

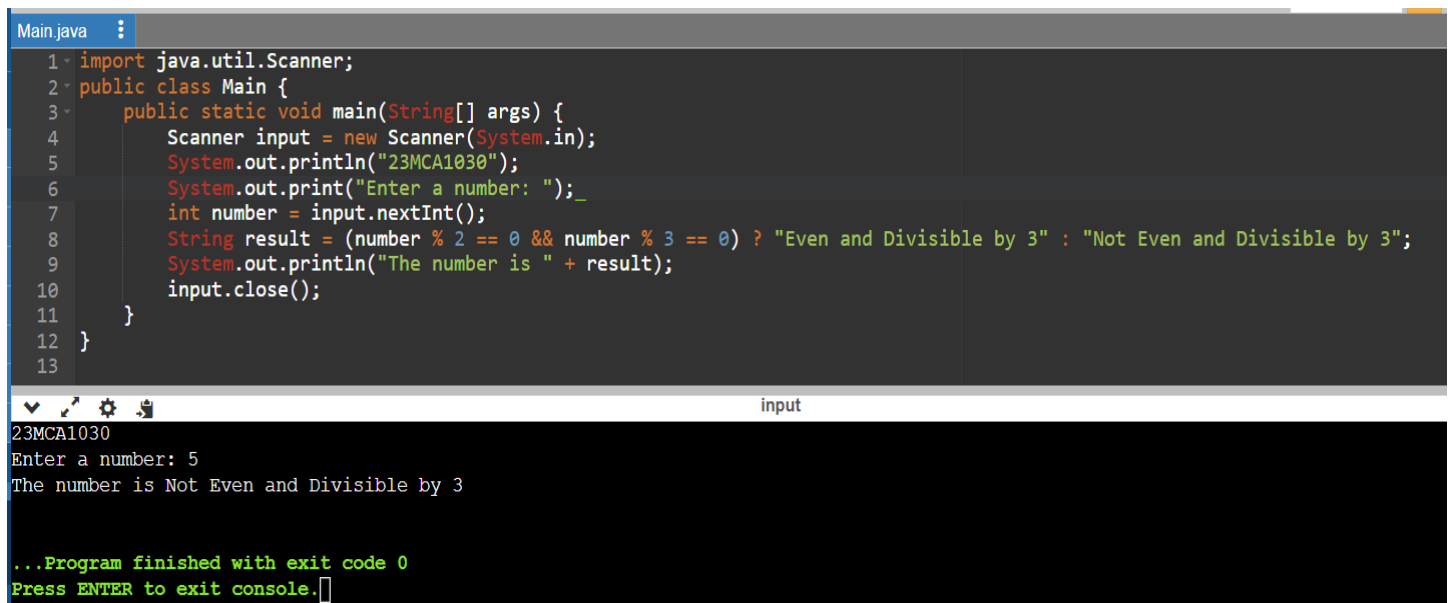
Java Programming Lab(PMCA502P)

Exercise 3.C Logical AND

1. Write a Java program that takes a number as input and checks whether it is both an even number and divisible by 3. If both conditions are true, print "Even and Divisible by 3"; otherwise, print "Not Even and Divisible by 3."

Code:

```
import java.util.Scanner;
public class Main {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.println("23MCA1030");
        System.out.print("Enter a number: ");
        int number = input.nextInt();
        String result = (number % 2 == 0 && number % 3 == 0) ? "Even and Divisible by 3" : "Not Even and Divisible by 3";
        System.out.println("The number is " + result);
        input.close();
    }
}
```



The screenshot shows a Java IDE with a file named 'Main.java'. The code is identical to the one provided in the previous block. Below the code editor, the console output is visible. It shows the program running, printing '23MCA1030', and then prompting for a number. The user has entered '5', and the program has printed 'The number is Not Even and Divisible by 3'. The console also shows the program finished with exit code 0 and a prompt to press ENTER to exit the console.

```
Main.java :
1 import java.util.Scanner;
2 public class Main {
3     public static void main(String[] args) {
4         Scanner input = new Scanner(System.in);
5         System.out.println("23MCA1030");
6         System.out.print("Enter a number: ");
7         int number = input.nextInt();
8         String result = (number % 2 == 0 && number % 3 == 0) ? "Even and Divisible by 3" : "Not Even and Divisible by 3";
9         System.out.println("The number is " + result);
10        input.close();
11    }
12 }
13

input
23MCA1030
Enter a number: 5
The number is Not Even and Divisible by 3

...Program finished with exit code 0
Press ENTER to exit console.
```

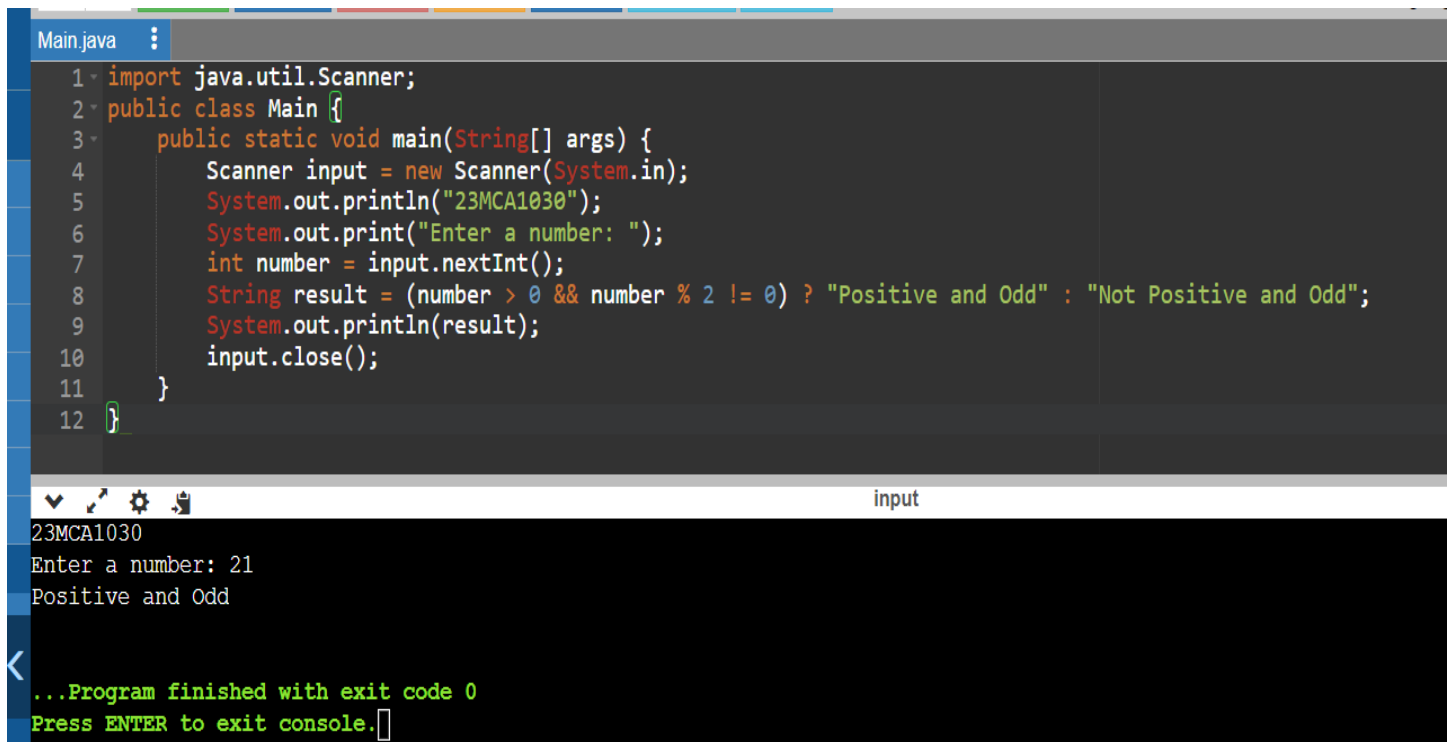
2. Write a Java program that takes a number as input and checks whether it is both an even number and divisible by 3. If both conditions are true, print "Even and Divisible by 3"; otherwise, print "Not Even and Divisible by 3."

Code:

```
import java.util.Scanner;

public class Main {

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.println("23MCA1030");
        System.out.print("Enter a number: ");
        int number = input.nextInt();
        String result = (number > 0 && number % 2 != 0) ? "Positive and Odd" : "Not
Positive and Odd";
        System.out.println(result);
        input.close();
    }
}
```



The screenshot shows an IDE window titled 'Main.java' containing the same Java code as the previous block. Below the code editor, the console output is visible. It shows the program printing '23MCA1030', then 'Enter a number: 21'. The user has entered '21', and the program outputs 'Positive and Odd'. At the bottom, a message states '...Program finished with exit code 0' and 'Press ENTER to exit console.'

```
Main.java
1 import java.util.Scanner;
2 public class Main {
3     public static void main(String[] args) {
4         Scanner input = new Scanner(System.in);
5         System.out.println("23MCA1030");
6         System.out.print("Enter a number: ");
7         int number = input.nextInt();
8         String result = (number > 0 && number % 2 != 0) ? "Positive and Odd" : "Not Positive and Odd";
9         System.out.println(result);
10        input.close();
11    }
12 }
```

input

23MCA1030
Enter a number: 21
Positive and Odd

< ...Program finished with exit code 0
Press ENTER to exit console.

Logical OR

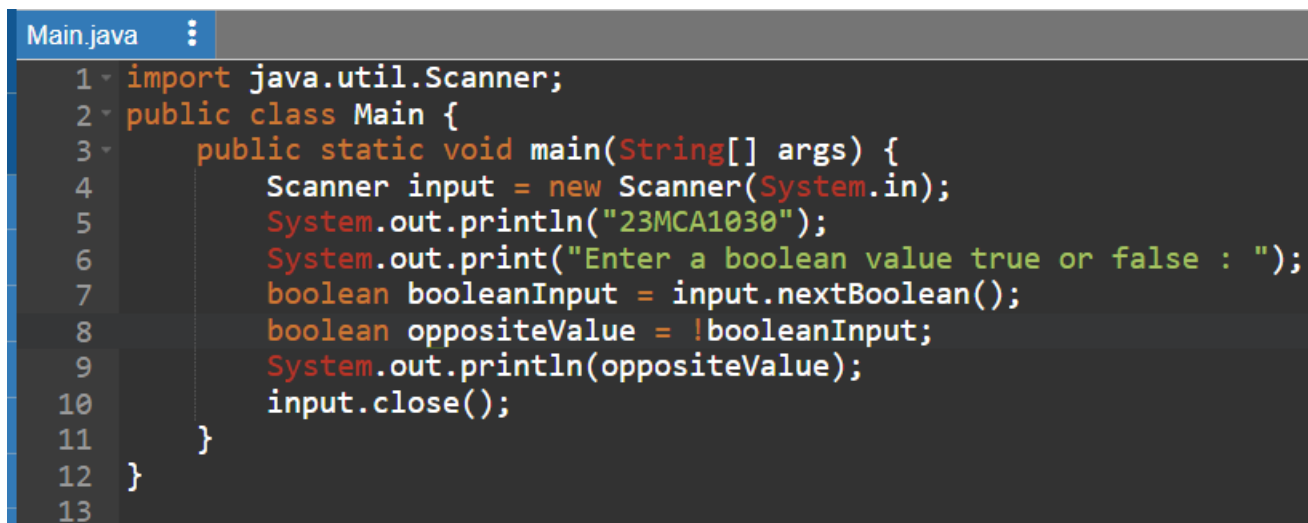
3. Write a Java program that takes a boolean variable as input and prints the opposite value. If the input is true, print false; if the input is false, print true.

Code:

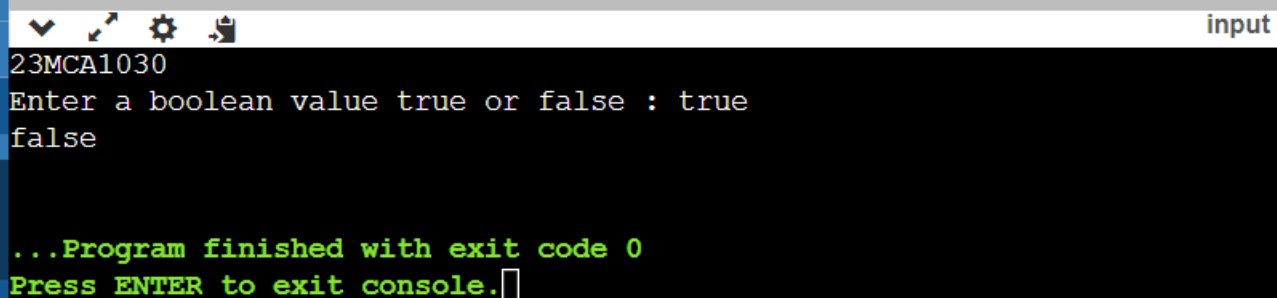
```
import java.util.Scanner;

public class Main {

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.println("23MCA1030");
        System.out.print("Enter a boolean value true or false : ");
        boolean booleanInput = input.nextBoolean();
        boolean oppositeValue = !booleanInput;
        System.out.println(oppositeValue);
        input.close();
    }
}
```



```
Main.java
1 import java.util.Scanner;
2 public class Main {
3     public static void main(String[] args) {
4         Scanner input = new Scanner(System.in);
5         System.out.println("23MCA1030");
6         System.out.print("Enter a boolean value true or false : ");
7         boolean booleanInput = input.nextBoolean();
8         boolean oppositeValue = !booleanInput;
9         System.out.println(oppositeValue);
10        input.close();
11    }
12 }
13
```



```
input
23MCA1030
Enter a boolean value true or false : true
false

...Program finished with exit code 0
Press ENTER to exit console.
```

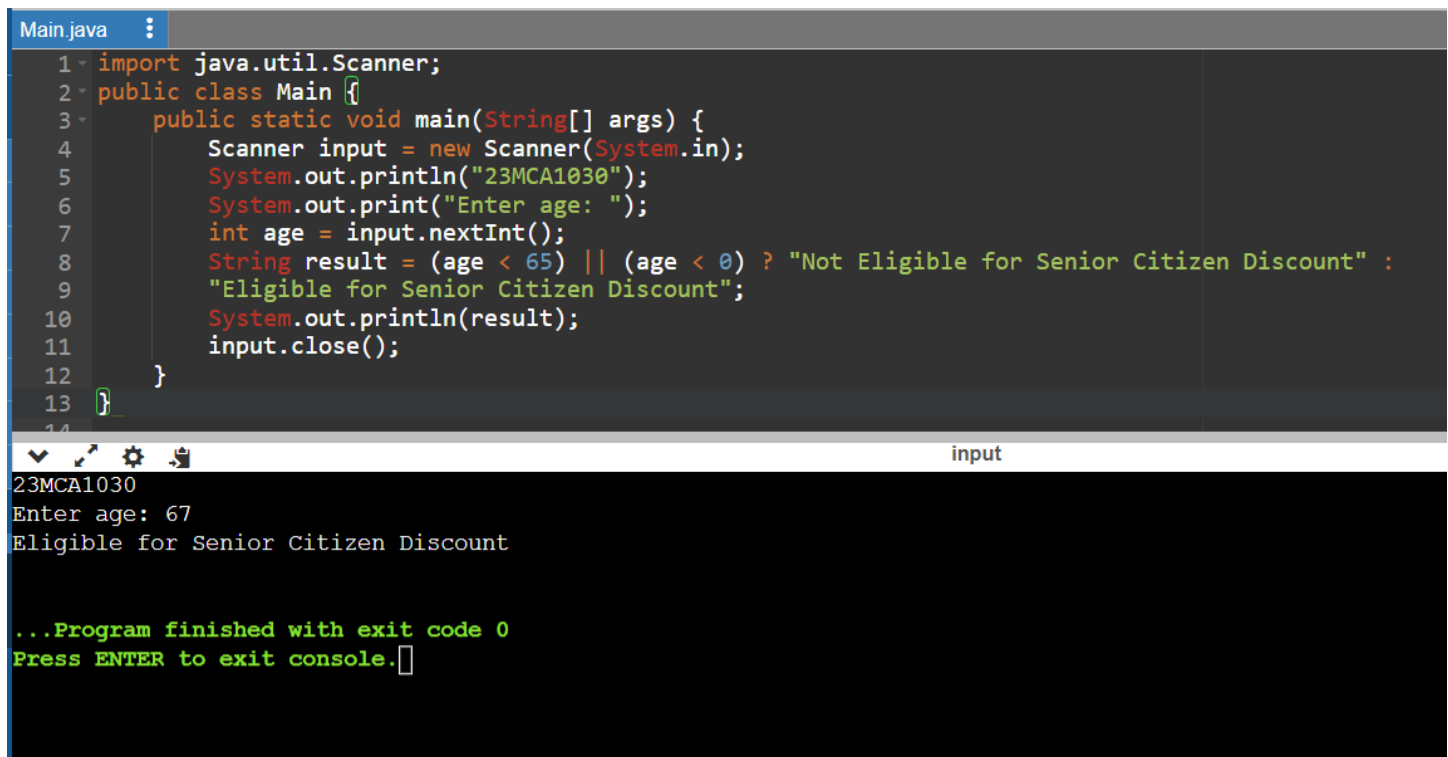
4. Implement a program that takes a person's age as input and checks if they are not eligible for a senior citizen discount (age less than 65). If the condition is true, print "Not Eligible for Senior Citizen Discount"; otherwise, print "Eligible for Senior Citizen Discount."

