LAB12_ANP_C6339_EXCEPTIONHANDLING

Due date: Friday, 17 November 2023, 5:30 AM
Maximum number of files: 1
Type of work: Individual work
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Assignment-1.

Create a Java program that acts as a simple calculator.

● The program should prompt the user to enter two numbers and an operator (+, -,

*, /).

● Perform the corresponding calculation based on the operator.

● Handle potential exceptions, such as division by zero or invalid operator input.

● Display the result or an appropriate error message.

Solution:-

```
import java.util.Scanner;


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


    // Prompt the user to enter the first number
    System.out.print("Enter the first number: ");
    double num1 = scanner.nextDouble();


    // Prompt the user to enter the operator
    System.out.print("Enter the operator (+, -, *, /): ");
    String operator = scanner.next();


    // Prompt the user to enter the second number
    System.out.print("Enter the second number: ");
    double num2 = scanner.nextDouble();


    double result = 0;
```

```
    try {
      switch (operator) {
        case "+":
          result = num1 + num2;
          break;
        case "-":
          result = num1 - num2;
          break;
        case "*":
          result = num1 * num2;
          break;
        case "/":
          if (num2 == 0) {
            throw new ArithmeticException("Division by zero");
          }
          result = num1 / num2;
          break;
        default:
          throw new IllegalArgumentException("Invalid operator: " + operator);
      }
    } catch (ArithmeticException e) {
      System.err.println("Error: " + e.getMessage());
    } catch (IllegalArgumentException e) {
      System.err.println("Error: " + e.getMessage());
    }

    if (!Double.isNaN(result)) {
      System.out.println("The result is: " + result);
    }
  }
}
```

Output:

```
C:\Users\thila\OneDrive\Desktop\Anudip_Labs>javac SimpleCalculator.java

C:\Users\thila\OneDrive\Desktop\Anudip_Labs>java SimpleCalculator
Enter the first number: 10
Enter the operator (+, -, *, /): +
Enter the second number: 5
The result is: 15.0
```

```
C:\Users\thila\OneDrive\Desktop\Anudip_Labs>javac SimpleCalculator.java

C:\Users\thila\OneDrive\Desktop\Anudip_Labs>java SimpleCalculator
Enter the first number: 12
Enter the operator (+, -, *, /): -
Enter the second number: 3
The result is: 9.0
```

```
C:\Users\thila\OneDrive\Desktop\Anudip_Labs>javac SimpleCalculator.java

C:\Users\thila\OneDrive\Desktop\Anudip_Labs>java SimpleCalculator
Enter the first number: 6
Enter the operator (+, -, *, /): *
Enter the second number: 4
The result is: 24.0
```

```
C:\Users\thila\OneDrive\Desktop\Anudip_Labs>javac SimpleCalculator.java

C:\Users\thila\OneDrive\Desktop\Anudip_Labs>java SimpleCalculator
Enter the first number: 10
Enter the operator (+, -, *, /): /
Enter the second number: 2
The result is: 5.0
```

```
C:\Users\thila\OneDrive\Desktop\Anudip_Labs>javac SimpleCalculator.java

C:\Users\thila\OneDrive\Desktop\Anudip_Labs>java SimpleCalculator
Enter the first number: 10
Enter the operator (+, -, *, /): /
Enter the second number: 0
Error: Division by zero
The result is: 0.0
```

```
C:\Users\thila\OneDrive\Desktop\Anudip_Labs>javac SimpleCalculator.java

C:\Users\thila\OneDrive\Desktop\Anudip_Labs>java SimpleCalculator
Enter the first number: 10
Enter the operator (+, -, *, /): %
Enter the second number: 2
Error: Invalid operator: %
The result is: 0.0
```

```
C:\Users\thila\OneDrive\Desktop\Anudip_Labs>javac SimpleCalculator.java

C:\Users\thila\OneDrive\Desktop\Anudip_Labs>java SimpleCalculator
Enter the first number: 10
Enter the operator (+, -, *, /): f
Enter the second number: 2
Error: Invalid operator: f
The result is: 0.0
```