JUnit Testing Exercises

Exercise 1: Setting Up JUnit

Scenario:

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

Steps:

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

```
<dependency>
<groupId>junit</groupId>
<artifactId>junit</artifactId>
<version>4.13.2</version>
<scope>test</scope>
</dependency>
```

3. Create a new test class in your project.

Project Structure:

```
junit-example
  v # com.example

    I Calculator.java

          > @ Calculator
  > # src/main/resources
  src/test/java
    > # com.example
  > # src/test/resources
  > March JRE System Library [JavaSE-1.8]
  > 📠 junit-4.13.2.jar - C:\Users\swethaganesh\.m2\repository\juni
     > 📠 hamcrest-core-1.3.jar - C:\Users\swethaganesh\.m2\reposito
     > hamcrest-2.2.jar - C:\Users\swethaganesh\.m2\repository\or
  > 🗁 src
  > 🗁 target
    pom.xml
> 📂 SingletonPattern
```

POM.XML:

```
<?xml version="1.0" encoding="UTF-8"?>
project xmlns="http://maven.apache.org/POM/4.0.0"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation = "http://maven.apache.org/POM/4.0.0
    https://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <groupId>com.example</groupId>
  <artifactId>junit-example</artifactId>
  <version>0.0.1-SNAPSHOT</version>
  <dependencies>
    <dependency>
      <groupId>junit
      <artifactId>junit</artifactId>
      <version>4.13.2</version>
      <scope>test</scope>
    </dependency>
    <dependency>
      <groupId>org.hamcrest</groupId>
      <artifactId>hamcrest</artifactId>
      <version>2.2</version>
    </dependency>
  </dependencies>
</project>
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. assert Equals;
public class CalculatorTest {
  @Test
  public void testAdd() {
     Calculator calc = new Calculator();
     int result = calc.add(2, 3);
     assertEquals(5, result); // \checkmark Test passes if 2+3=5
  }
```

OUTPUT:

