**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**

public class Calculator {

public int add(int a, int b) {

return a + b;

}

public int subtract(int a, int b) {

return a - b;

}

}

**Test.java**

import org.junit.Before;

import org.junit.After;

import org.junit.Test;

import static org.junit.Assert.\*;

public class CalculatorTest {

private Calculator calculator;

@Before

public void setUp() {

// Setup: runs before each test

calculator = new Calculator();

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

}

@After

public void tearDown() {

// Teardown: runs after each test

calculator = null;

System.out.println("Teardown complete.");

}

@Test

public void testAddition() {

// Arrange

int a = 2;

int b = 3;

// Act

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

// Assert

assertEquals(5, result);

}

@Test

public void testSubtraction() {

// Arrange

int a = 10;

int b = 4;

// Act

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

// Assert

assertEquals(6, result);

}

}

