

Calculator Program

Lab 4:

Objective:

In this lab, you will create a **simple calculator** program in Java using the `switch` statement and **functions** (methods). The program will:

- Accept user input: two numbers and an operator
- Perform the selected operation (e.g., addition, subtraction, multiplication, etc.)
- Output the result

This exercise reinforces the use of:

- `switch` statements
 - Modular programming through **functions**
 - Conditional logic and user input
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Lab Requirements

You are expected to:

1. Prompt the user to input **two numeric values** and an **operator** (+, -, *, /, %)
 2. Use a `switch` statement to determine the operation based on the operator input
 3. For **each operation**, call a **function** (method) that:
 - Takes three arguments: `val1`, `opt`, and `val2`
 - Performs the correct calculation
 - Prints the result clearly to the console
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Code Structure Overview

Here's a sample outline to guide your implementation:

```
// Step 1: Import scanner
import java.util.Scanner;

public class CalculatorLab {

    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);

        // Step 2: Take input
        System.out.print("Enter first number: ");
        // assign user value to a variable

        System.out.print("Enter an operator (+, -, *, /, %): ");
        // assign operator to a variable

        System.out.print("Enter second number: ");
        // assign user value to a variable

        // Step 3: Use switch to handle operation
        switch (opt) {
            // all of your cases goes here
            default:
                System.out.println("Invalid operator!");
        }

        in.close(); // close scanner
    }

    // CALCULATION:
    public static void addition(parameter1, parameter2) {
        // do you calculations
    }

    // other functions:
}
```

Instructions:

1. **Setup Scanner** to read input from the user.
 2. Prompt the user to enter:
 - First number
 - An operator (+, -, *, /, %)
 - Second number
 3. Use a **switch statement** in `main()` to evaluate which operator was chosen.
 4. **Call a function** (e.g., `calculate(val1, opt, val2)`) that will:
 - Perform the correct computation
 - Handle errors like **division by zero**
 - Print the result in a clean format
 5. Test your program with different operators and values.
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Final Output Sample

```
Enter first number: 10
Enter an operator (+, -, *, /, %): *
Enter second number: 5
Result: 10.0 * 5.0 = 50.0
```

References:

[functions](#)

Happy coding!