ASSIGNMENT 1

PIJ

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BATCH: A2

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Part1: Implement a menu-driven Java program (like fib or factorial) to implement these input methods in java (command line args, Scanner, BufferedReader, DataInputStream, Console)

CODE:

InputMethods.java

```java
import java.io.*;
import java.util.Scanner;

no usages
public class InputMethods {

    no usages
    public static void main(String[] args) throws IOException {
        Scanner sc = new Scanner(System.in);
        BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
        DataInputStream dis = new DataInputStream(System.in);
        Console console = System.console();

        System.out.println("Please select an input method:");
        System.out.println("1. Command Line Arguments");
        System.out.println("2. Scanner");
        System.out.println("3. BufferedReader");
        System.out.println("4. DataInputStream");
        System.out.println("5. Console");

        int choice = sc.nextInt();

```

```
        switch (choice) {
            case 1:
                System.out.println("Enter two numbers:");
                int num1 = Integer.parseInt(args[0]);
                int num2 = Integer.parseInt(args[1]);
                System.out.println("Numbers entered through Command Line Arguments: " + num1 + " and " + num2);
                break;
            case 2:
                System.out.println("Enter two numbers:");
                int num3 = sc.nextInt();
                int num4 = sc.nextInt();
                System.out.println("Numbers entered through Scanner: " + num3 + " and " + num4);
                break;
            case 3:
                System.out.println("Enter two numbers:");
                int num5 = Integer.parseInt(br.readLine());
                int num6 = Integer.parseInt(br.readLine());
                System.out.println("Numbers entered through BufferedReader: " + num5 + " and " + num6);
                break;
```

```
            case 4:
                System.out.println("Enter two numbers:");
                int num7 = dis.readInt();
                int num8 = dis.readInt();
                System.out.println("Numbers entered through DataInputStream: " + num7 + " and " + num8);
                break;
            case 5:
                System.out.println("Enter two numbers:");
                int num9 = Integer.parseInt(console.readLine());
                int num10 = Integer.parseInt(console.readLine());
                System.out.println("Numbers entered through Console: " + num9 + " and " + num10);
                break;
            default:
                System.out.println("Invalid choice. Please try again.");
                break;
        }
    }
}
```

OUTPUT:

```
"C:\Program Files\Java\jdk-19\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.3.1\lib\id
Please select an input method:
1. Command Line Arguments
2. Scanner
3. BufferedReader
4. DataInputStream
5. Console
2
Enter two numbers:
1
3
Numbers entered through Scanner: 1 and 3

Process finished with exit code 0
```

Part2: Implement a simple menu driven calculator in java to implement add, sub, mul, div, sqrt, power, mean, variance. Implement a separate Calculator class to include all related function inside that class. (mean calculation : program reads numbers from the keyboard, summing them in the process until the user enters the string “end”. It then stops input & displays the avg. of numbers)

```java
import ...

no usages
public class MenuDrivenCalculator {
    no usages
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        Calculator calculator = new Calculator();
        ArrayList<Double> numbers = new ArrayList<>();
        int choice;

        while (true) {
            System.out.println("Menu:");
            System.out.println("1. Addition");
            System.out.println("2. Subtraction");
            System.out.println("3. Multiplication");
            System.out.println("4. Division");
            System.out.println("5. Square root");
            System.out.println("6. Power");
            System.out.println("7. Mean");
            System.out.println("8. Variance");
            System.out.println("9. Exit");
            System.out.print("Enter your choice: ");
            choice = sc.nextInt();
```

```
            if (choice == 9) {
                break;
            }

            double a, b;
            switch (choice) {
                case 1:
                    System.out.print("Enter first number: ");
                    a = sc.nextDouble();
                    System.out.print("Enter second number: ");
                    b = sc.nextDouble();
                    System.out.println("Result: " + calculator.add(a, b));
                    break;
                case 2:
                    System.out.print("Enter first number: ");
                    a = sc.nextDouble();
            }
        }
    }
}
```

OUTPUT:

```
"C:\Program Files\Java\jdk-19\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.3.1\lib\
Menu:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Square root
6. Power
7. Mean
8. Variance
9. Exit
Enter your choice: 1
Enter first number: 4
Enter second number: 5
Result: 9.0
```

GITHUB REPOSITORY:

https://github.com/Hemakshi011/Java-menu-driven-programs-1.git