What is TestNG?

TestNG is an automation testing framework in which NG stands for "Next Generation". TestNG is inspired from JUnit which uses the annotations (@).

* • Using TestNG you can generate a proper report, and you can easily come to know how many test cases are passed, failed and skipped.
  1. • You can execute failed test case separately. For example. o Suppose, you have five test cases, one method is written for each test case (Assume that the program is written using the main method without using testNG). When you run this program first, three methods are executed successfully, and the fourth method is failed. Then correct the errors present in the fourth method, now you want to run only fourth method because first three methods are anyway executed successfully. This is not possible without using TestNG.
  2. • The TestNG provides an option, i.e., testng-failed.xml file in test-output folder. If you want to run only failed test cases means you run this XML file. It will execute only failed test cases.

Beside above concept, you will learn more on TestNG, like what are the Advantages of TestNG, how to create test methods using @test annotations, how to convert these classes into testing suite file and execute through the eclipse as well as from the command line.

* • Generate the report in a proper format including a number of test cases runs, the number of test cases passed, the number of test cases failed, and the number of test cases skipped.
* • Multiple test cases can be grouped more easily by converting them into testng.xml file. In which you can make priorities which test case should be executed first.
* • The same test case can be executed multiple times without loops just by using keyword called 'invocation count.'
* • Using testng, you can execute multiple test cases on multiple browsers, i.e., cross browser testing.
* • The testing framework can be easily integrated with tools like Maven, Jenkins, etc.
* • Annotations used in the testing are very easy to understand ex: @BeforeMethod, @AfterMethod, @BeforeTest, @AfterTest
* • WebDriver has no native mechanism for generating reports. TestNG can generate the report in a readable format

Advantages of TestNG over JUnit

There are three major advantages of TestNG over JUnit:

* • Annotations are easier to understand
* • Test cases can be grouped more easily
* • Parallel testing is possible

Summary of TestNG Annotations

**@BeforeSuite**: The annotated method will be run before all tests in this suite have run.

**@AfterSuite**: The annotated method will be run after all tests in this suite have run.

**@BeforeTest**: The annotated method will be run before any test method belonging to the classes inside the tag is run.

**@AfterTest**: The annotated method will be run after all the test methods belonging to the classes inside the tag have run.

**@BeforeGroups**: The list of groups that this configuration method will run before. This method is guaranteed to run shortly before the first test method that belongs to any of these groups is invoked.

**@AfterGroups**: The list of groups that this configuration method will run after. This method is guaranteed to run shortly after the last test method that belongs to any of these groups is invoked.

**@BeforeClass**: The annotated method will be run before the first test method in the current class is invoked.

**@AfterClass**: The annotated method will be run after all the test methods in the current class have been run.

**@BeforeMethod**: The annotated method will be run before each test method. **@AfterMethod**: The annotated method will be run after each test method.

**@Test**: The annotated method is a part of a test case

## Listeners In TestNG

## What is Listeners in TestNG?

Listener is defined as interface that modifies the default TestNG's behavior. As the name suggests Listeners "listen" to the event defined in the selenium script and behave accordingly. It is used in selenium by implementing Listeners Interface. It allows customizing TestNG reports or logs. There are many types of TestNG listeners available.

**Types of Listeners in TestNG**

There are many types of listeners which allows you to change the TestNG's behavior.

Below are the few TestNG listeners:

1. IAnnotationTransformer ,
2. IAnnotationTransformer2 ,
3. IConfigurable ,
4. IConfigurationListener ,
5. IExecutionListener,
6. IHookable ,
7. IInvokedMethodListener ,
8. IInvokedMethodListener2 ,
9. IMethodInterceptor ,
10. IReporter,
11. ISuiteListener,
12. ITestListener .

Above Interface are called TestNG Listeners. These interfaces are used in selenium to generate logs or customize the TestNG reports.