

CS433P Programming Paradigm Lab

DATE: 13-01-2023

EXPERIMENT NO 1

REGISTER NO: 2162014

DEMONSTRATE FUNDAMENTALS OF OOP

AIM: Write a java program to make a simple calculator.

PROGRAM:

```
/**
 *
 * @author 2162014
 */
import java.util.Scanner;

public class Calculator {

    public double Operations(char o, double r, double n1, double n2) {
        // conditions to perform arithmetic operations
        switch (o) {
            case '+' -> {
                System.out.println("\nAddition: " + n1 + " + " + n2);
                r = n1 + n2;
                break;
            }
            case '-' -> {
                System.out.println("\nSubtraction: " + n1 + " - " + n2);
                r = n1 - n2;
                break;
            }
            case '*' -> {
                System.out.println("\nMultiplication: " + n1 + " * " + n2);
                r = n1 * n2;
                break;
            }
            case '/' -> {
                System.out.println("\nDivision: " + n1 + " / " + n2);
                r = n1 / n2;
                break;
            }
            default -> {
                System.out.println("\nInvalid input!\n");
                break;
            }
        }
        return r;
    }

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

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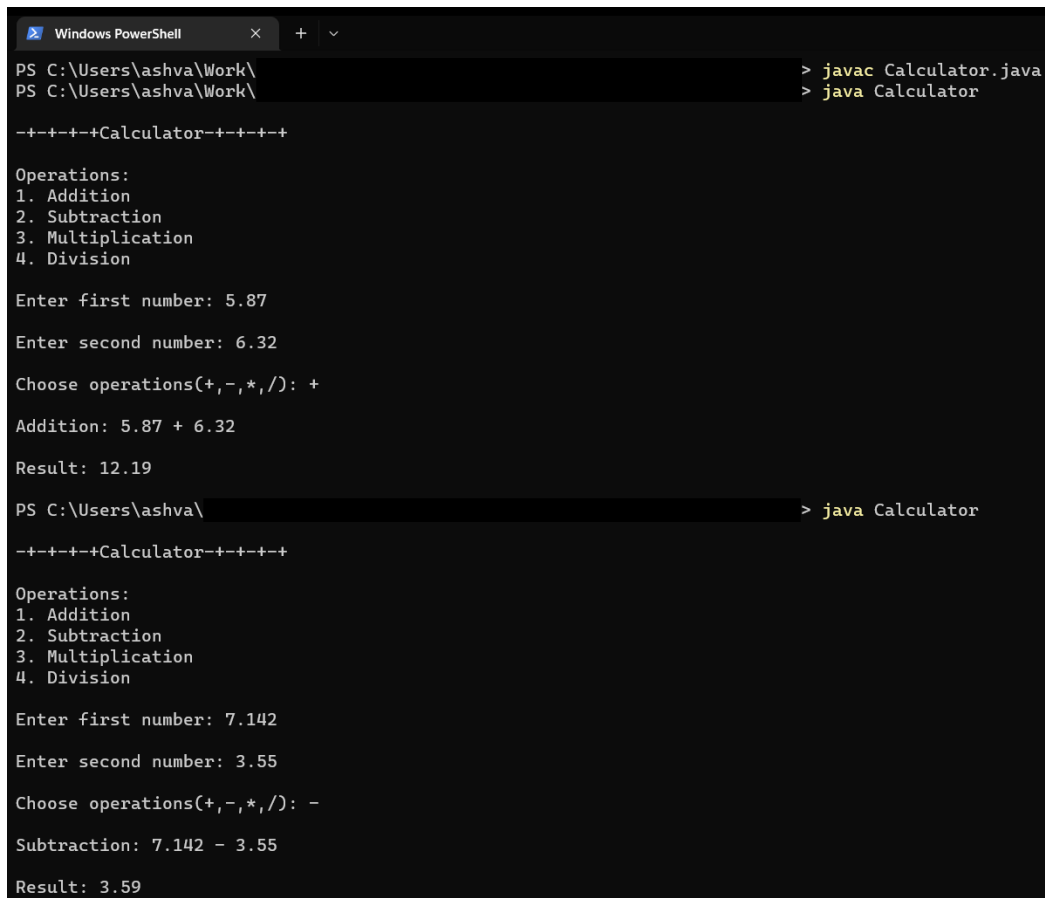
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```
Scanner scn = new Scanner(System.in);
Calculator obj = new Calculator();
System.out.print("\n-+-+Calculator-+-+-\n");
// Menu
System.out.print("\nOperations:\n1. Addition\n2. Subtraction\n3. Multiplication\n4.
Division\n");
// get numbers from user
System.out.print("\nEnter first number: ");
double num1 = scn.nextDouble();
System.out.print("\nEnter second number: ");
double num2 = scn.nextDouble();
// get operation from user
System.out.print("\nChoose operations(+,-,*,/): ");
char op = scn.next().charAt(0);
double result = 0, ans = obj.Operations(op, result, num1, num2);
// display output to user
System.out.printf("\nResult: %.2f \n", ans);
System.out.print("\n");
}
}
```

