**JUnit Testing**

**Exercise 4: Arrange-Act-Assert (AAA) Pattern, Test Fixtures, Setup and Teardown Methods in JUnit**

**Scenario:**

You need to organize your tests using the Arrange-Act-Assert (AAA) pattern and use setup and teardown methods.

Steps: 1. Write tests using the AAA pattern.

2. Use @Before and @After annotations for setup and teardown methods.

**Calculator.java :**

package com.example.calculator;

public class Calculator {

public int add(int a, int b) {

return a + b;

}

public int subtract(int a, int b) {

return a - b;

}

}

**CalculatorTest.java :**

package com.example.calculator;

import org.junit.After;

import org.junit.Before;

import org.junit.Test;

import static org.junit.Assert.\*;

public class CalculatorTest {

private Calculator calc;

// Setup method (runs before every test)

@Before

public void setUp() {

System.out.println("Setting up Calculator...");

calc = new Calculator(); // Arrange

}

// Teardown method (runs after every test)

@After

public void tearDown() {

System.out.println("Tearing down Calculator...\n");

calc = null;

}

@Test

public void testAdd() {

// Act

int result = calc.add(5, 3);

// Assert

assertEquals(8, result);

System.out.println("testAdd passed");

}

@Test

public void testSubtract() {

// Act

int result = calc.subtract(10, 4);

// Assert

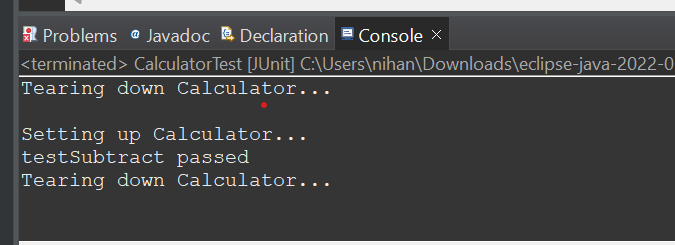
assertEquals(6, result);

System.out.println("testSubtract passed");

}

}

**Output :**

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