**JUnit Testing Exercises**

**Exercise 1: Setting Up JUnit**

**Calculator.java:**

package com.example;

public class Calculator {

public int add(int a, int b) {

return a + b;

}

}

**calculatorTest.java:**

package com.example;

import org.junit.Test;

import static org.junit.Assert.\*;

public class calculatorTest {

@Test

public void testAdd() {

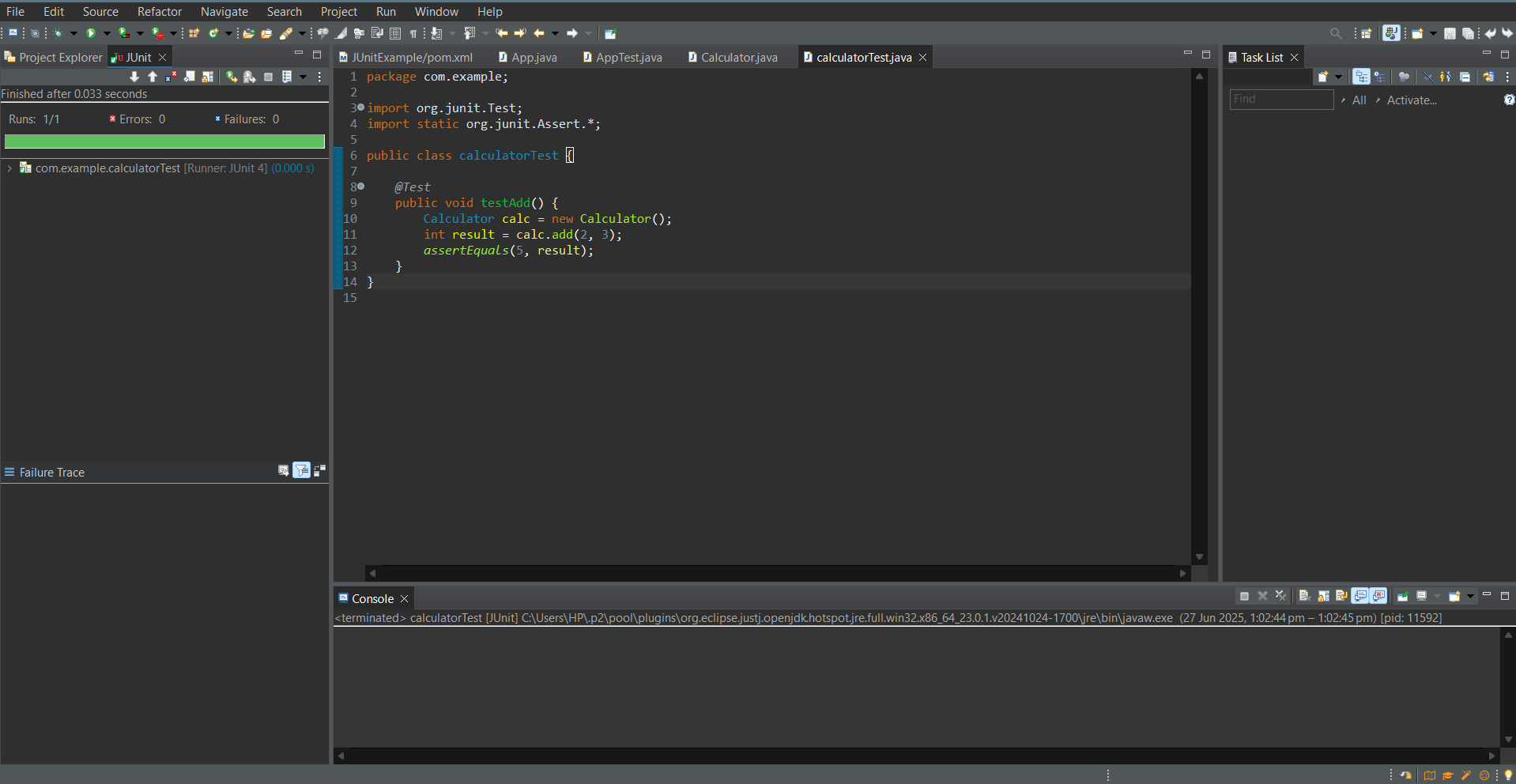
Calculator calc = new Calculator();

int result = calc.add(2, 3);

assertEquals(5, result);

