RegNo: 23MCA1030 **Name**: Vinayak Kumar Singh

Java Programming Lab (PMCA502P)

1. Write a Java program that takes an integer as input and performs the following operations:
   Left shift the number by 3 positions.
   Signed right shift the number by 2 positions.
   Unsigned right shift the number by 2 positions.

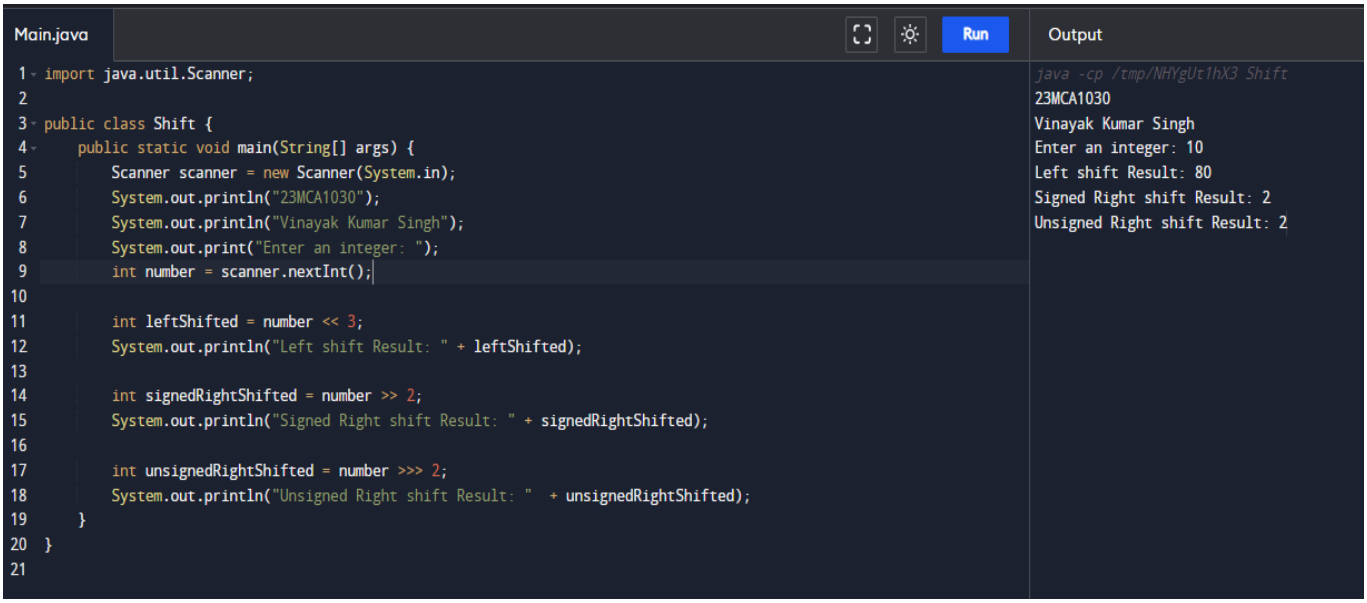
Print the results after each operation.

Code:

```
import java.util.Scanner;

public class Shift {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.println("23MCA1030");

        System.out.println("Vinayak Kumar Singh");

        System.out.print("Enter an integer: ");

        int number = scanner.nextInt();

        int leftShifted = number << 3;

        System.out.println("Left shift Result: " + leftShifted);

        int signedRightShifted = number >> 2;

        System.out.println("Signed Right shift Result: " + signedRightShifted);

        int unsignedRightShifted = number >>> 2;

        System.out.println("Unsigned Right shift Result: "  +
unsignedRightShifted);
```

```
    }
}
```

Output:



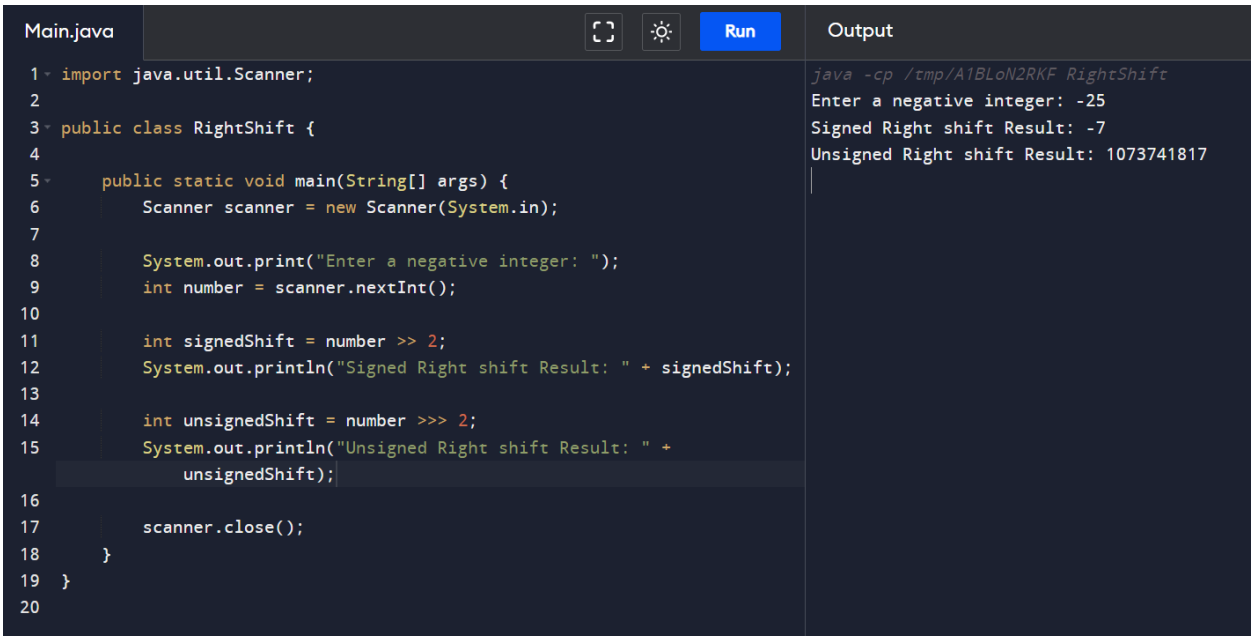
3. Create a Java program that demonstrates the behavior of the right shift operators with negative numbers. Allow the user to input a negative integer, and then perform a signed right shift and an unsigned right shift by 2 positions. Print the results.

Code:

```
import java.util.Scanner;

public class RightShift {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter a negative integer: ");

        int number = scanner.nextInt();
```

```
        int signedShift = number >> 2;
        System.out.println("Signed Right shift Result: " + signedShift);
        int unsignedShift = number >>> 2;
        System.out.println("Unsigned Right shift Result: " + unsignedShift);
        scanner.close();
    }
}
```

Output:



4. Write a Java program to double number using the left shift operator. Allow the user to input a number, and then use left shift to double the number.

Code:

```
import java.util.Scanner;

public class DoubleNumber {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter a number: ");

        int input = scanner.nextInt();

        int doubledNumber = input << 1;

        System.out.println("Doubled number using left shift: " +
doubledNumber);

        scanner.close();

    }

}
```

Output: