**JUnit Basic Testing Exercise**

* **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.

* **Step 1-**
* Create a new test class in your project.
* Class name- CalculatorAAATest.java
* Path- src/test/java/org/example
* **Step 2-**
* Write tests using **Arrange-Act-Assert (AAA)** pattern.
* AAA Pattern:
* **Arrange**: Prepare inputs or context
* **Act**: Call the method under test
* **Assert**: Verify the result
* Use @Before and @After annotations to set up and clean up before/after each test.
* @Before:
  + - * Runs **before** every test.
      * Used for setup.
* @After:
  + - * Runs **after** every test.
      * Used for cleanup.

**Code:**

package org.example;

import org.junit.Before;

import org.junit.After;

import org.junit.Test;

import static org.junit.Assert.\*;

public class CalculatorAAATest {

private Calculator calculator;

@Before

public void setUp() {

// Setup: runs before every test

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

calculator = new Calculator();

}

@After

public void tearDown() {

// Teardown: runs after every test

System.out.println("Cleaning up...");

calculator = null;

}

@Test

public void testAdd() {

// Arrange

int a = 4, b = 6;

// Act

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

// Assert

assertEquals(10, result);

}

@Test

public void testSubtract() {

// Arrange

int a = 9, b = 3;

// Act

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

// Assert

assertEquals(6, result);

}

}

* ***Output:***

