

BÁO CÁO LAB 4 - KIỂM THỬ NÂNG CAO (TESTNG)

Họ và tên: Bùi Tiến Sỹ

MSSV: PS32117

Môn học: SOF304 – Kiểm thử nâng cao

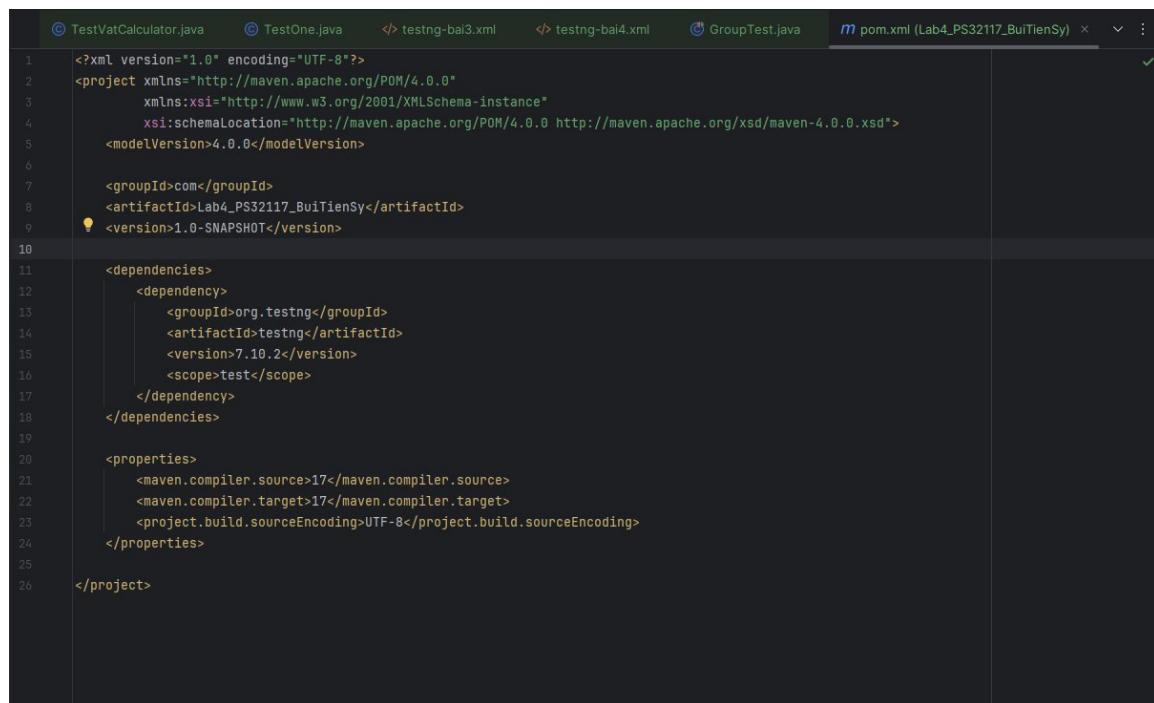
I. Mục tiêu

- Hiểu được khái niệm TestNG
- Biết cách tạo test case bằng TestNG
- Sử dụng Test Suite và Test Group

