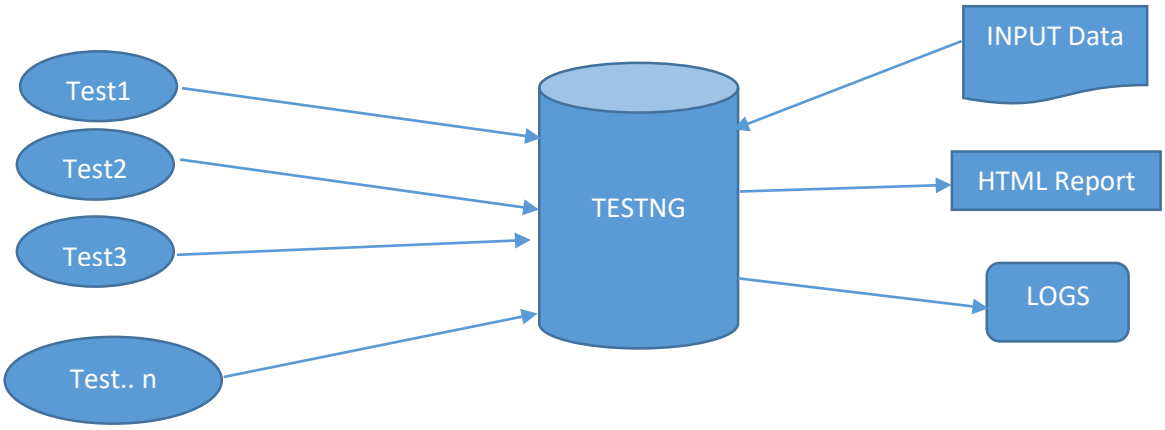
Selenium TESTNG

- TESTNG – NG – Next Generation
- Is an automation testing framework
- It is concept based out of JUnit tool that uses “annotations” to refer a test
- Using TESTNG, you may generate a report that contains execution status of test cases
- TESTNG gives full control over the test cases
- You may use set of pre-requisite before running a script / test
- It gives annotations that does grouping, sequencing, parametrizing, etc
- You may define multiple test cases in a single class using TESTNG
- You may create multiple classes & execute all together using TESTNG



Advantages:

1. Annotations are easier to learn & work
2. It supports HTML report
3. Generates lots of its own
4. Enables group-based execution
5. Supports additional levels of before & after test execution
6. Parallel test execution of test cases

Features of TESTNG:

1. Multiple “Before” & “After” annotations options (BeforeMethod, AfterMethod, BeforeTest, AfterTest, BeforeSuite, AfterSuite, BeforeGroup, AfterGroup, BeforeClass & AfterClass)
2. “TEST” annotation for the test cases
3. XML-based test configuration
4. Dependent methods offered by TestNG
5. Group Test cases & also create Group of groups
6. Parametrization of test methods
7. Data-driven testing
8. Better reporting

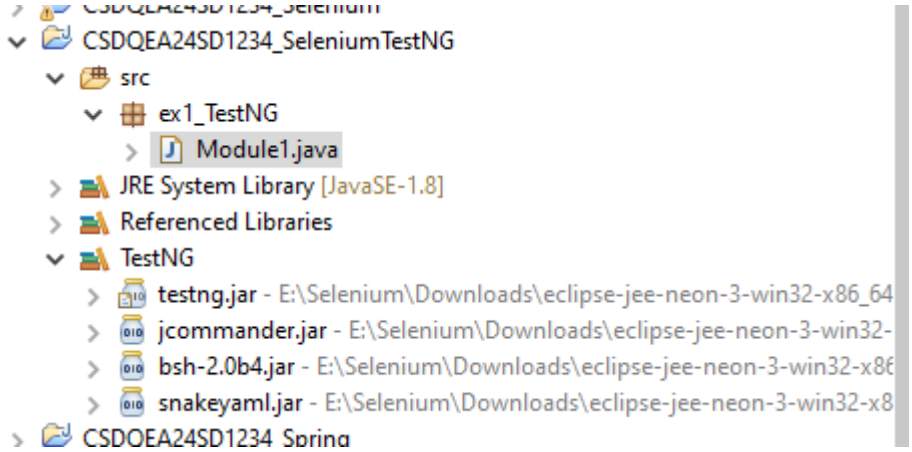
How to use TESTNG in Eclipse?

