

### 3.11 Assisted Practice:

#### 4. Write a program to demonstrate nested and repeated tests

##### Source Code:

###### # Calculator.java

```
package com.ecommerce.tests;

public class Calculator {
    public int add(int a, int b) {
        return a + b;
    }
}
```

###### # NestedCases.java

```
package com.ecommerce.tests;

import org.junit.jupiter.api.*;
import org.junit.jupiter.api.AfterAll;
import org.junit.jupiter.api.BeforeAll;
import org.junit.jupiter.api.Test;
import org.junit.platform.runner.JUnitPlatform;
import org.junit.runner.RunWith;

@DisplayName("JUnit 5 Nested Example")
@RunWith(JUnitPlatform.class)
public class NestedCases {

    @BeforeAll
    static void beforeAll() {
        System.out.println("Before all test methods");
    }

    @BeforeEach
    void beforeEach() {
        System.out.println("Before each test method");
    }

    @AfterEach
    void afterEach() {
        System.out.println("After each test method");
    }

    @AfterAll
    static void afterAll() {
        System.out.println("After all test methods");
    }

    @Nested
    @DisplayName("Tests for the method A")
    class A {

        @BeforeEach
        void beforeEach() {
            System.out.println("Before each test method of the A class");
        }
    }
}
```

```

        @AfterEach
        void afterEach() {
            System.out.println("After each test method of the A class");
        }

        @Test
        @DisplayName("Example test for method A")
        void sampleTestForMethodA() {
            System.out.println("Example test for method A");
        }

        @Nested
        @DisplayName("When X is true")
        class WhenX {

            @BeforeEach
            void beforeEach() {
                System.out.println("Before each test method of the WhenX
class");
            }

            @AfterEach
            void afterEach() {
                System.out.println("After each test method of the WhenX
class");
            }

            @Test
            @DisplayName("Example test for method A when X is true")
            void sampleTestForMethodAWhenX() {
                System.out.println("Example test for method A when X is
true");
            }
        }
    }
}

```

## # RepeatedTests.java

```

package com.ecommerce.tests;

import org.junit.jupiter.api.*;
import org.junit.jupiter.api.AfterAll;
import org.junit.jupiter.api.BeforeAll;
import org.junit.jupiter.api.Test;
import org.junit.platform.runner.JUnitPlatform;
import org.junit.runner.RunWith;
import static org.junit.jupiter.api.Assertions.assertEquals;

@DisplayName("JUnit 5 Repeated Tests Example")
@RunWith(JUnitPlatform.class)
public class RepeatedTests {

    @BeforeAll
    public static void init(){
        System.out.println("Before All init() method called");
    }

    @BeforeEach
    public void initEach(){
        System.out.println("Before Each initEach() method called");
    }
}

```

```

@Test
@DisplayName("Add operation test")
@RepeatedTest(5)
void addNumber(TestInfo testInfo) {
    Calculator calculator = new Calculator();
    Assertions.assertEquals(2, calculator.add(1, 1), "1 + 1
should equal 2");
    System.out.println("===addNumber testcase executed===");
}

@AfterEach
public void cleanUpEach() {
    System.out.println("After Each cleanUpEach() method
called");
}

@AfterAll
public static void cleanUp() {
    System.out.println("After All cleanUp() method called");
}
}

```

## # pom.xml

```

<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>JUnitNested</groupId>
    <artifactId>JUnitNested</artifactId>
    <version>0.0.1-SNAPSHOT</version>

    <dependencies>

        <dependency>
            <groupId>org.junit.jupiter</groupId>
            <artifactId>junit-jupiter-engine</artifactId>
            <version>5.4.2</version>
        </dependency>

        <dependency>
            <groupId>org.junit.platform</groupId>
            <artifactId>junit-platform-launcher</artifactId>
            <version>1.2.0</version>
        </dependency>

















    </dependencies>

</project>

```




## Output #1:



JUnitNested (15-Jun-2023 11:16:18 pm)

| Element   | Covera...   | Covered Ins... | Missed Instr... | Total Instruc... |
|---|---|----------------|-----------------|------------------|
| ▼  JUnitNested         |  100.0 % | 96             | 0               | 96               |
| ▼  src/main/java       |  100.0 % | 7              | 0               | 7                |
| ▼  com.ecommerce.tests |  100.0 % | 7              | 0               | 7                |
| >  Calculator.java     |  100.0 % | 7              | 0               | 7                |
| ▼  src/test/java       |  100.0 % | 89             | 0               | 89               |
| ▼  com.ecommerce.tests |  100.0 % | 89             | 0               | 89               |
| >  NestedCases.java    |  100.0 % | 55             | 0               | 55               |
| >  RepeatedTests.java  |  100.0 % | 34             | 0               | 34               |
|   |   |                |                 |                  |

## Output #2:

Finished after 0.351 seconds

Runs: 13/8  Errors: 0  Failures: 0 

>  com.ecommerce.tests.RepeatedT  Failure Trace 