iamneo

TestNG

Unit Testing

- ✔ UNIT TESTING is a type of software testing where individual units or components of a software are tested. The purpose is to validate that each unit of the software code performs as expected. Unit Testing is done during the development (coding phase) of an application by the developers. Unit Tests isolate a section of code and verify its correctness. A unit may be an individual function, method, procedure, module, or object.

Advantages of Unit Testing

- ✔ Reduces Defects in the Newly developed features or reduces bugs when changing the existing functionality
- ✔ Reduces Cost of Testing as defects are captured in very early phase
- ✔ Improves design and allows better refactoring of code
- ✔ Unit Tests, when integrated with build gives the quality of the build as well

TestNG Annotations

TestNG Annotations are used to control the next method to be executed in the test script. TestNG annotations are defined before every method in the test code. In case any method is not prefixed with annotations, it will be ignored and not be executed as part of the test code.

Example

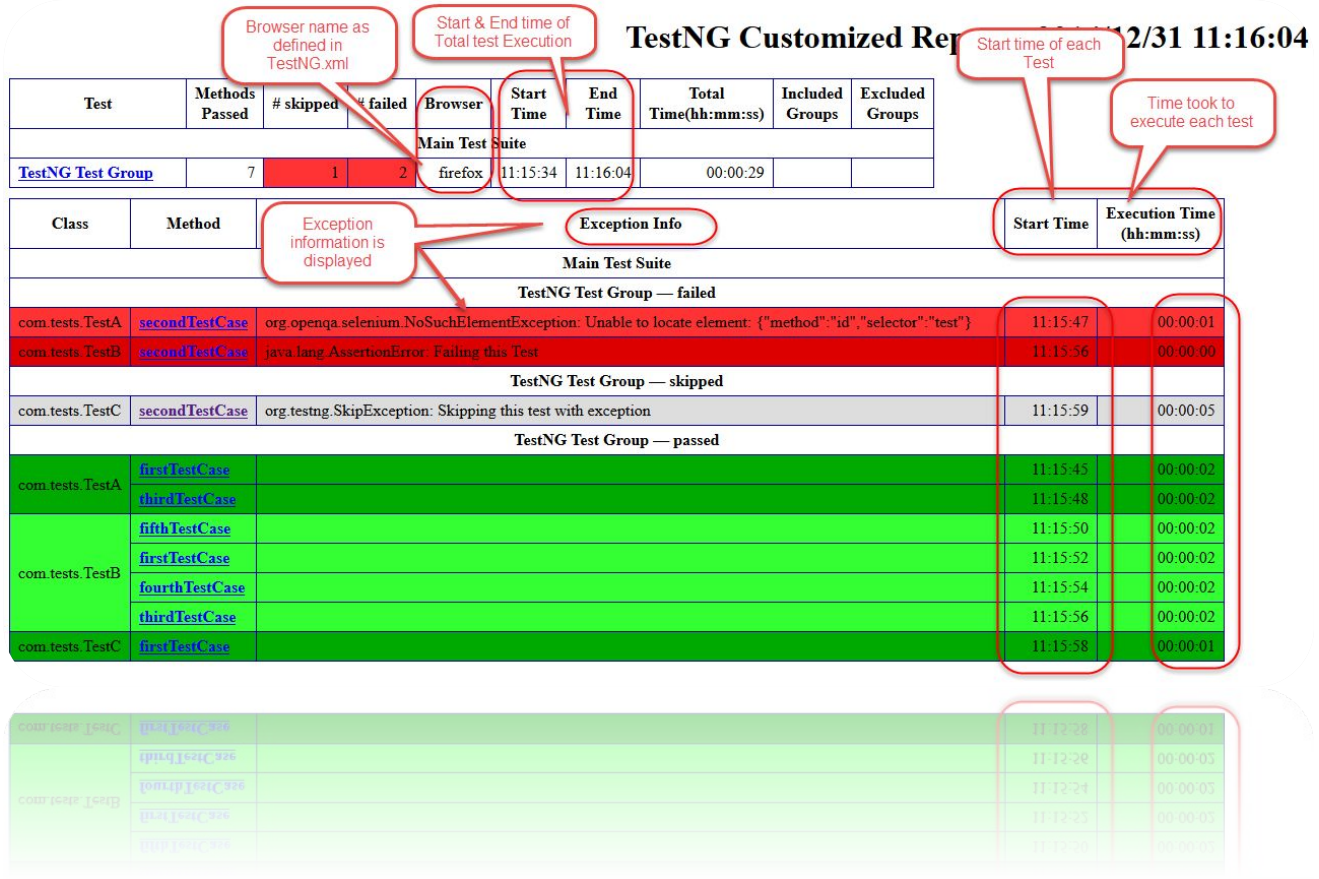
```
@Test
Public void facebook()
{
    driver.get(“https://facebook.com”);
    driver.getTitle();
}
```

Types of TestNG Annotations

- ✔ @BeforeMethod: This will be executed before every @test annotated method.
- ✔ @AfterMethod: This will be executed after every @test annotated method.
- ✔ @BeforeClass: This will be executed before first @Test method execution. It will be executed one only time throughout the test case.
- ✔ @AfterClass: This will be executed after all test methods in the current class have been run
- ✔ @BeforeTest: This will be executed before the first @Test annotated method. It can be executed multiple times before the test case.
- ✔ @AfterTest: A method with this annotation will be executed when all @Test annotated methods complete the execution of those classes inside the <test> tag in the TestNG.xml file.
- ✔ @BeforeSuite: It will run only once, before all tests in the suite are executed.
- ✔ @AfterSuite: A method with this annotation will run once after the execution of all tests in the suite is complete.
- ✔ @BeforeGroups: This method will run before the first test run of that specific group.
- ✔ @AfterGroups: This method will run after all test methods of that group complete their execution.

TestNG Reporting

- ✔ TestNG Reports are the default HTML reports which are generated once the test cases are executed using TestNG
- ✔ These reports help you to identify the information about test cases and the status of a project
- ✔ TestNG reports in Selenium have three methods passTest, failTest, and skipTest to check the data about test cases.



Testng Assertions

- ✔ TestNG asserts are the most frequently used methods in TestNG and are so common that it is hard to find a TestNG code without the asserts.
- ✔ TestNG asserts the tester decides whether the test was successful or not, along with the exceptions.

Syntax :

```
Assert.Method( actual, expected)
```

Example

```
String expectedTitle = ”Facebook";
String originalTitle = driver.getTitle();
Assert.assertEquals(originalTitle, expectedTitle);
```

Testng Suite

- ✔ A test suite is a collection of test cases intended to test a behavior or a set of behaviors of software program
- ✔ In TestNG, we cannot define a suite in testing source code, but it is represented by one XML file, as suite is the feature of execution
- ✔ It is defined by the <suite> tag.

Testng Parallel Execution

- ✔ Parallel execution, as the name suggests, is a process of running the test case parallelly rather than one after the other
- ✔ In parallel testing, the program's multiple parts (or modules) execute together, saving the testers a lot of time and effort
- ✔ The operating system's functionalities do this, but as a user, we need to trigger parallel execution through TestNG

Advantages of Parallel Testing :

1)Reduces Time

2)Allow Multi-Threaded Tests

Testng Priority Execution

- ✔ TestNG is a Testing framework, that covers different types of test designs like a unit test, functional test, end to end test, UI test and integration test.You can run a single or multiple test cases in your Testng code.If test priority is not defined while, running multiple test cases, TestNG assigns all @Test a priority as zero(0).

Syntax :

1) @Test (priority=1)

2) @Test (priority=2)

Maven Dependency for Selenium

- ✔ User can manually download JAR’s or dependencies and can add in the project.

However, if a user is working on a medium or large project with many modules and a big team, then Maven plays a vital role in project management. It is a challenging task to ensure that all the team members are using the same dependency version. This issue can be solved by standardizing the dependency version for all.