Three ways:

1. Using 'Eclipse Market Place"
2. Using "Install New Software"
3. Download external TestNG & build it

Example 1:

Folder Structure:



Class 1:

```
package ex1_TestNG;

import org.testng.annotations.AfterClass;
import org.testng.annotations.AfterMethod;
import org.testng.annotations.BeforeClass;
import org.testng.annotations.BeforeMethod;
import org.testng.annotations.DataProvider;
import org.testng.annotations.Test;

public class Module1 {

    @DataProvider(name="newData")
    public Object[][] dataSupplier(){
        Object[][] data = {{1, "Two"}, {3, "Four"},
{5, "Six"}};
        return data;
```

```
    }

    @AfterClass
    public void closeURL(){
        System.out.println("This is AfterClass - To
close the URL");
    }

    @BeforeClass
    public void openURL(){
        System.out.println("This is BeforeClass -
To open the URL");
    }

    @AfterMethod
    public void takeScreenShot(){
        System.out.println("This is AfterMethod -
To take Screen Shot");
    }

    @BeforeMethod
    public void prepareData(){
        System.out.println("This is BeforeMethod -
To prepare Test Data");
    }

    @Test(priority=1, enabled=false)
    public void TestCase2(){
        System.out.println("This is TestCase 2");
    }

    @Test(priority=2, dataProvider="newData")
    public void TestCase1(int a, String b){
//      System.out.println("This is TestCase 1");
        System.out.println(a + " .. TestCase 1.. "
+ b);
    }
```

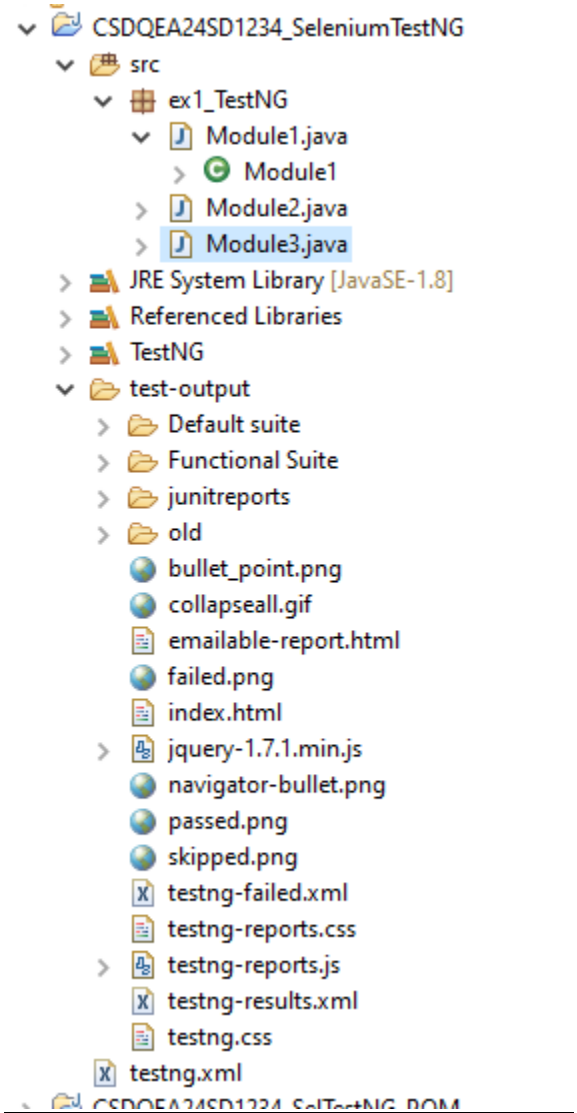
```
}
```

Output:

```
This is BeforeClass - To open the URL
This is BeforeMethod - To prepare Test Data
1 .. TestCase 1.. Two
This is AfterMethod - To take Screen Shot
This is BeforeMethod - To prepare Test Data
3 .. TestCase 1.. Four
This is AfterMethod - To take Screen Shot
This is BeforeMethod - To prepare Test Data
5 .. TestCase 1.. Six
This is AfterMethod - To take Screen Shot
This is AfterClass - To close the URL
PASSED: TestCase1(1, "Two")
PASSED: TestCase1(3, "Four")
PASSED: TestCase1(5, "Six")

===============================================
    Default test
    Tests run: 3, Failures: 0, Skips: 0
===============================================


===============================================
Default suite
Total tests run: 3, Failures: 0, Skips: 0
```