II. Nội dung thực hiện

Bài 1: Cài đặt TestNG

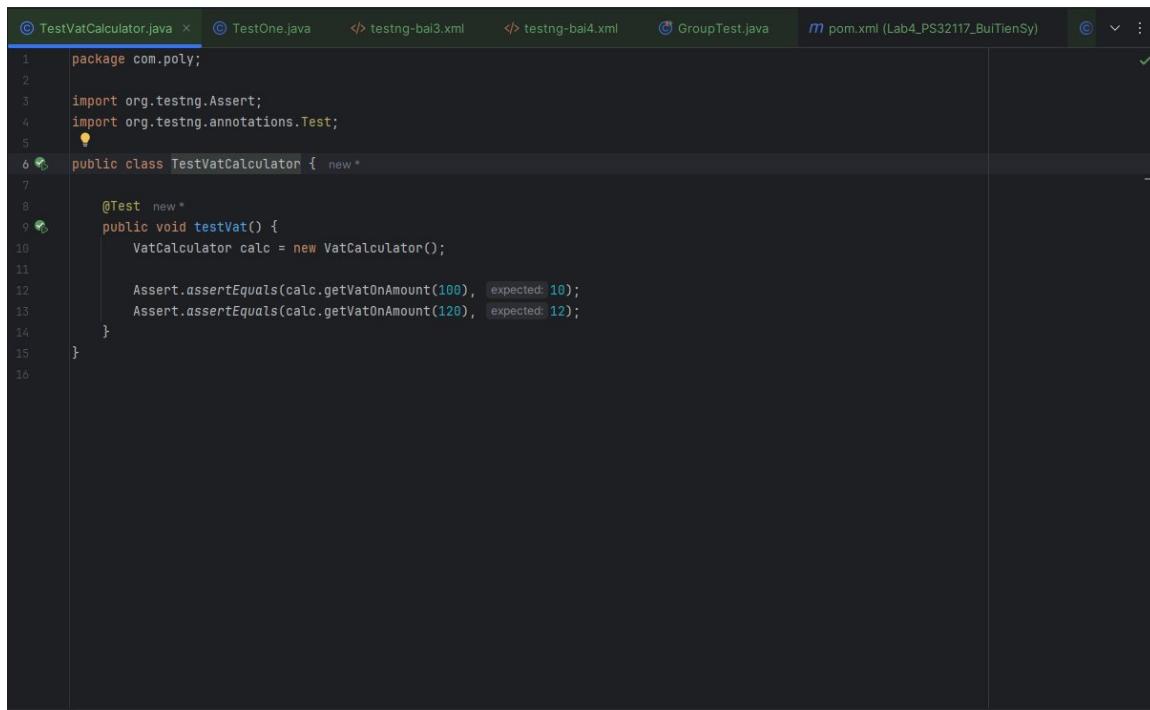
Cài đặt TestNG thông qua Maven bằng cách thêm dependency vào file pom.xml.



```
<?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 http://maven.apache.org/xsd/maven-4.0.0.xsd">
<modelVersion>4.0.0</modelVersion>
<groupId>com</groupId>
<artifactId>Lab4_PS32117_BuiTienSy</artifactId>
<version>1.0-SNAPSHOT</version>
<dependencies>
    <dependency>
        <groupId>org.testng</groupId>
        <artifactId>testng</artifactId>
        <version>7.10.2</version>
        <scope>test</scope>
    </dependency>
</dependencies>
<properties>
    <maven.compiler.source>17</maven.compiler.source>
    <maven.compiler.target>17</maven.compiler.target>
    <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
</properties>
</project>
```

Bài 2: Tạo lớp kiểm thử TestNG

Tạo class VatCalculator để tính VAT 10% và tạo class TestVatCalculator để kiểm thử.

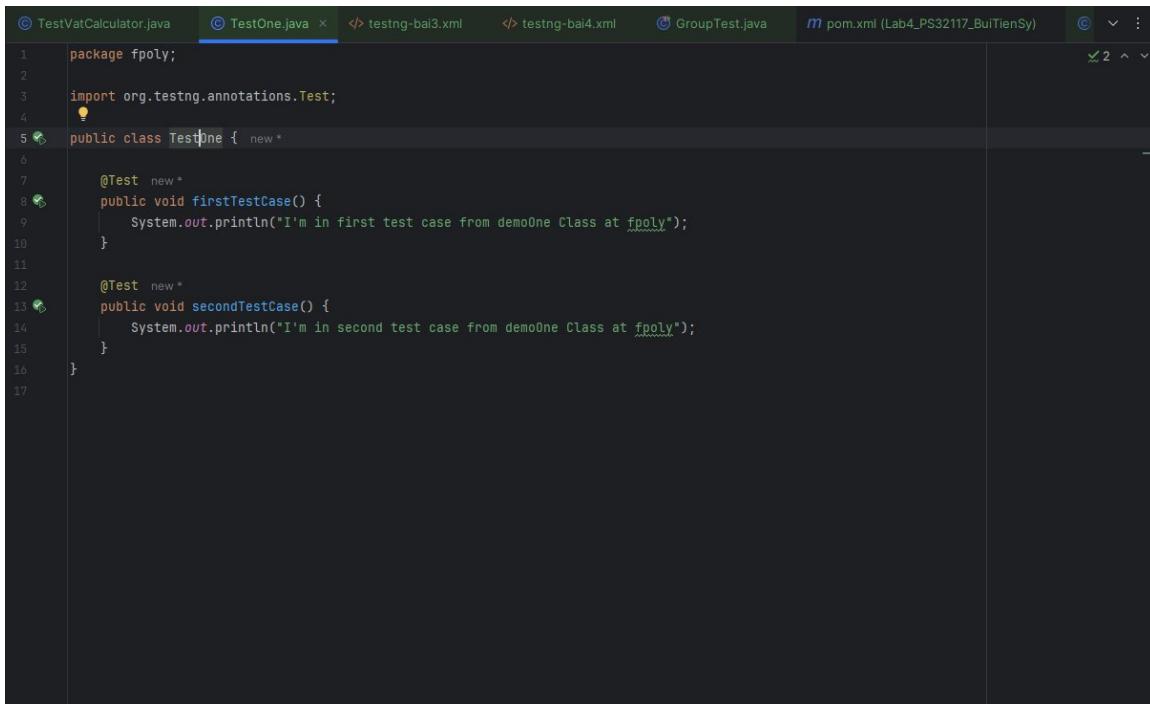


The screenshot shows a Java code editor with the following code:

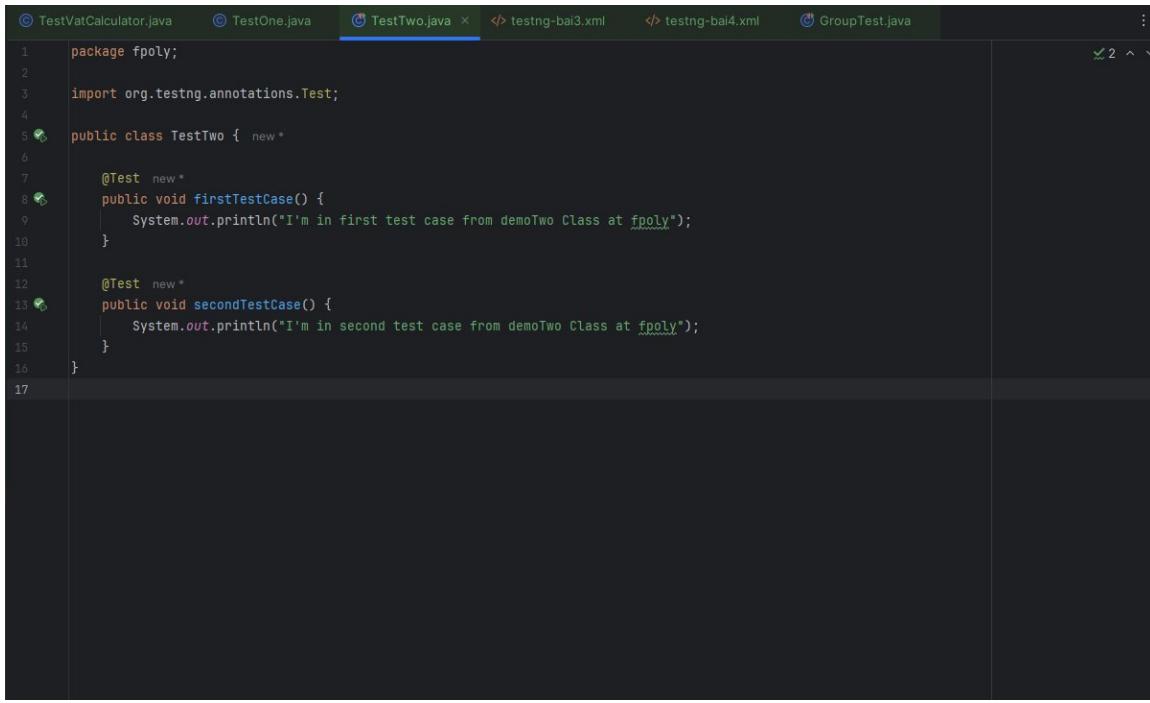
```
1 package com.poly;
2
3 import org.testng.Assert;
4 import org.testng.annotations.Test;
5
6 public class TestVatCalculator {
7     new *
8     @Test
9     public void testVat() {
10         VatCalculator calc = new VatCalculator();
11
12         Assert.assertEquals(calc.getVatOnAmount(100), 10);
13         Assert.assertEquals(calc.getVatOnAmount(120), 12);
14     }
15 }
16
```

The code defines a class named `TestVatCalculator` with a single test method `testVat`. The test method creates a new instance of `VatCalculator` and uses `Assert.assertEquals` to verify that the VAT calculated for amounts 100 and 120 is 10 and 12 respectively. The code editor interface includes tabs for other files like `TestOne.java`, `testng-bai3.xml`, `testng-bai4.xml`, `GroupTest.java`, and `pom.xml`.