}

}



**Exercise 3: Assertions in JUnit**

**AssertionsTest.java:**

package com.example;

import org.junit.Test;

import static org.junit.Assert.\*;

public class AssertionsTest {

@Test

public void testAssertions() {

assertEquals(5, 2 + 3);

assertTrue(5 > 3);

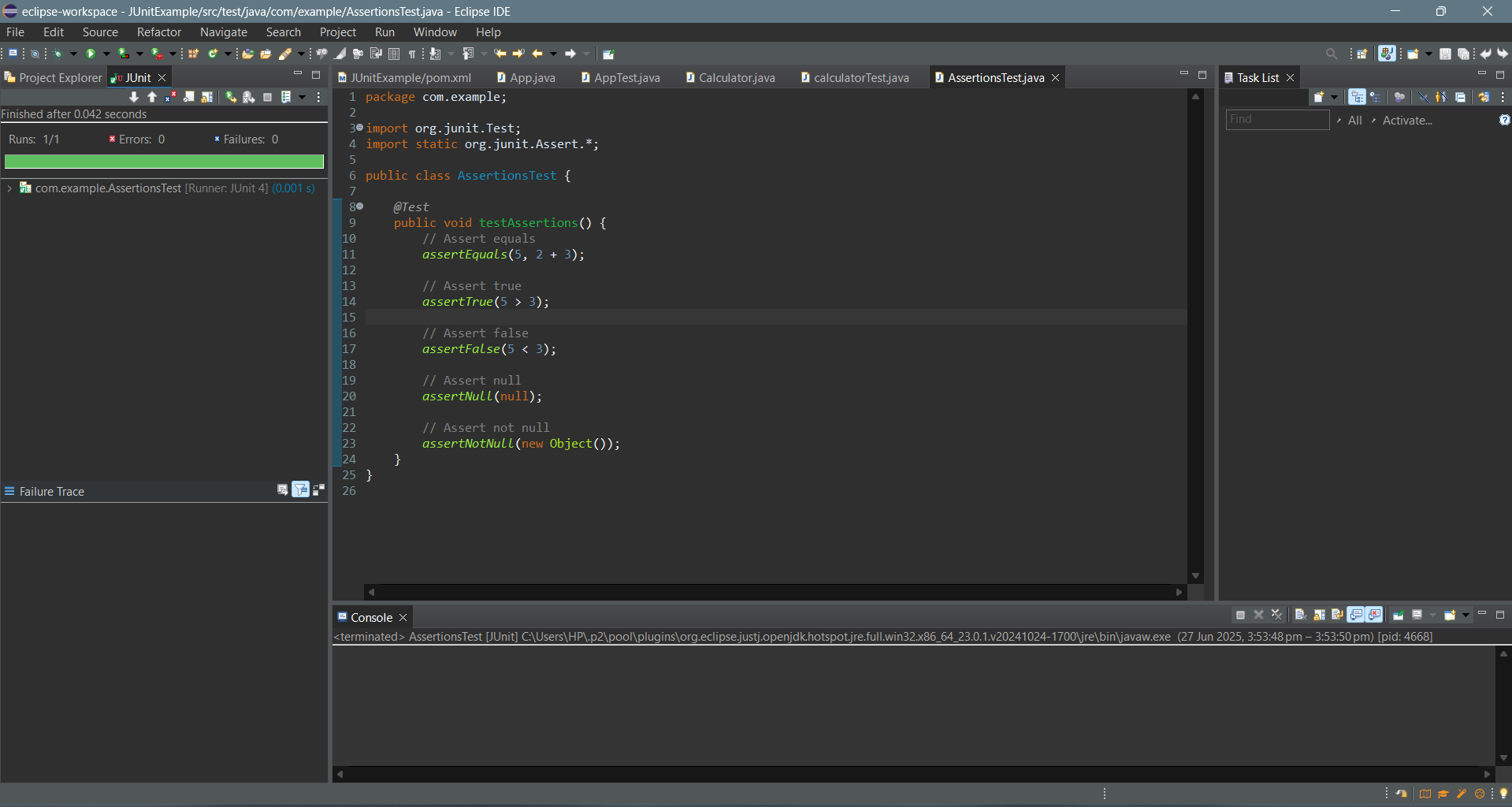
assertFalse(5 < 3);

assertNull(null);

assertNotNull(new Object());

}

}



**Exercise 4: Arrang e-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;

}

}

**CalculatorTest.java:**

package com.example;