Code:

```
import java.util.Scanner;

public class Main {

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.println("23MCA1030");
        System.out.print("Enter age: ");
        int age = input.nextInt();
        String result = (age < 65) || (age < 0) ? "Not Eligible for Senior Citizen Discount" :
"Eligible for Senior Citizen Discount";
        System.out.println(result);
        input.close();
    }
}
```



The screenshot shows an IDE window titled 'Main.java' containing the same Java code as the previous block. Below the code editor, the console output is visible. It shows the program printing '23MCA1030', prompting for 'Enter age: ', and receiving the input '67'. The program then prints 'Eligible for Senior Citizen Discount'. At the bottom, it states '...Program finished with exit code 0' and 'Press ENTER to exit console.'

```
1 import java.util.Scanner;
2 public class Main {
3     public static void main(String[] args) {
4         Scanner input = new Scanner(System.in);
5         System.out.println("23MCA1030");
6         System.out.print("Enter age: ");
7         int age = input.nextInt();
8         String result = (age < 65) || (age < 0) ? "Not Eligible for Senior Citizen Discount" :
9 "Eligible for Senior Citizen Discount";
10        System.out.println(result);
11        input.close();
12    }
13 }
14
```

input

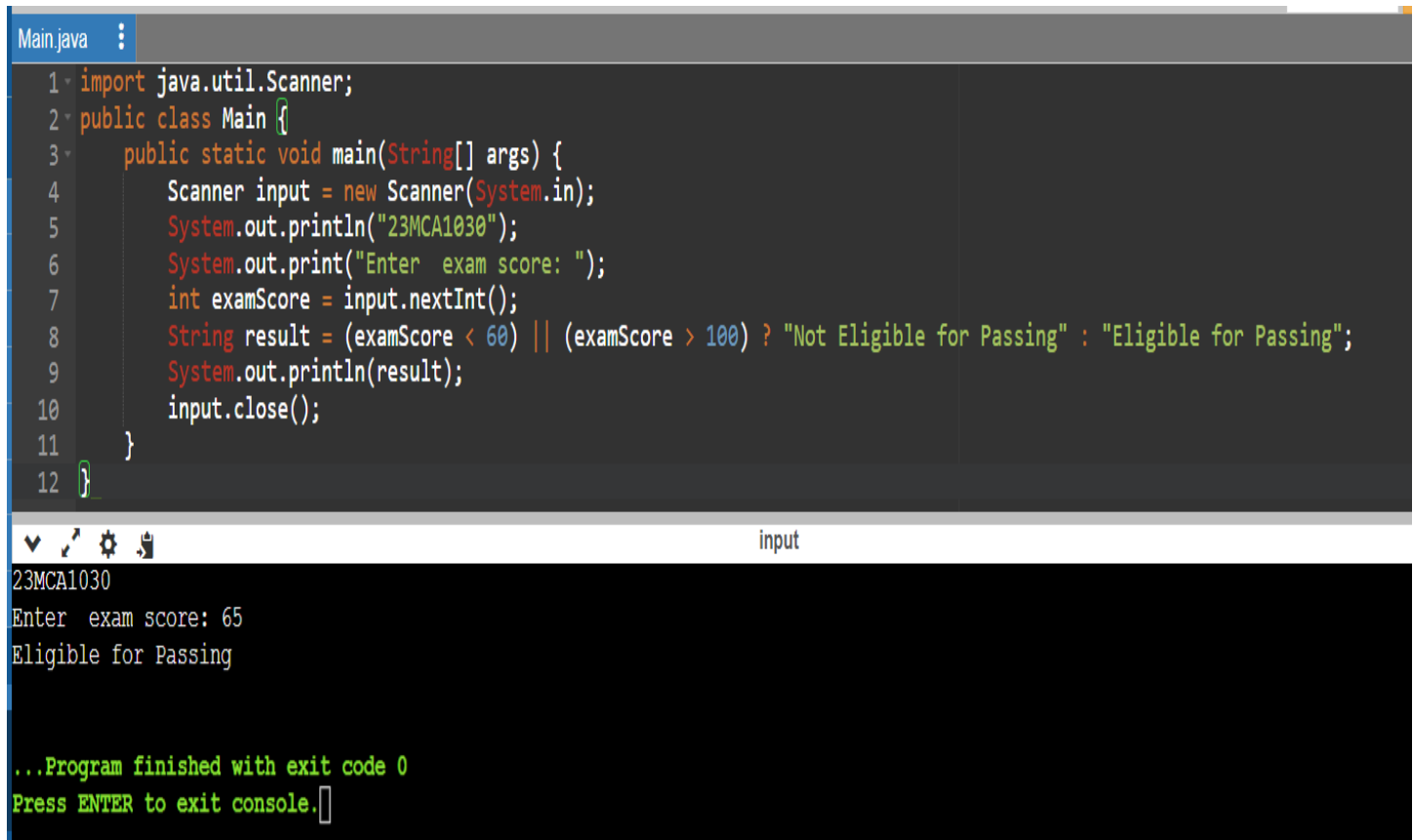
23MCA1030
Enter age: 67
Eligible for Senior Citizen Discount

