**3.JUnit\_Basic Testing Exercises**

**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.**

**CODE:**

**Calculator.java:**

package com.example;

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;

import org.junit.jupiter.api.BeforeEach;

import org.junit.jupiter.api.AfterEach;

import org.junit.jupiter.api.Test;

import static org.junit.jupiter.api.Assertions.\*;

public class CalculatorTest {

private Calculator calculator;

@BeforeEach

public void setUp() {

calculator = new Calculator();

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

}

@AfterEach

public void tearDown() {

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

}

@Test

public void testAdd() {

int a = 5;

int b = 3;

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

assertEquals(8, result, "5 + 3 should be 8");

}

@Test

public void testSubtract() {

int a = 10;

int b = 4;

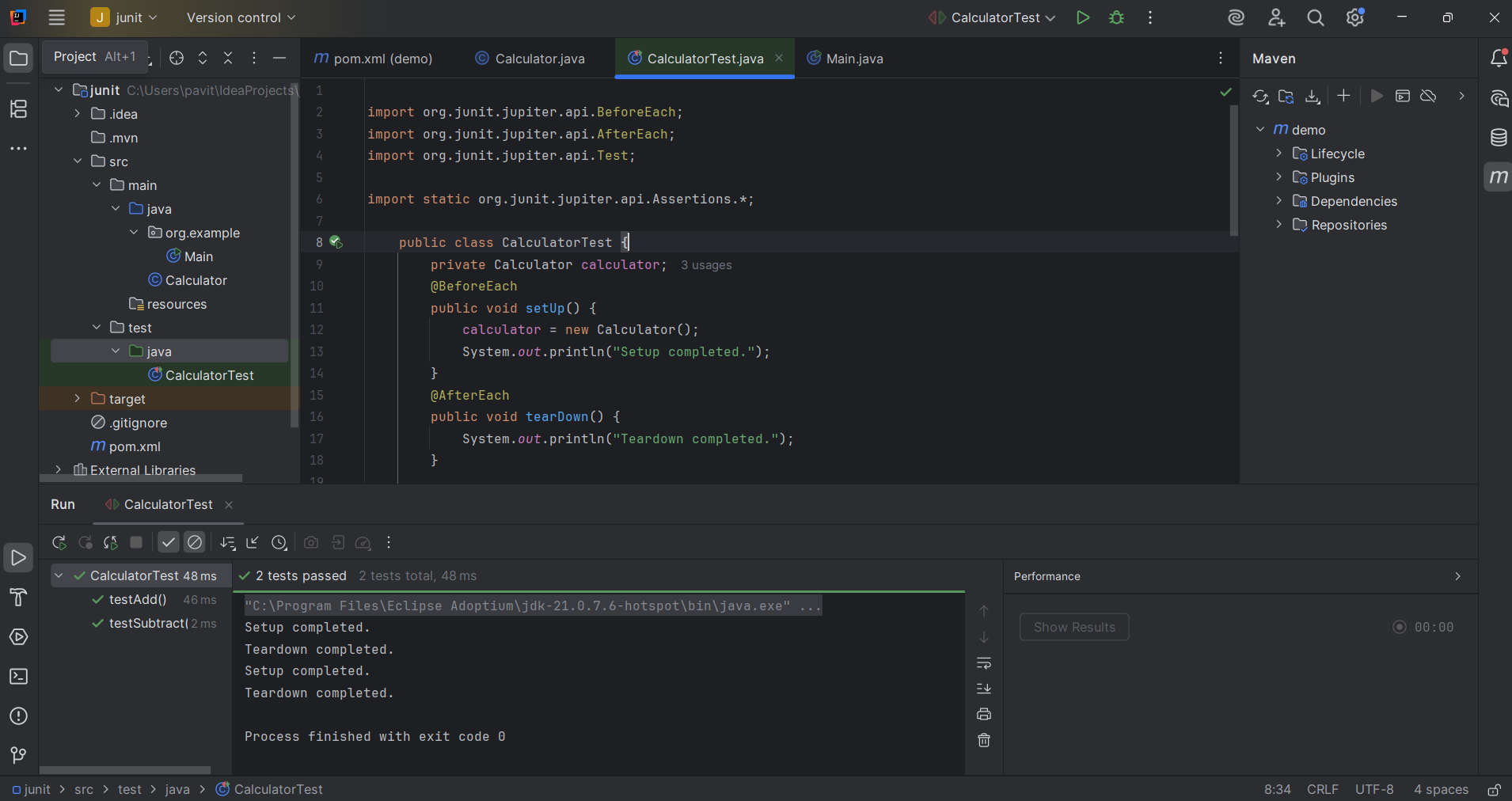
int result = calculator.subtract(a, b);

assertEquals(6, result, "10 - 4 should be 6");

}

}

**OUTPUT:**

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