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() {

// Arrange: initialize Calculator before each test

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

calc = new Calculator();

}

@After

public void tearDown() {

System.out.println("Tearing down...");

calc = null;

}

@Test

public void testAdd() {

// Act

int result = calc.add(2, 3);

assertEquals(5, result);

}

@Test

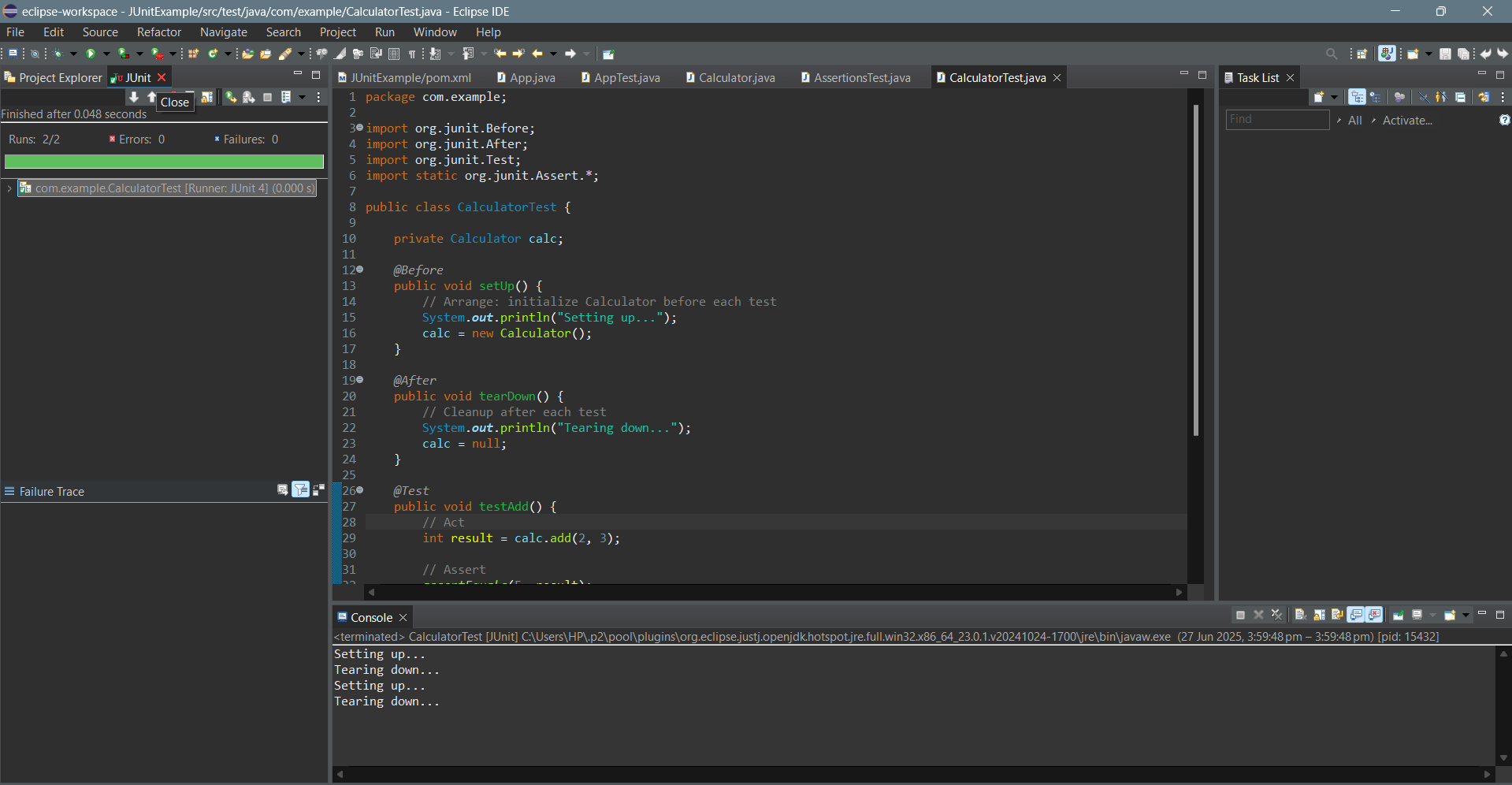
public void testMultiply() {

int result = calc.multiply(3, 4);

assertEquals(12, result);

}

}

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