**Exercise 1: Setting Up Junit**

**Scenario** : You need to set up JUnit in your Java project to start writing unit tests.

**1. Create a New Maven Project in NetBeans 8.2**

1. **Open NetBeans 8.2.**
2. **Go to File → New Project.**
3. **Select:**
   * **Category: Maven**
   * **Project Type: Java Application**
4. **Click Next.**
5. **Provide the following:**
   * **GroupId: com.example**
   * **ArtifactId: Junit\_Testing**
6. **Click Finish to generate the project.**

**2. Add JUnit Dependency to pom.xml**

1. **In the Projects window, expand the project and double-click pom.xml.**
2. **Add the following inside the <dependencies> section:**

**xml**

**<dependency>**

**<groupId>junit</groupId>**

**<artifactId>junit</artifactId>**

**<version>4.13.2</version>**

**<scope>test</scope>**

**</dependency>**

1. **Save the file (Ctrl + S).**
2. **Right-click the project → Select Build with Dependencies to download JUnit.**

**3. Create Application Code (Calculator.java)**

1. **Right-click Source Packages → com.example → New → Java Class.**
2. **Name it Calculator, click Finish.**

**package com.example;**

**public class Calculator {**

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

**return a + b;**

**}**

**}**

**4. Create Test Code (CalculatorTest.java)**

1. **Right-click Test Packages → com.example → New → Java Class.**
2. **Name it CalculatorTest, click Finish.**

**package com.example;**

**import org.junit.Test;**

**import static org.junit.Assert.assertEquals;**

**public class CalculatorTest {**

**@Test**

**public void testAdd() {**

**Calculator calc = new Calculator();**

**int result = calc.add(3, 4);**

**assertEquals(7, result); // Test passes**

**}**

**}**

**5. Verify Project Structure**

**Junit\_Testing/**

**├── src/**

**│ ├── main/java/com/example/Calculator.java**

**│ └── test/java/com/example/CalculatorTest.java**

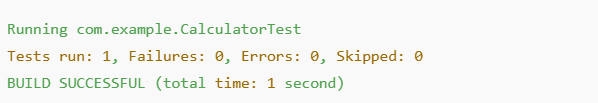
**├── pom.xml**

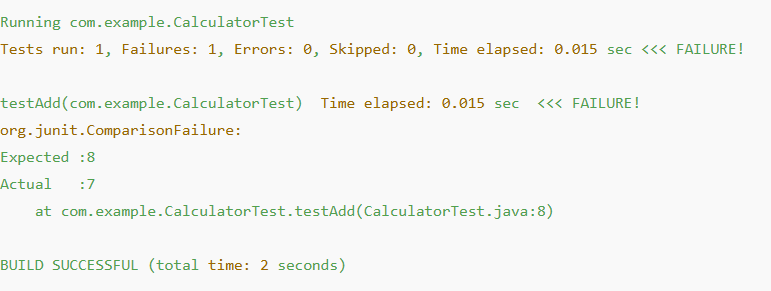
**6. Running the Test**

1. **Right-click the project in NetBeans → Select Test.**
2. **Or, right-click CalculatorTest.java → Choose Test File.**

**Output :**

**1.If the test passed:**



**2.If the test failed:**