

TestNG Tutorial Playlist



TestNG Framework Tutorial | Complete Step by Step Tutorials

LambdaTest

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In this TestNG Framework Tutorial playlist, you will find a complete step-by-step guide to mastering the TestNG framework.

This playlist is designed to help both beginners and advanced learners understand the concepts of TestNG and how it works. Learn about TestNG annotations, test execution order, assertions, grouping, parameterization, and much more.

By the end of this playlist, you will have a solid understanding of TestNG and how to use it effectively to write robust and reliable automated tests.

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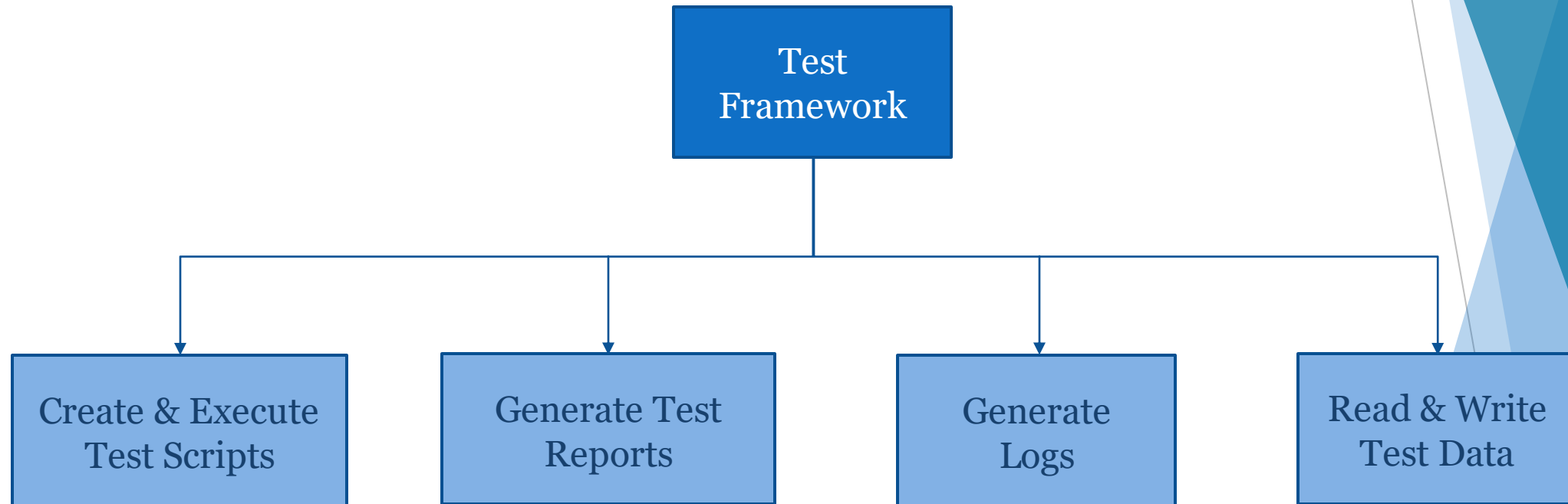
TestNG

Tutorial Playlist

1. TestNG Annotations
2. 1st Selenium Automated Test
3. TestNG Assertions
4. Parameterized Testing
5. Take Screenshot of Failed Test
6. Dynamic Wait Statements
7. Page Object Model
8. Parallel Testing & Data Providers
9. Cross Browser Testing & Selenium Grid
10. Geolocation Testing

▶ What Is TestNG

Core Functions of A Test Framework



TestNG Annotations

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TestNG Annotations

Annotations	Description
@BeforeSuite	This annotation marks the entry point of execution.
@AfterSuite	This annotation runs post all the test methods of all the classes have run.
@BeforeTest	This annotation is run before your first @Test annotation method in your class.
@AfterTest	This annotation runs after all your test methods belonging to your class have run.
@BeforeGroups	This annotation helps run the defined test before the specified group.
@AfterGroups	This annotation runs after all the test methods of the specified group are executed.
@BeforeClass	This annotation runs before the first test method in the current class.
@AfterClass	This annotation runs after the last test method in the current class.
@BeforeMethod	This annotation runs before every @test annotated method.
@AfterMethod	This annotation runs after every @test annotated method.
@Test	All functionalities to be automated are kept inside the @Test annotation method.

1st Automated Test Using Selenium

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TestNG Annotations

- 1) `@Test`
- 2) `@BeforeSuite/ @AfterSuite`
- 2) `@BeforeTest/ @AfterTest`
- 3) `@BeforeGroups/ @AfterGroups`
- 4) `@BeforeClass/ @AfterClass`
- 5) `@BeforeMethod/ @AfterMethod`

TestNG Annotations

- Pre-Condition(s)
 - ▣ @BeforeSuite
 - ▣ @BeforeTest
 - ▣ @BeforeGroups
 - ▣ @BeforeClass
 - ▣ @BeforeMethod
- Condition(s) - @Test
- Post-Condition(s)
 - ▣ @AfterSuite
 - ▣ @AfterTest
 - ▣ @AfterGroups
 - ▣ @AfterClass
 - ▣ @AfterMethod

@BeforeSuite

@BeforeTest

@BeforeClass

@BeforeGroups

@BeforeMethod

@Test

@AfterMethod

@AfterGroups

@AfterClass

@AfterTest

@AfterSuite

@BeforeClass

@BeforeMethod

@Test

@AfterMethod

@AfterClass

TestNG ▶ Assertions

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Difference Between Hard Asserts & Soft Asserts

- Hard Assert – stops execution after a failure and moves to the next annotation
- Soft Assert – continues execution after a failure and moves to the next statement line



TestNG Assertion Methods

- `assertTrue` – verifies a condition is true
- `assertFalse` – verifies a condition is false
- `assertSame` – verifies that 2 objects refer to the same object
- `assertNotSame` – verifies that 2 objects do not refer to the same object
- `assertNotNull` – verifies that an object is not null
- `assertEquals` – verifies actual and expected results are equal

JUnit & TestNG Assertions

// TestNG Assertion Classes

org.testng.Assert

org.testng.AssertJUnit

// Assert Syntax

assertEquals(actual, expected, "This String Parameter Is The Last Parameter")

// AssertJUnit Syntax

assertEquals("This String Parameter Is The First Parameter", expected, actual)

SoftAssert

`softAssert.assertAll()`

Verify Condition(s)
via @Test

`assertTrue`

`assertFalse`

`assertSame`

`assertNotSame`

`assertNotNull`

`assertEquals`

Located At The End
of @Test

`assertAll()`



Parameterized ▶ Testing

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Parameterized Testing

- xml File – parameter tag
- Java Class – @Parameters Annotation

TestNG Capture Failed Screenshots

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TestNG & Selenium Dynamic Wait Statements

TestNG

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Selenium Wait Methods

Method	Description
Thread.sleep()	<u>(Not a Selenium Wait Method)</u> Causes execution to sleep for a certain number of milliseconds
Page Load Timeout	Sets the wait time for a page to load before throwing an error
Script Timeout	Sets the wait time for JavaScript to execute before throwing an error
Implicit Wait	Instructs WebDriver to wait for all elements connected to the driver
Explicit Wait	Pauses execution until time has expired or an expected condition is met via WebDriverWait class
Fluent Wait	Allows us to wait for an element, check for the presence of an element, and ignore exceptions

Explicit Wait

Fluent Wait

Implicit Wait

Page Object Model

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@BeforeSuite

@BeforeTest

@BeforeClass

@BeforeGroups

@BeforeMethod

@Test

@AfterMethod

@AfterGroups

@AfterClass

@AfterTest

@AfterSuite

TestNG Assertion Methods

- `assertTrue` – verifies a condition is true
- `assertFalse` – verifies a condition is false
- `assertSame` – verifies that 2 objects refer to the same object
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Java (OOP)

Object-Oriented Principles

- 1) Encapsulation
- 2) Inheritance
- 3) Polymorphism
- 4) Abstraction

Web
Pages

Page Objects
(Elements &
Interactions)

Test
Scripts

Elements & Interactions are stored
separate from Test Scripts

Parallel Testing & Data Providers

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Parallel Testing

- parallel attribute
 - classes
 - methods
 - tests
- threadPoolSize
- invocationCount

Data Driven Testing

- DataProvider Annotation
- dataProvider Attribute
- dataProviderClass Attribute



Parallel ▶ Testing

Data Driven Testing With DataProviders

Cross Browser Testing & Cloud Selenium Grid

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Geolocation

- Testing

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Mock Geolocation

- Cloud Selenium Grid
- Selenium 4 Feature

Cloud Selenium Grid

Selenium 4

- Feature

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