Example 2:

Folder Structure:



Class 1:

```
package ex1_TestNG;

import org.testng.annotations.AfterClass;
import org.testng.annotations.AfterMethod;
import org.testng.annotations.BeforeClass;
import org.testng.annotations.BeforeMethod;
import org.testng.annotations.DataProvider;
import org.testng.annotations.Test;

public class Module1 {

    @DataProvider(name="newData")
    public Object[][] dataSupplier(){
```

```
        Object[][] data = {{1, "Two"}, {3, "Four"},
{5, "Six"}};
        return data;
    }

    @AfterClass
    public void closeURL(){
        System.out.println("This is AfterClass - To
close the URL");
    }

    @BeforeClass
    public void openURL(){
        System.out.println("This is BeforeClass -
To open the URL");
    }

    @AfterMethod
    public void takeScreenShot(){
        System.out.println("This is AfterMethod -
To take Screen Shot");
    }

    @BeforeMethod
    public void prepareData(){
        System.out.println("This is BeforeMethod -
To prepare Test Data");
    }

    @Test(priority=1, groups={"Group1","Group2"})
    public void TestCase2(){
        System.out.println("This is TestCase2 from
Module1-Group1&Group2");
    }

    @Test(priority=2, groups={"Group2"})
    public void TestCase1(){
```

```
        System.out.println("This is TestCase1 from
Module1-Group2");
//      System.out.println(a + " .. TestCase 1.. "
+ b);
    }
}
```

Class 2:

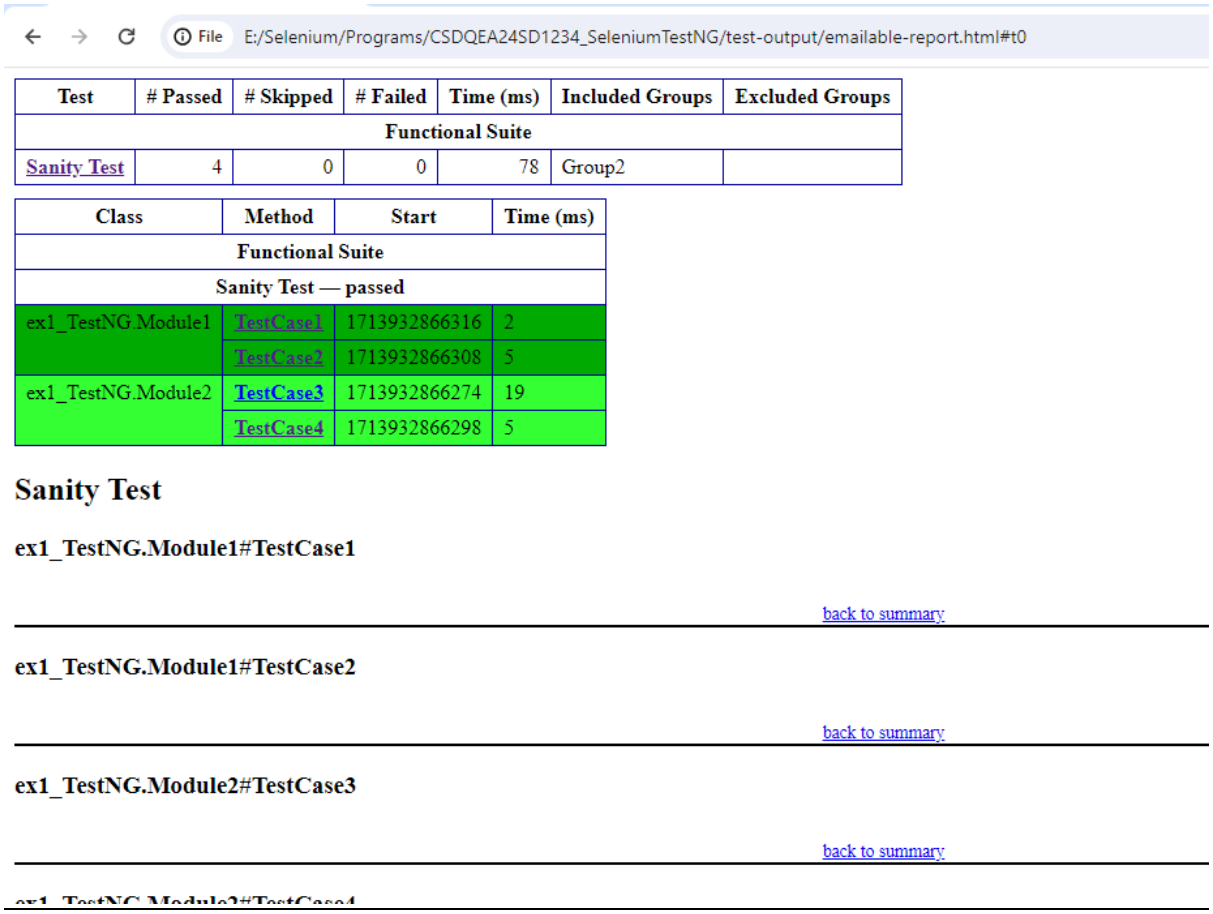
```
package ex1_TestNG;

import org.testng.annotations.Test;

public class Module2 {

    @Test(description="TestCase3",groups={"Group2"}
)
    public void TestCase3(){
        System.out.println("This is TestCase3 from
Module2-Group2");
    }

    @Test(dependsOnMethods={"TestCase3"},groups={"G
roup2"})
    public void TestCase4(){
        System.out.println("This is TestCase4 from
Module2-Group2");
    }
}
```

