Assignment 7

```
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// Batch  AIML(B3)
```

Main.java

```
// Main.java

import java.util.Scanner;

public class Main {
    // Main method
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        Calculator calculator = new Calculator();

        // Menu
        System.out.println("Calculator Menu:");
        System.out.println("1. Addition");
        System.out.println("2. Subtraction");
        System.out.println("3. Multiplication");
        System.out.println("4. Division");
        System.out.print("Enter your choice: ");
        int choice = scanner.nextInt();

        try {
            switch (choice) {
                case 1:
                    calculator.performAddition();
                    break;
                case 2:
                    calculator.performSubtraction();
                    break;
                case 3:
                    calculator.performMultiplication();
                    break;
                case 4:
                    calculator.performDivision();
                    break;
                default:
                    System.out.println("Invalid choice");
                    break;
```

```
            }
        } catch (ArithmeticException e) {
            System.out.println("Error: " + e.getMessage());
        } catch (Exception e) {
            System.out.println("An error occurred: " + e.getMessage());
        } finally {
            scanner.close();
        }
    }
}
```

Calculator.java

```
// Calculator.java

public class Calculator {
    // Perform addition method
    public void performAddition() {
        Addition addition = new Addition();
        addition.add();
    }

    // Perform subtraction method
    public void performSubtraction() {
        Substraction subtraction = new Substraction();
        subtraction.subtract();
    }

    // Perform multiplication method
    public void performMultiplication() {
        Multiplication multiplication = new Multiplication();
        multiplication.multiply();
    }

    // Perform division method
    public void performDivision() {
        Division division = new Division();
        division.divide();
    }
}
```

Addition.java

```
// Addition.java

import java.util.Scanner;
```

```
// Addition class
public class Addition {
    Scanner scanner = new Scanner(System.in);

    // Addition method
    public void add() {
        System.out.print("Enter first number: ");
        double num1 = scanner.nextDouble();
        System.out.print("Enter second number: ");
        double num2 = scanner.nextDouble();
        double result = num1 + num2;
        System.out.println("Result: " + result);
    }
}
```

Subtraction.java

```
// Subtraction.java

import java.util.Scanner;

// Subtraction class
public class Substraction {
    Scanner scanner = new Scanner(System.in);

    // Subtraction method
    public void subtract() {
        System.out.print("Enter first number: ");
        double num1 = scanner.nextDouble();
        System.out.print("Enter second number: ");
        double num2 = scanner.nextDouble();
        double result = num1 - num2;
        System.out.println("Result: " + result);
    }
}
```

Multiplication.java

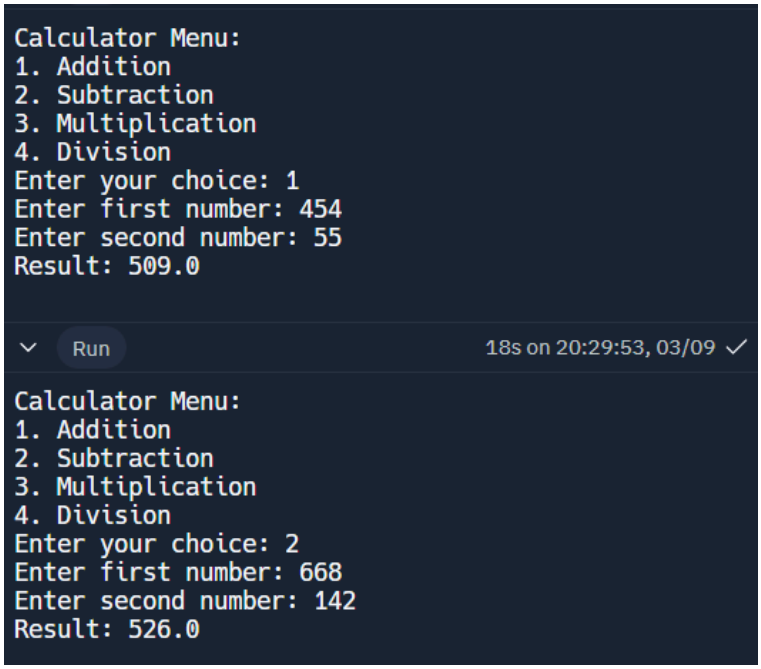
```
// Multiplication.java

import java.util.Scanner;

// Multiplication class
public class Multiplication {
    Scanner scanner = new Scanner(System.in);
```

