Activity 2: Loop-Based Basic Calculator with Operation Selection
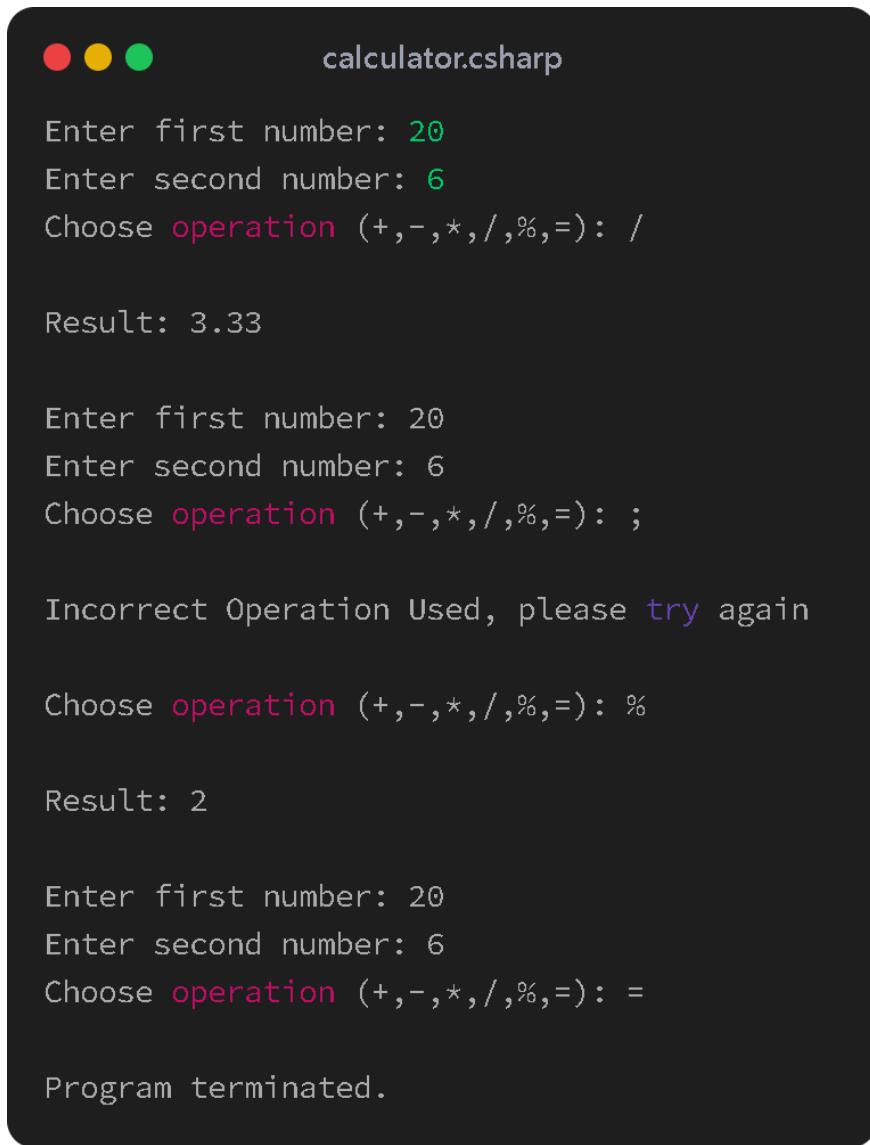
Objective

Create a loop-based calculator program that repeatedly performs user-selected arithmetic operations until the user chooses to exit.

Implementation Steps

1. **Create a new C# Console Application.**
2. **Continuously run the program using a `while` loop** until the user selects the Exit (=) option.
3. Prompt the user to input the first number.
   - The input must be a whole number (integer).
4. Prompt the user to input the second number.
   - The input must be a whole number (integer).
5. Prompt the user to choose an operation.
   - Allowed operations are:
     - Addition (+)
     - Subtraction (-)
     - Multiplication (*)
     - Division (/)
     - Modulo (%)
     - Exit (=)
6. Validate the selected operation.
   - If the operation is not valid, display the message:
     "Incorrect Operation Used, please try again"
   - Ask for the operation again without terminating the program.
7. **Handle the selected operation in a separate `Calculator` function using a `switch-case` statement:**
   - **Exit (=)** → terminate the program loop.
   - **Addition (+), Subtraction (–), Multiplication (*)** → perform operation and return an integer result.
   - **Division (/)** →

- If the second number is zero, return `null` and print `"Cannot divide by zero"`
- Otherwise, return a decimal (double) result.
  - **Modulo (%)** →
    - If the second number is zero, return `null` and print `"Cannot modulo by zero"`
    - Otherwise, return the remainder as an integer.
8. **Display the result** on the console.
   - Use a `while` **loop** to repeat the operation prompt until the user enters a valid operation or chooses Exit.
9. After displaying the result (or zero-division message), return to Step 3 and allow the user to perform another calculation.

```
●●●                    calculator.csharp

Enter first number: 20
Enter second number: 6
Choose operation (+,-,*,/,%,=): /

Result: 3.33

Enter first number: 20
Enter second number: 6
Choose operation (+,-,*,/,%,=): ;

Incorrect Operation Used, please try again

Choose operation (+,-,*,/,%,=): %

Result: 2

Enter first number: 20
Enter second number: 6
Choose operation (+,-,*,/,%,=): =

Program terminated.
```