Class 3:

```
package ex1_TestNG;

import org.testng.annotations.Test;

public class Module3 {
```

```
    @Test(groups={"Group1"})
    public void TestCase5(){
        System.out.println("This is TestCase5 from
Module3-Group1");
    }

    @Test(groups={"Group2"})
    public void TestCase6(){
        System.out.println("This is TestCase6 from
Module3-Group2");
    }
}
```

HTML Reports:



File E:/Selenium/Programs/CSDQEA24SD1234_SeleniumTestNG/test-output/emailable-report.html#t0

Test	# Passed	# Skipped	# Failed	Time (ms)	Included Groups	Excluded Groups
Functional Suite						
Sanity Test	4	0	0	78	Group2	

Class	Method	Start	Time (ms)
Functional Suite			
Sanity Test — passed			
ex1_TestNG.Module1	TestCase1	1713932866316	2
	TestCase2	1713932866308	5
ex1_TestNG.Module2	TestCase3	1713932866274	19
	TestCase4	1713932866298	5

Sanity Test

ex1_TestNG.Module1#TestCase1

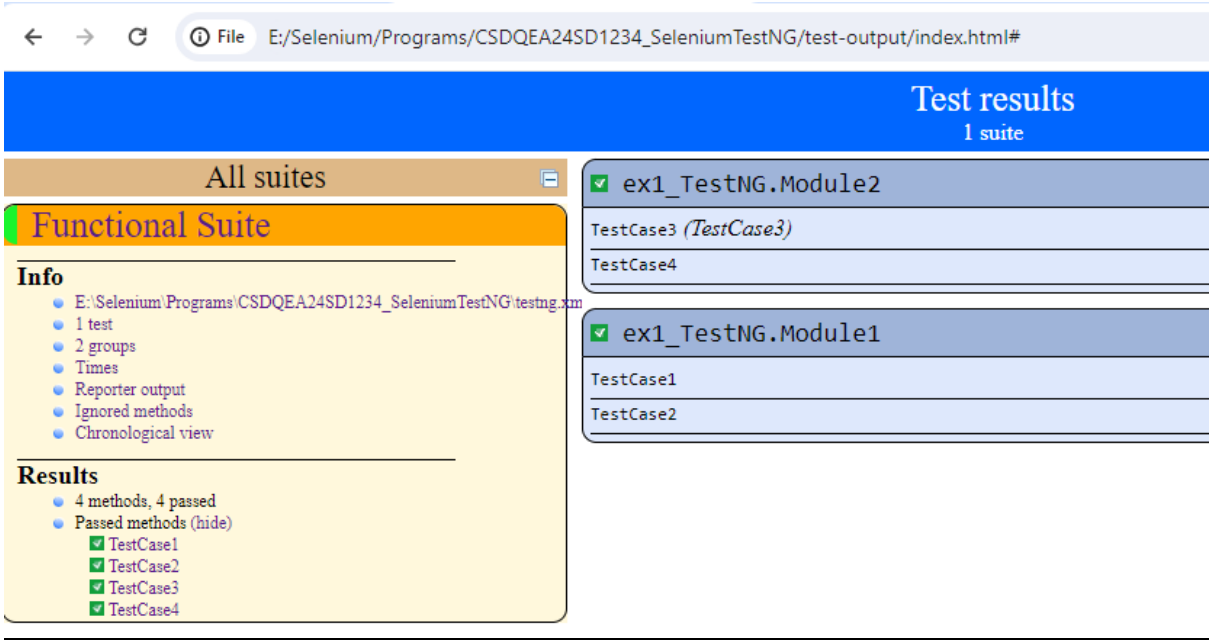
back to summary

ex1_TestNG.Module1#TestCase2

back to summary

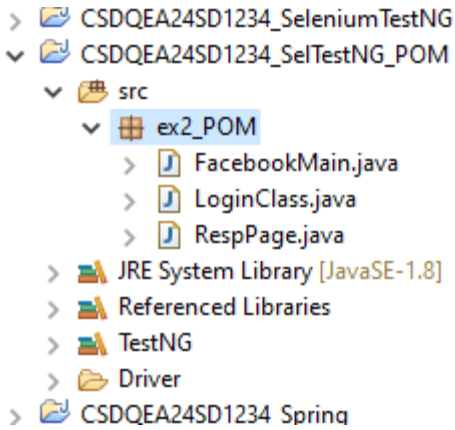
ex1_TestNG.Module2#TestCase3

back to summary



Example 3 (POM with TestNG:

Folder Structure:



Class 1 (Super Class):

```
package ex2_POM;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;

public class LoginClass {
WebDriver driver;

    By email = By.id("email");
```

```
    By pwd = By.id("pass");
    By login = By.name("login");

    public LoginClass(WebDriver driver){
        this.driver = driver;
    }

    public void setEmail(String emailId){

    driver.findElement(email).sendKeys(emailId);
    }

    public void setPwd(String password){
        driver.findElement(pwd).sendKeys(password);
    }

    public void clickLogin(){
        driver.findElement(login).click();
    }

    public void userLogin(String emailId, String
pass){
        this.setEmail(emailId);
        this.setPwd(pass);
        this.clickLogin();
    }
}
```

Class 2 (Super Class):

```