Bài 3: Thực thi Suite Test



```
1 package fpoly;
2
3 import org.testng.annotations.Test;
4
5 public class TestOne { new *
6
7     @Test new *
8     public void firstTestCase() {
9         System.out.println("I'm in first test case from demoOne Class at fpoly");
10    }
11
12     @Test new *
13     public void secondTestCase() {
14         System.out.println("I'm in second test case from demoOne Class at fpoly");
15    }
16 }
17
```



```
1 package fpoly;
2
3 import org.testng.annotations.Test;
4
5 public class TestTwo { new *
6
7     @Test new *
8     public void firstTestCase() {
9         System.out.println("I'm in first test case from demoTwo Class at fpoly");
10    }
11
12     @Test new *
13     public void secondTestCase() {
14         System.out.println("I'm in second test case from demoTwo Class at fpoly");
15    }
16 }
17
```

The screenshot shows a code editor interface with a dark theme. At the top, there is a tab bar with several tabs: 'TestVatCalculator.java', 'TestOne.java', 'TestTwo.java', 'testng-bai3.xml' (which is currently selected), 'testng-bai4.xml', and 'GroupTest.java'. Below the tabs, the main area displays the XML code for a TestNG suite. The code is as follows:

```
<!DOCTYPE suite SYSTEM "https://testng.org/testng-1.0.dtd">
<suite name="Suite Bai 3">
    <test name="All Tests">
        <packages>
            <package name="fpolly"/>
        </packages>
    </test>
</suite>
```

Bài 4: Test Groups trong TestNG

The screenshot shows an IDE interface with two tabs open: GroupTest.java and testng-bai4.xml.

GroupTest.java:

```
1 package fpoly;
2
3 import org.testng.Assert;
4 import org.testng.annotations.Test;
5
6 public class GroupTest {
7     // Regression: Test hồi quy
8     @Test(groups = {"Regression"})
9     public void testCase1() {
10         System.out.println("Test case 1 - Regression");
11         Assert.assertTrue(condition: true);
12     }
13     // Smoke: Test nhanh
14     @Test(groups = {"Smoke"})
15     public void testCase2() {
16         System.out.println("Test case 2 - Smoke");
17         Assert.assertTrue(condition: true);
18     }
19
20     @Test(groups = {"Regression"})
21     public void testCase3() {
22         System.out.println("Test case 3 - Regression");
23         Assert.assertTrue(condition: true);
24     }
25     // Sanity: Test Kiểm thử cơ bản
26     @Test(groups = {"Sanity"})
27     public void testCase4() {
28         System.out.println("Test case 4 - Sanity");
29         Assert.assertTrue(condition: true);
30     }
31 }
```

testng-bai4.xml:

```
<!DOCTYPE suite SYSTEM "https://testng.org/testng-1.0.dtd">
<suite name="Suite Bai 4">
    <test name="RegressionTest">
        <groups>
            <run>
                <include name="Regression"/>
            </run>
        </groups>
        <classes>
            <class name="fpoly.GroupTest"/>
        </classes>
    </test>
</suite>
```

The screenshot shows an IDE interface with two tabs open: GroupTest.java and testng-bai4.xml.

GroupTest.java:

```
1 package fpoly;
2
3 import org.testng.Assert;
4 import org.testng.annotations.Test;
5
6 public class GroupTest {
7     // Regression: Test hồi quy
8     @Test(groups = {"Regression"})
9     public void testCase1() {
10         System.out.println("Test case 1 - Regression");
11         Assert.assertTrue(condition: true);
12     }
13     // Smoke: Test nhanh
14     @Test(groups = {"Smoke"})
15     public void testCase2() {
16         System.out.println("Test case 2 - Smoke");
17         Assert.assertTrue(condition: true);
18     }
19
20     @Test(groups = {"Regression"})
21     public void testCase3() {
22         System.out.println("Test case 3 - Regression");
23         Assert.assertTrue(condition: true);
24     }
25     // Sanity: Test Kiểm thử cơ bản
26     @Test(groups = {"Sanity"})
27     public void testCase4() {
28         System.out.println("Test case 4 - Sanity");
29         Assert.assertTrue(condition: true);
30     }
31 }
```

testng-bai4.xml:

```
<!DOCTYPE suite SYSTEM "https://testng.org/testng-1.0.dtd">
<suite name="Suite Bai 4">
    <test name="RegressionTest">
        <groups>
            <run>
                <include name="Regression"/>
            </run>
        </groups>
        <classes>
            <class name="fpoly.GroupTest"/>
        </classes>
    </test>
</suite>
```

III. Kết luận

Qua bài thực hành Lab 4, em đã hiểu cách sử dụng TestNG để viết test case, sử dụng suite test và group test nhằm quản lý và thực thi kiểm thử hiệu quả.