## ❖ Calculator Implementation Program

**Program1: Using Switch-Case**

```
import java.io.*;
import java.lang.*;
import java.lang.Math;
import java.util.Scanner;

public class BasicCalculator
{
      public static void main(String[] args)
      {
          double num1, num2;
          Scanner sc = new Scanner(System.in);
          System.out.println("Enter First numbers:");

          num1 = sc.nextDouble();
          num2 = sc.nextDouble();

          System.out.println("Enter the operator (+,-,*,/):");
          char op = sc.next().charAt(0);
          double result = 0;

          switch (op)
          {
              case '+':
              result = num1 + num2;
              break;

             case '-':
             result = num1 - num2;
             break;

            case '*':
            result = num1 * num2;
            break;

           case '/':
           result = num1 / num2;
           break;

          default:
         System.out.println("You enter wrong input");
        }

      System.out.println("The final result:");
```

```
      System.out.println();
      System.out.println(num1 + " " + op + " " + num2+ " = " + result);
    }
}
```

**Program2: Using Switch-Case**

```
import java.util.Scanner;

class Main
{
  public static void main(String[] args)
  {

    char operator;
    Double number1, number2, result;

    // create an object of Scanner class
    Scanner input = new Scanner(System.in);

    // ask users to enter operator
    System.out.println("Choose an operator: +, -, *, or /");
    operator = input.next().charAt(0);

    // ask users to enter numbers
    System.out.println("Enter first number");
    number1 = input.nextDouble();

    System.out.println("Enter second number");
    number2 = input.nextDouble();

    switch (operator) {

      // performs addition between numbers
      case '+':
        result = number1 + number2;
        System.out.println(number1 + " + " + number2 + " = " + result);
        break;

      // performs subtraction between numbers
      case '-':
        result = number1 - number2;
        System.out.println(number1 + " - " + number2 + " = " + result);
        break;

      // performs multiplication between numbers
```

```
      case '*':
        result = number1 * number2;
        System.out.println(number1 + " * " + number2 + " = " + result);
        break;

      // performs division between numbers
      case '/':
        result = number1 / number2;
        System.out.println(number1 + " / " + number2 + " = " + result);
        break;

      default:
        System.out.println("Invalid operator!");
        break;
    }

    input.close();
  }
}
```

**Program3 Using Nested If-Else:**

```
import java.util.Scanner;
public class SimpleCalculator {
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter the first number: ");
        int firstNumber = sc.nextInt();
        System.out.print("Enter the second number: ");
        int secondNumber = sc.nextInt();

        System.out.print("Enter the type of operation you want to perform (+, -, *, /, %): ");
        String operation = sc.next();
        int result = performOperation(firstNumber, secondNumber, operation);
        System.out.println("Your answer is: " + result);
    }

    public static int performOperation(int firstNumber, int secondNumber, String operation)
    {
        int result = 0;
        if (operation.equals("+")) {
            result = firstNumber + secondNumber;
```

```
        }
        else if (operation.equals("-")) {
            result = firstNumber - secondNumber;
        }
        else if (operation.equals("*")) {
            result = firstNumber * secondNumber;
        }
        else if (operation.equals("%")) {
            result = firstNumber % secondNumber;
        }
        else if (operation.equals("/")) {
            result = firstNumber / secondNumber;
        }
        else {
            System.out.println("Invalid operation");
        }
        return result;
    }
}
```