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

**package** com.cts.exercise1;

**public** **class** Calculator {

**public** **int** add(**int** a, **int** b) {

**return** a + b;

}

**public** **int** multiply(**int** a, **int** b) {

**return** a \* b;

}

}

**package** com.cts.exercise1;

**import** org.junit.jupiter.api.BeforeEach;

**import** org.junit.jupiter.api.AfterEach;

**import** org.junit.jupiter.api.Test;

**public** **class** CalculatorTest {

**private** Calculator calculator;

@BeforeEach

**public** **void** setUp() {

System.***out***.println("Setting up before test...");

calculator = **new** Calculator();

}

@AfterEach

**public** **void** tearDown() {

System.***out***.println("Cleaning up after test...");

calculator = **null**;

}

@Test

**public** **void** testAddition() {

**int** result = calculator.add(3, 7);

**if** (result == 10) {

System.***out***.println("testAddition passed");

} **else** {

System.***out***.println("testAddition failed: Expected 10, got " + result);

}

}

@Test

**public** **void** testMultiplication() {

**int** result = calculator.multiply(4, 5);

**if** (result == 20) {

System.***out***.println("testMultiplication passed");

} **else** {

System.***out***.println("testMultiplication failed: Expected 20, got " + result);

}

}

}

Output

A screenshot of a computer

AI-generated content may be incorrect.

Project structure:

A screenshot of a computer program

AI-generated content may be incorrect.