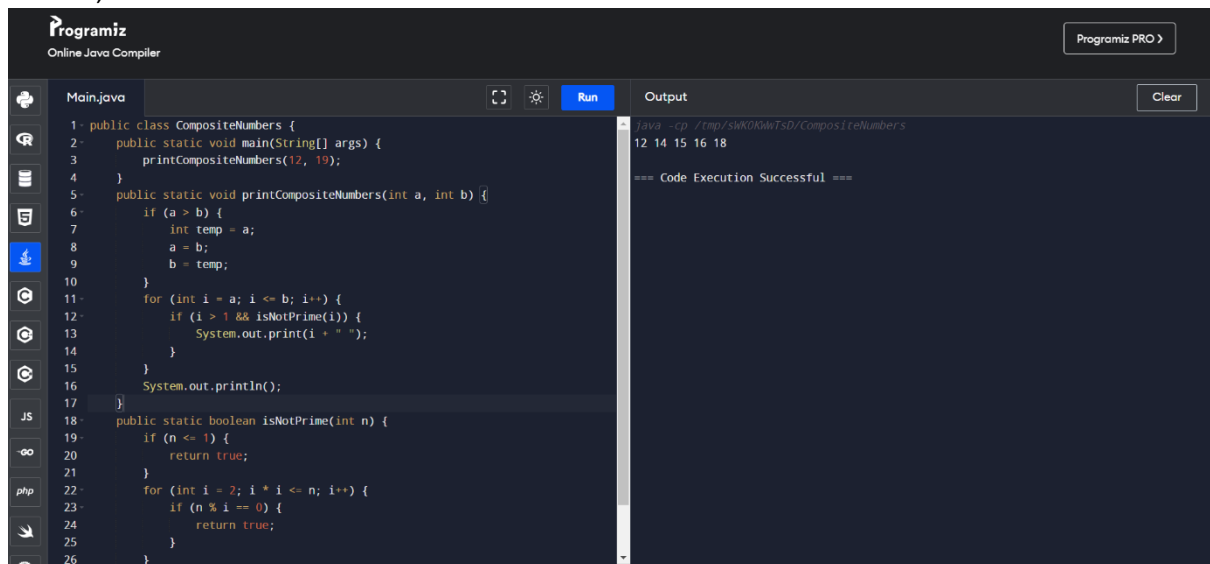
1. A = 11, B = 11

2. A = 20, B = 10

3. A = 0, B = 0

4. A = -5, B = 5

5. A = 7, B = -12



```
1 public class CompositeNumbers {
2     public static void main(String[] args) {
3         printCompositeNumbers(12, 19);
4     }
5     public static void printCompositeNumbers(int a, int b) {
6         if (a > b) {
7             int temp = a;
8             a = b;
9             b = temp;
10        }
11        for (int i = a; i <= b; i++) {
12            if (i > 1 && isNotPrime(i)) {
13                System.out.print(i + " ");
14            }
15        }
16        System.out.println();
17    }
18    public static boolean isNotPrime(int n) {
19        if (n <= 1) {
20            return true;
21        }
22        for (int i = 2; i * i <= n; i++) {
23            if (n % i == 0) {
24                return true;
25            }
26        }
27    }
28 }
```

Output

```
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?

Sample Input:

M = 50

N = 100

K = 7

Sample Output:

50, 58, 66, 74,

Test cases:

1. M = 15, N = 05, K = 02
2. M = 25, N = 50, K = 04
3. M = 15, N = 100, K = -02
4. M = 0, N = 0, K = 2
5. M = 200, N = 200, K = 50

```

Main.java
1 public class SkipNumbers {
2     public static void main(String[] args) {
3         printSkippedNumbers(50, 100, 7);
4     }
5
6     public static void printSkippedNumbers(int m, int n, int k) {
7         if (k == 0) {
8             System.out.println("K cannot be zero");
9             return;
10        }
11
12        if (m > n) {
13            int temp = m;
14            m = n;
15            n = temp;
16        }
17
18        if (k < 0) {
19            k = -k;
20        }
21
22        for (int i = m; i <= n; i += k) {
23            System.out.print(i + " ");
24        }
25        System.out.println();
26    }
}

Output
java -cp /tmp/mwQMiG0grr/SkipNumbers
50 57 64 71 78 85 92 99

=== 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.

