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

**CalculatorTest.java**

import org.junit.Before;

import org.junit.After;

import org.junit.Test;

import static org.junit.Assert.\*;

public class CalculatorTest {

private Calculator calc;

@Before

public void setUp() {

// Setup: Initialize calculator before each test

calc = new Calculator();

System.out.println(">> Setup complete");

}

@After

public void tearDown() {

// Teardown: Cleanup if needed

System.out.println(">> Test finished\n");

}

@Test

public void testAddition() {

// Arrange

int a = 2, b = 3;

// Act

int result = calc.add(a, b);

// Assert

assertEquals(5, result);

}

@Test

public void testSubtraction() {

// Arrange

int a = 5, b = 2;

// Act

int result = calc.subtract(a, b);

// Assert

assertEquals(3, result);

}

}

**Calculator.java**

public class Calculator {

public int add(int a, int b) {

return a + b;

}

public int subtract(int a, int b) {

return a - b;

}

}

**OUTPUT:**

>> Setup complete

>> Test finished

>> Setup complete

>> Test finished

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Running CalculatorTest

Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.02 s

Results :

Tests run: 2, Failures: 0, Errors: 0, Skipped: 0