...Program finished with exit code 0
Press ENTER to exit console.

5. Implement a Java program that takes a student's exam score as input and checks if they are not eligible for passing the exam (score less than 60). If the condition is true, print "Not Eligible for Passing"; otherwise, print "Eligible for Passing."

Code:

```
import java.util.Scanner;
public class Main {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.println("23MCA1030");
        System.out.print("Enter exam score: ");
        int examScore = input.nextInt();
        String result = (examScore < 60) || (examScore > 100) ? "Not Eligible for
Passing" : "Eligible for Passing";
        System.out.println(result);
        input.close();
    }
}
```



The screenshot shows an IDE window titled 'Main.java' containing the Java code from the previous block. Below the code editor, the console output is visible. The program prints '23MCA1030' and prompts for an exam score. The user enters '65', and the program outputs 'Eligible for Passing'. The console also shows the program finished with exit code 0 and a prompt to press ENTER to exit the console.

```
1 import java.util.Scanner;
2 public class Main {
3     public static void main(String[] args) {
4         Scanner input = new Scanner(System.in);
5         System.out.println("23MCA1030");
6         System.out.print("Enter exam score: ");
7         int examScore = input.nextInt();
8         String result = (examScore < 60) || (examScore > 100) ? "Not Eligible for Passing" : "Eligible for Passing";
9         System.out.println(result);
10        input.close();
11    }
12 }
```

input

23MCA1030

Enter exam score: 65

Eligible for Passing

...Program finished with exit code 0

Press ENTER to exit console.

