**Exercise 1: Setting Up JUnit**

To set up JUnit in your Java project:

1. Create a new Java project in your IDE (e.g., IntelliJ IDEA, Eclipse).
2. Add JUnit dependency to your project. If you're using Maven, add this to your pom.xml:

xml

<dependency>

<groupId>junit</groupId>

<artifactId>junit</artifactId>

<version>4.13.2</version>

<scope>test</scope>

</dependency>

1. Create a new test class and add test methods using @Test.

Sample Test Class (SampleTest.java):

import org.junit.Test;

import static org.junit.Assert.\*;

public class SampleTest {

@Test

public void testExample() {

int expected = 10;

int actual = 5 + 5;

assertEquals(expected, actual);

}

}

**Exercise 2: Writing Basic JUnit Tests**

Java class to test:

public class Calculator {

public int add(int a, int b) {

return a + b;

}

public int subtract(int a, int b) {

return a - b;

}

}

JUnit test class:

import org.junit.Test;

import static org.junit.Assert.\*;

public class CalculatorTest {

@Test

public void testAdd() {

Calculator calc = new Calculator();

assertEquals(5, calc.add(2, 3));

}

@Test

public void testSubtract() {

Calculator calc = new Calculator();

assertEquals(1, calc.subtract(3, 2));

}

}

**Exercise 3: Assertions in JUnit**

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: AAA Pattern, Setup and Teardown**

import org.junit.Before;

import org.junit.After;

import org.junit.Test;

import static org.junit.Assert.\*;

public class CalculatorFixtureTest {

private Calculator calc;

@Before

public void setUp() {

// Arrange

calc = new Calculator();

}

@After

public void tearDown() {

calc = null;

}

@Test

public void testAdd() {

// Act

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

// Assert

assertEquals(5, result);

}

@Test

public void testSubtract() {

int result = calc.subtract(5, 2);

assertEquals(3, result);

}

}