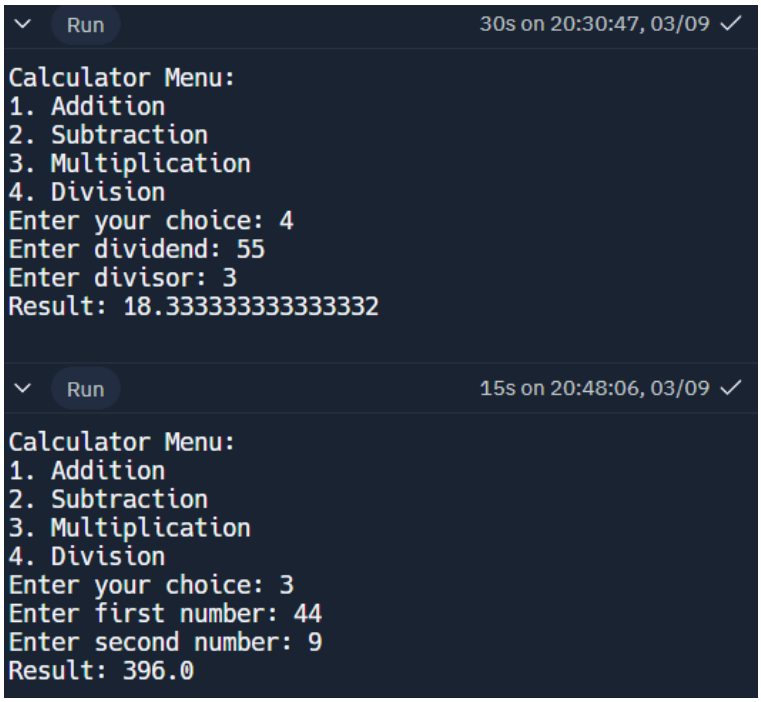
```
    // Multiplication method
    public void multiply() {
        System.out.print("Enter first number: ");
        double num1 = scanner.nextDouble();
        System.out.print("Enter second number: ");
        double num2 = scanner.nextDouble();
        double result = num1 * num2;
        System.out.println("Result: " + result);
    }
}
```

Division.java

```
// Division.java

import java.util.Scanner;

// Division class
public class Division {
    Scanner scanner = new Scanner(System.in);

    // Division method
    public void divide() {
        System.out.print("Enter dividend: ");
        double dividend = scanner.nextDouble();
        System.out.print("Enter divisor: ");
        double divisor = scanner.nextDouble();

        if (divisor == 0) {
            throw new ArithmeticException("Division by zero is not allowed");
        }

        double result = dividend / divisor;
        System.out.println("Result: " + result);
    }
}
```

Output : -


Calculator Menu:
1. Addition
2. Subtraction
3. Multiplication
4. Division
Enter your choice: 1
Enter first number: 454
Enter second number: 55
Result: 509.0
Run
18s on 20:29:53, 03/09
Calculator Menu:
1. Addition
2. Subtraction
3. Multiplication
4. Division
Enter your choice: 2
Enter first number: 668
Enter second number: 142
Result: 526.0


Run
30s on 20:30:47, 03/09
Calculator Menu:
1. Addition
2. Subtraction
3. Multiplication
4. Division
Enter your choice: 4
Enter dividend: 55
Enter divisor: 3
Result: 18.333333333333332
Run
15s on 20:48:06, 03/09
Calculator Menu:
1. Addition
2. Subtraction
3. Multiplication
4. Division
Enter your choice: 3
Enter first number: 44
Enter second number: 9
Result: 396.0