


 calculator - Notepad

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// Cohesion: High cohesion example

// This class represents a calculator that performs arithmetic operations


```
public class Calculator {  
  
    public int add(int a, int b) {  
        return a + b;  
    }  
  
    public int subtract(int a, int b) {  
        return a - b;  
    }  
  
    public int multiply(int a, int b) {  
        return a * b;  
    }  
  
    public double divide(int a, int b) {  
        if (b != 0) {  
            return (double) a / b;  
        } else {  
            throw new ArithmeticException("Cannot divide by zero!");  
        }  
    }  
}
```

 CalculatorApp - Notepad

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```
// Coupling: Low coupling example  
// This class uses the Calculator class to perform calculations
```

```
public class CalculatorApp {  
  
    private Calculator calculator;  
  
    public CalculatorApp() {  
        this.calculator = new Calculator();  
    }  
  
    public void calculate(int a, int b) {  
        int sum = calculator.add(a, b);  
        int difference = calculator.subtract(a, b);  
        int product = calculator.multiply(a, b);  
        double quotient = calculator.divide(a, b);  
  
        System.out.println("Sum: " + sum);  
        System.out.println("Difference: " + difference);  
        System.out.println("Product: " + product);  
        System.out.println("Quotient: " + quotient);  
    }  
}
```

 Main - Notepad

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```
// Main class to run the program  
  
public class Main {  
  
    public static void main(String[] args) {  
        CalculatorApp app = new CalculatorApp();  
        app.calculate(10, 5);  
    }  
}
```

Here's the step-by-step process for execution of program:

1. Open the Command Prompt.

Change the directory to the folder where the files are located using the cd command. For example, if the files are on the desktop, you can use the command `cd C:\Users\Lenovo\Desktop\cohesion`.

2. Compile the Java files using the javac command one by one in the correct order: javac Calculator.java, javac CalculatorApp.java, javac Main.java.

3. If the compilation is successful without any errors, you can run the program using the java command: java Main.

Output:

```
Microsoft Windows [Version 10.0.19045.3086]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Lenovo>cd Desktop

C:\Users\Lenovo\Desktop>cd cohesion

C:\Users\Lenovo\Desktop\cohesion>javac Calculator.java

C:\Users\Lenovo\Desktop\cohesion>javac CalculatorApp.java

C:\Users\Lenovo\Desktop\cohesion>javac Main.java

C:\Users\Lenovo\Desktop\cohesion>java Main
Sum: 15
Difference: 5
Product: 50
Quotient: 2.0

C:\Users\Lenovo\Desktop\cohesion>
```