OUTPUTS:



```
Windows PowerShell
PS C:\Users\ashva\Work\ > javac Calculator.java
PS C:\Users\ashva\Work\ > java Calculator

-+-+Calculator-+-+--

Operations:
1. Addition
2. Subtraction
3. Multiplication
4. Division

Enter first number: 5.87
Enter second number: 6.32
Choose operations(+,-,*,/): +
Addition: 5.87 + 6.32
Result: 12.19

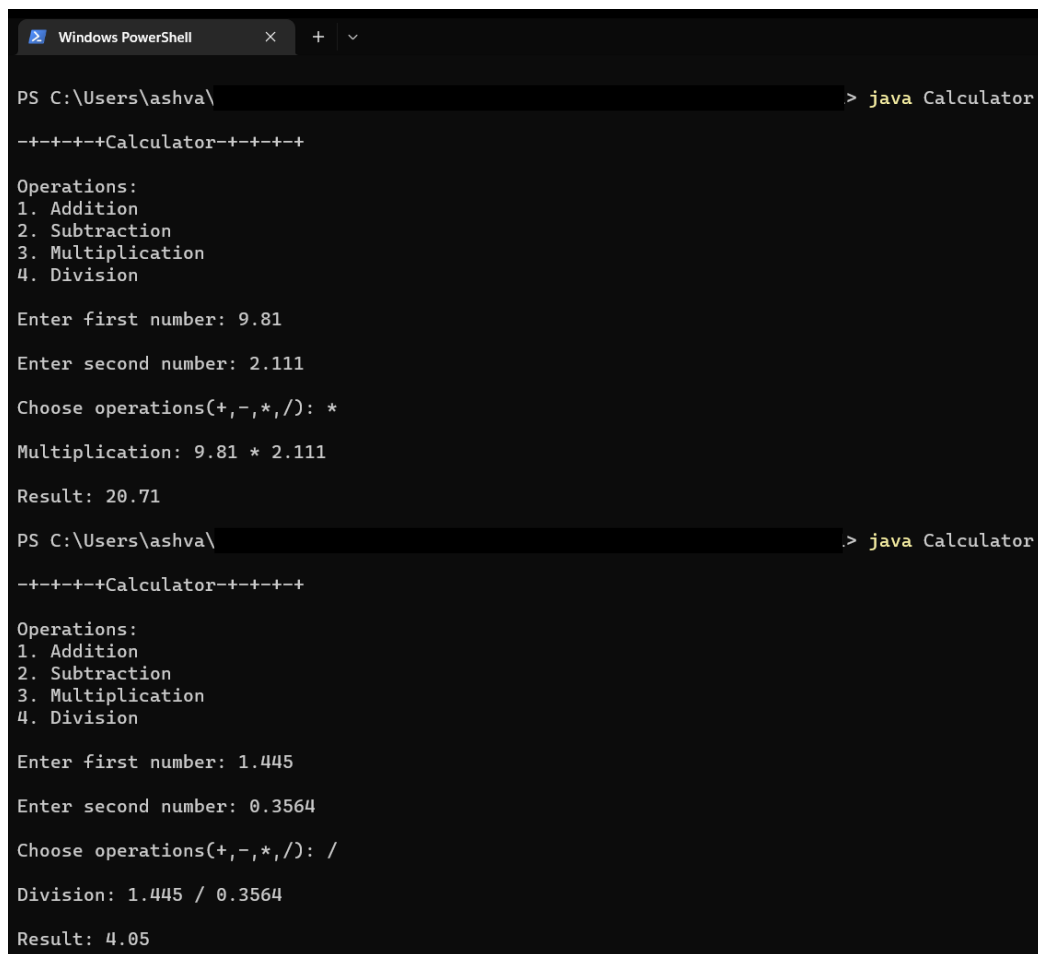
PS C:\Users\ashva\ > java Calculator

-+-+Calculator-+-+--

Operations:
1. Addition
2. Subtraction
3. Multiplication
4. Division

Enter first number: 7.142
Enter second number: 3.55
Choose operations(+,-,*,/): -
Subtraction: 7.142 - 3.55
Result: 3.59
```

Fig. 1 – Output for addition and subtraction



```
Windows PowerShell
PS C:\Users\ashva\ > java Calculator
-+-+--+Calculator-+-+--+

Operations:
1. Addition
2. Subtraction
3. Multiplication
4. Division

Enter first number: 9.81
Enter second number: 2.111
Choose operations(+,-,*,/): *
Multiplication: 9.81 * 2.111
Result: 20.71

PS C:\Users\ashva\ > java Calculator
-+-+--+Calculator-+-+--+

Operations:
1. Addition
2. Subtraction
3. Multiplication
4. Division

Enter first number: 1.445
Enter second number: 0.3564
Choose operations(+,-,*,/): /
Division: 1.445 / 0.3564
Result: 4.05
```

Fig. 2 – Output for multiplication and division

RESULTS:

The simple calculator was created successfully in java using basic arithmetic operations and switch cases functionality.