Sample Input & Output:

Enter the marks in python: 90

Enter the marks in c programming: 91

Enter the marks in Mathematics: 92

Enter the marks in Physics: 93

Total= 366

Aggregate = 91.5

DISTINCTION

Test cases:

- a) 18, 76, 93, 65
- b) 73, 78, 79, 75
- c) 98, 106, 120, 95
- d) 96, 73, -85, 95

e) 78,59.8,76,79

The screenshot shows the Programiz Online Java Compiler interface. The code editor on the left contains a Java program named `GradeCalculator`. The program prompts the user to enter marks for Python, C Programming, Mathematics, and Physics. It calculates the total marks, the aggregate (total divided by 4), and prints the result. If the aggregate is greater than 75, it prints "DISTINCTION". The output window on the right shows the execution results for the input values 89, 97, 67, and 90, resulting in a total of 343, an aggregate of 85.8, and the output "DISTINCTION".

```
1 import java.util.Scanner;
2 public class GradeCalculator {
3     public static void main(String[] args) {
4         Scanner scanner = new Scanner(System.in);
5
6         System.out.print("Enter the marks in Python: ");
7         double python = scanner.nextDouble();
8
9         System.out.print("Enter the marks in C Programming: ");
10        double cProgramming = scanner.nextDouble();
11
12        System.out.print("Enter the marks in Mathematics: ");
13        double mathematics = scanner.nextDouble();
14
15        System.out.print("Enter the marks in Physics: ");
16        double physics = scanner.nextDouble();
17
18        double total = python + cProgramming + mathematics + physics;
19        double aggregate = total / 4;
20
21        System.out.printf("Total = %.0f\n", total);
22        System.out.printf("Aggregate = %.1f\n", aggregate);
23
24        if (aggregate > 75) {
25            System.out.println("DISTINCTION");
26        } else if (aggregate >= 60 && aggregate < 75) {
```

Output:

```
java -cp /tmp/g7aCpKEldi/GradeCalculator
Enter the marks in Python: 89
Enter the marks in C Programming: 97
Enter the marks in Mathematics: 67
Enter the marks in Physics: 90
Total = 343
Aggregate = 85.8
DISTINCTION

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

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

- If income is less than or equal to 1,50,000 then no tax
- If taxable income is 1,50,001 – 3,00,000 the charge 10% tax
- If taxable income is 3,00,001 – 5,00,000 the charge 20% tax
- If taxable income is above 5,00,001 then charge 30% tax

Sample Input:

Enter the income:200000

Sample Output:

Tax= 20000

Test cases:

- 400700
- 2789239
- 150000
- 00000
- 125486

Main.java	Run	Output
<pre>1 import java.util.Scanner; 2 3 public class TaxCalculator { 4 public static void main(String[] args) { 5 Scanner scanner = new Scanner(System.in); 6 7 System.out.print("Enter the income: "); 8 double income = scanner.nextDouble(); 9 10 double tax = 0; 11 12 if (income <= 150000) { 13 tax = 0; 14 } else if (income > 150000 && income <= 300000) { 15 tax = (income - 150000) * 0.10; 16 } else if (income > 300000 && income <= 500000) { 17 tax = (income - 300000) * 0.20 + 15000; 18 } else if (income > 500000) { 19 tax = (income - 500000) * 0.30 + 55000; 20 } 21 22 System.out.printf("Tax = %.0f\n", tax); 23 } 24 }</pre>	<div>Run</div>	<pre>java -cp ./tmp/Tf4HzivCny/TaxCalculator Enter the income: 4500000 Tax = 1255000 === Code Execution Successful ===</pre>