**JUnit\_Basic Testing Exercises**

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

**Calculator.java**

package com.example;

public class Calculator {

public int add(int a, int b) {

return a + b;

}

public int multiply(int a, int b) {

return a \* b;

}

}

**Write the Test Code with @Before and @After**

**CalculatorTest.java**

package com.example;

import static org.junit.Assert.\*;

import org.junit.Before;

import org.junit.After;

import org.junit.Test;

public class CalculatorTest {

private Calculator calc;

**// This method runs before every test**

@Before

public void setUp() {

calc = new Calculator();

System.out.println("Setup: Calculator object created.");

}

**// This method runs after every test**

@After

public void tearDown() {

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

}

**// Test for addition using AAA pattern**

@Test

public void testAdd() {

// Arrange

int a = 2;

int b = 3;

// Act

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

// Assert

assertEquals(5, result);

}

**// Test for multiplication using AAA pattern**

@Test

public void testMultiply() {

// Arrange

int a = 4;

int b = 5;

// Act

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

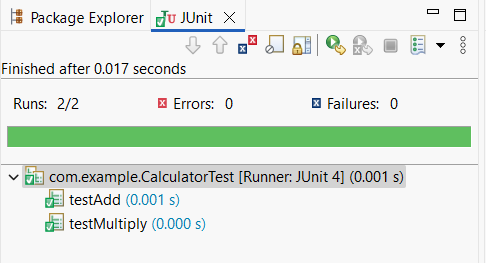
// Assert

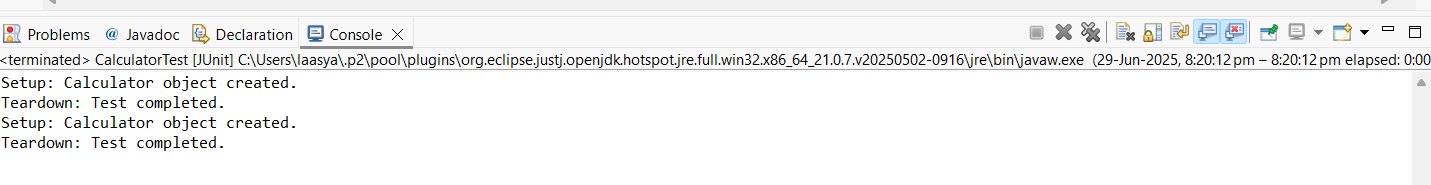
assertEquals(20, result);

}

}

**OUTPUT:**

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