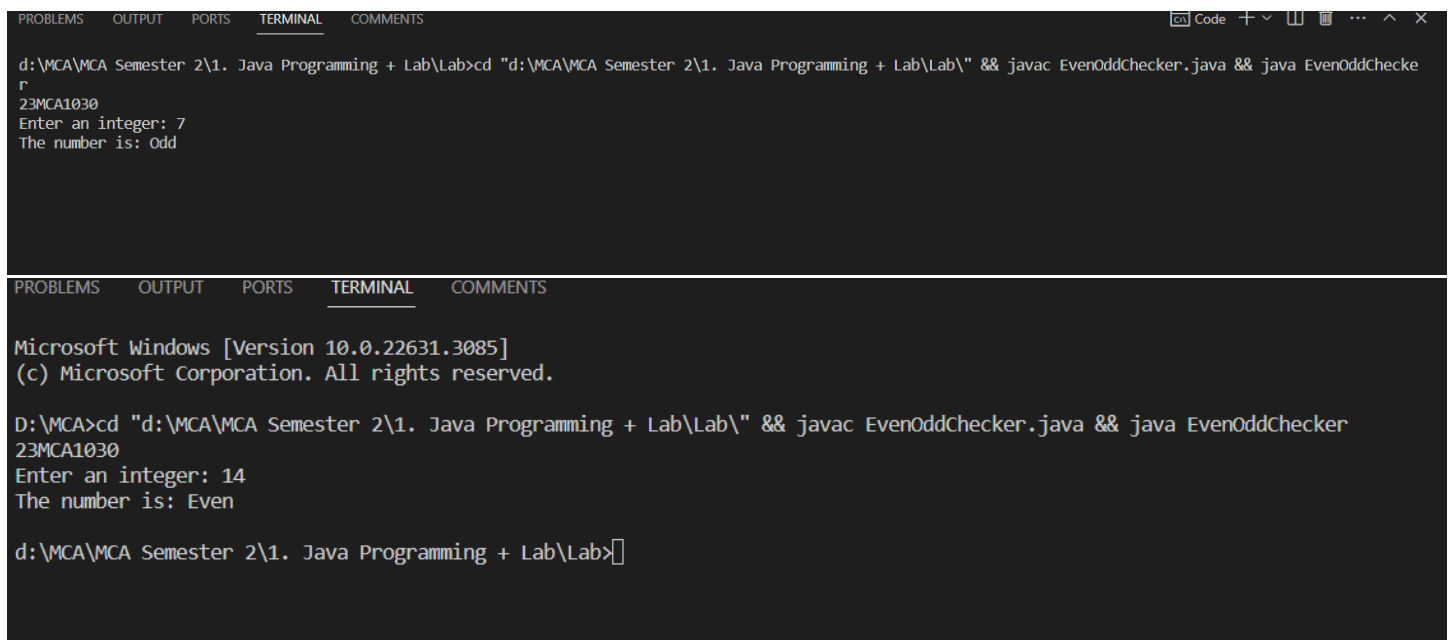
Conditional or Ternary Operator

1. Write a Java program that takes an integer as input and uses the ternary operator to determine if it's even or odd. Print "Even" or "Odd" accordingly.

Code:

```
import java.util.Scanner;

public class EvenOddChecker {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.println("23MCA1030");
        System.out.print("Enter an integer: ");
        int number = scanner.nextInt();
        String result = (number % 2 == 0) ? "Even" : "Odd";
        System.out.println("The number is: " + result);
        scanner.close();
    }
}
```



```
PROBLEMS OUTPUT PORTS TERMINAL COMMENTS
d:\MCA\MCA Semester 2\1. Java Programming + Lab\Lab>cd "d:\MCA\MCA Semester 2\1. Java Programming + Lab\Lab\" && javac EvenOddChecker.java && java EvenOddChecker
23MCA1030
Enter an integer: 7
The number is: Odd

PROBLEMS OUTPUT PORTS TERMINAL COMMENTS
Microsoft Windows [Version 10.0.22631.3085]
(c) Microsoft Corporation. All rights reserved.

D:\MCA>cd "d:\MCA\MCA Semester 2\1. Java Programming + Lab\Lab\" && javac EvenOddChecker.java && java EvenOddChecker
23MCA1030
Enter an integer: 14
The number is: Even

d:\MCA\MCA Semester 2\1. Java Programming + Lab\Lab>
```

2. Create a program that takes a number as input and uses the ternary operator to determine if it's positive or negative. Print "Positive" or "Negative" accordingly.

Code:

```
import java.util.Scanner;

public class PositiveNegativeChecker {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int number = scanner.nextInt();
        String result = number > 0 ? "Positive" : number < 0 ? "Negative" : "Zero";
        System.out.println(number + " is " + result);
        scanner.close();
    }
}
```

```
d:\MCA\MCA Semester 2\1. Java Programming + Lab\Lab>cd "d:\MCA\MCA Semester 2\1. Java Programming + Lab\Lab\" && javac PositiveNegativeChecker.java && java PositiveNegativeChecker
Enter a number: 8
8 is Positive
d:\MCA\MCA Semester 2\1. Java Programming + Lab\Lab>
```

```
Microsoft Windows [Version 10.0.22631.3085]
(c) Microsoft Corporation. All rights reserved.

D:\MCA>cd "d:\MCA\MCA Semester 2\1. Java Programming + Lab\Lab\" && javac PositiveNegativeChecker.java && java PositiveNegativeChecker
Enter a number: -3
-3 is Negative
d:\MCA\MCA Semester 2\1. Java Programming + Lab\Lab>
```