package ex2_POM;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;

public class RespPage {
```

```
    WebDriver driver;

    By forgotPwd = By.linkText("Forgotten
account?");

    public RespPage(WebDriver driver){
        this.driver = driver;
    }

    public void clickForgotPwd(){
        driver.findElement(forgotPwd).click();
    }
}
```

Class 3 (Main Class:

```
package ex2_POM;

import java.util.concurrent.TimeUnit;

import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.testng.annotations.AfterTest;
import org.testng.annotations.BeforeTest;
import org.testng.annotations.Test;

public class FacebookMain {

    WebDriver driver;
    LoginClass lc;
    RespPage rp;

    @BeforeTest
    public void setUp(){

    System.setProperty("webdriver.chrome.driver",
```

```
"E:\\Selenium\\Programs\\CSDQEA24SD1234_SelTestNG_POM\\Driver\\chromedriver.exe");
        driver = new ChromeDriver();
        driver.manage().window().maximize();
        driver.get("https://www.facebook.com/");

    driver.manage().timeouts().implicitlyWait(10, TimeUnit.SECONDS);

    }

    @Test
    public void loginPage() throws InterruptedException{
        Thread.sleep(3000);
        lc = new LoginClass(driver);
        lc.userLogin("sada@gmail.com", "addr");
    }

    @Test
    public void respPage() throws InterruptedException{
        Thread.sleep(3000);
        rp = new RespPage(driver);
        rp.clickForgotPwd();
    }

    @AfterTest
    public void closeBrowser() throws InterruptedException{
        Thread.sleep(3000);
        driver.close();
    }
}
```

Output:

```
PASSED: loginPage
```

```
PASSED: respPage

===============================================
    Default test
    Tests run: 2, Failures: 0, Skips: 0
===============================================


===============================================
Default suite
Total tests run: 2, Failures: 0, Skips: 0
===============================================
```