

## LABEXERCISE#2 – PROGRAM STRUCTURED DESIGN

**A. The sample code below is an example of a structured program. Your task is to enhance or modify the code below and make it a STRUCTURE program by dividing the different processes into modules or functions.**

```
import java.util.Scanner;

public class vinasAct2 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.println("Enter two numbers: ");
        int num1 = sc.nextInt();
        int num2 = sc.nextInt();

        System.out.println("Choose operation: 1. Add 2. Subtract 3. Multiply 4. Divide");
        int choice = sc.nextInt();

        // Pass num1 and num2 as arguments to Operation class
        Operation.oper(choice, num1, num2);
    }

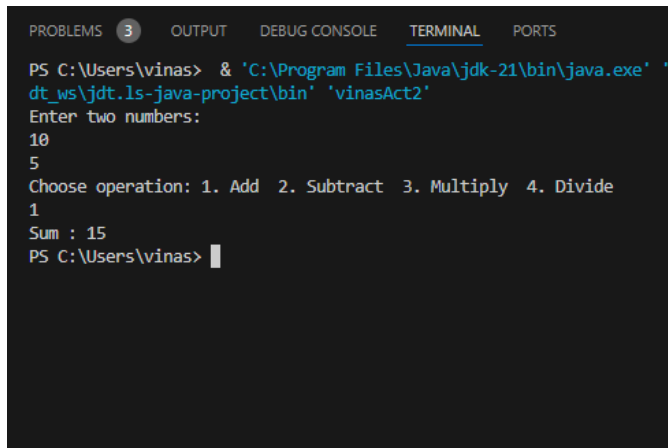
    static class Operation {
        // Accept num1 and num2 as arguments
        public static void oper(int ope, int num1, int num2) {
            if (ope == 1) {
                Addition.add(num1, num2);
            } else if (ope == 2) {
                Subtraction.sub(num1, num2);
            } else if (ope == 3) {
                Multiplication.mul(num1, num2);
            } else if (ope == 4) {
                Division.div(num1, num2);
            } else {
                System.out.println("Invalid choice.");
            }
        }
    }

    static class Addition {
        public static void add(int num1, int num2) {
            System.out.println("Sum : " + (num1 + num2));
        }
    }
}
```

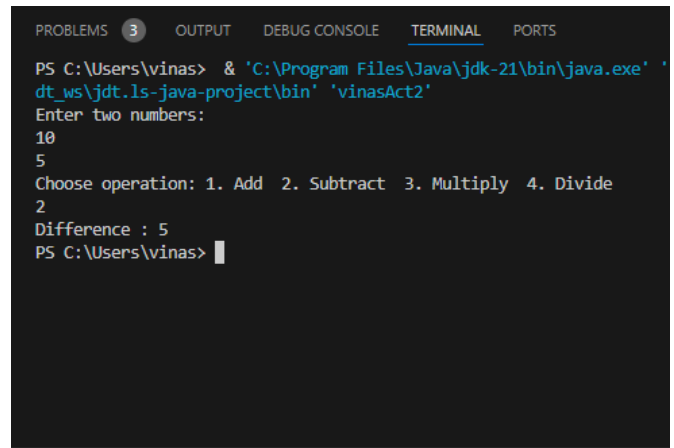
```
static class Subtraction {
    public static void sub(int num1, int num2) {
        System.out.println("Difference : " + (num1 - num2));
    }
}

static class Multiplication {
    public static void mul(int num1, int num2) {
        System.out.println("Product : " + (num1 * num2));
    }
}

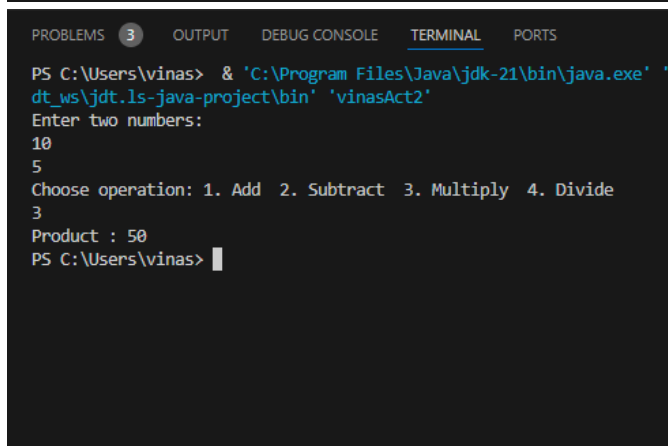
static class Division {
    public static void div(int num1, int num2) {
        if (num2 != 0) {
            System.out.println("Quotient : " + (num1 / num2));
        } else {
            System.out.println("Cannot divide by zero.");
        }
    }
}
}
```



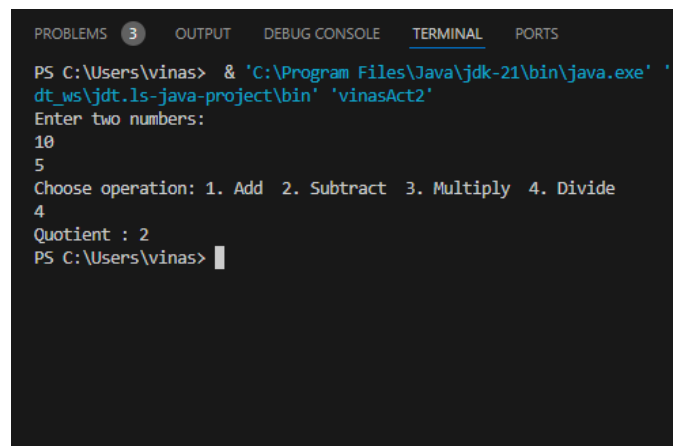
```
PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\vinas> & 'C:\Program Files\Java\jdk-21\bin\java.exe' '
dt_ws\jdt.ls-java-project\bin' 'vinasAct2'
Enter two numbers:
10
5
Choose operation: 1. Add 2. Subtract 3. Multiply 4. Divide
1
Sum : 15
PS C:\Users\vinas>
```



```
PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\vinas> & 'C:\Program Files\Java\jdk-21\bin\java.exe' '
dt_ws\jdt.ls-java-project\bin' 'vinasAct2'
Enter two numbers:
10
5
Choose operation: 1. Add 2. Subtract 3. Multiply 4. Divide
2
Difference : 5
PS C:\Users\vinas>
```



```
PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\vinas> & 'C:\Program Files\Java\jdk-21\bin\java.exe' '
dt_ws\jdt.ls-java-project\bin' 'vinasAct2'
Enter two numbers:
10
5
Choose operation: 1. Add 2. Subtract 3. Multiply 4. Divide
3
Product : 50
PS C:\Users\vinas>
```



```
PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\vinas> & 'C:\Program Files\Java\jdk-21\bin\java.exe' '
dt_ws\jdt.ls-java-project\bin' 'vinasAct2'
Enter two numbers:
10
5
Choose operation: 1. Add 2. Subtract 3. Multiply 4. Divide
4
Quotient : 2
PS C:\Users\vinas>
```

**B. Create a structured chart to show how the program works**

