Kukbit SL Pvt. Ltd.

Internship Program

Project 2

Simple Calculator

By

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Position - Java Intern

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Functions of Calculator:

- Simple calculator is written in Java with Eclipse. This calculator is simple with an easy code to help novices learn how to operate a calculator.
- Developed for learning purposes. New java learners can easlily understand how calculator works by this small and simple app.
- A Java Calculator with a GUI application. It performs basic mathematical operations like addition, subtraction, multiplication, and division.
- A Simple Calculator that runs on the console. It accepts two numbers and then chooses the operation to be performed.

First Method: Using If – else Statement

Steps

1. **Import Scanner Class:**

```
import java.util.Scanner;
```

This line imports the Scanner class from the java.util package, which is used to take input from the user.

2. **Create a Class:**

```
public class SimpleCalculator {
```

Defines a class named SimpleCalculator.

3. **Main Method:**

```
public static void main(String[] args) {
```

The program starts executing from the main method.

4. **Create Scanner Object:**

```
Scanner scanner = new Scanner(System.in);
```

Initializes a Scanner object to take input from the user.

5. **Input:**

```
System.out.print("Enter first number: ");
double num1 = scanner.nextDouble();
```

Asks the user to enter the first number and stores it in the variable num1. Similarly, it takes the second number.

6. **Operator Input:**

```
System.out.print("Enter operation (+, -, *, /): ");
char operator = scanner.next().charAt(0);
```

Prompts the user to enter an operator (+, -, *, /) and stores it in the variable operator.

7. **Perform Calculation using if-else:**

```
if (operator == '+') {
result = num1 + num2;
} else if (operator == '-') {
result = num1 - num2;
} else if (operator == '*') {
result = num1 * num2;
} else if (operator == '/') {
if (num2 != 0) {
result = num1 / num2;
} else {
System.out.println("Error: Cannot divide by zero.");
return;
}
} else {
System.out.println("Error: Invalid operator.");
return;
}
```

Uses if-else statements to determine the operation based on the entered operator. It performs addition, subtraction, multiplication, or division. If the operator is division, it checks if the second number is not zero before performing the operation to avoid division by zero.

8. **Display Result:**

```
System.out.println("Result: " + result);
```

Prints the result of the calculation.

9. **Closing the Scanner:**

```
scanner.close();
```

Closes the Scanner to free up system resources.

This program provides a simple calculator where the user can enter two numbers and choose an operation to perform. It handles basic error cases such as division by zero or an invalid operator.

Second Method: Using Switch Statement

1. **Import Scanner Class:**

```
import java.util.Scanner;
```

Importing the Scanner class for user input.

2. **Create a Class:**

```
public class SimpleCalculatorSwitch {
```

Defining a class named SimpleCalculatorSwitch.

3. **Main Method:**

```
public static void main(String[] args) {
```

The program starts executing from the main method.

4. **Create Scanner Object:**

```
Scanner scanner = new Scanner(System.in);
```

Creating a Scanner object to take input from the user.

5. **Input:**

```
System.out.print("Enter first number: ");
double num1 = scanner.nextDouble();

System.out.print("Enter second number: ");
double num2 = scanner.nextDouble();

System.out.print("Enter operation (+, -, *, /): ");
char operator = scanner.next().charAt(0);
```

Taking input from the user for two numbers and the operator.

6. **Perform Calculation using switch:**

```
switch (operator) {
case '+':
result = num1 + num2;
break;
case '-':
result = num1 - num2;
break;
case '*':
```

```
result = num1 * num2;
break;
case '/':
if (num2 != 0) {
result = num1 / num2;
} else {
System.out.println("Error: Cannot divide by zero.");
return;
}
break;
default:
System.out.println("Error: Invalid operator.");
return;
}
```

Using a switch statement to determine the operation based on the entered operator. It performs addition, subtraction, multiplication, or division. If the operator is division, it checks if the second number is not zero before performing the operation to avoid division by zero.

7. **Display Result:**

```
System.out.println("Result: " + result);
```

Printing the result of the calculation.

8. **Closing the Scanner:**

```
scanner.close();
```

Closing the Scanner to free up system resources.

This program provides a simple calculator with the same functionality as the previous example, but it uses a switch statement for handling different cases based on the operator entered by the user.