

SELENIUM TESTING Course Content

Java Essentials for Selenium

Core Java Programming

- Introduction to Java
- History of java
- Comparison with C and C++]
- Features of Java
- JDK,JRE,JVM overview
- JDK Directory Structure
- Basic Java Program through command promp

Java Programming Basics

- Installing Java
- Installing Eclipse
- First Eclipse Project
- Concept of class file
- Datatypes in Java
- String class and functions
- Conditional Statements
- Loops
- Arrays
- Single Dimensional Arrays
- Two Dimensional arrays
- Practical usage of arrays in Selenium
- Operators
- What are Functions?
- Function Input Parameters
- Function Return Types
- Object-Oriented Programming in Java
- Local Variables



- Global Variables
- Static and Non-Static Variables
- Static and Non-Static Functions
- Creating Objects in Java
- Meaning of static
- Why is main method static?
- Object and Object References
- Call by reference and Value
- Overloading and Overriding Functions
- Access Modifiers – Public/Private/Default/Protected
- Constructors
- Interface
- Usage of Objects in Selenium
- Inheritance
- Usage of Inheritance in Selenium
- Creating Packages
- Accessing Classes across Packages

Exception Handling

- Exception handling with try catch block
- Importance of exception handling
- Exception and Error
- Throwable Class
- Final and Finally
- Throw and Throws
- Different Types of Exceptions
- Need of exception handling in Selenium framework

Automating Excel file Operations

- Creating/Opening XLS Files
- Reading/Writing Microsoft XLS Files
- Counting Rows and Columns
- Filling BG/Font Colours
- Practical Examples

Automating Text File Operations



- Creating/Opening Text Files
- Reading/Writing Text Files
- Practical Examples

Automating Database Operations

- Connecting to Databases
- MySQL
- Oracle
- SQL Server
- Sending SQL Queries to Database
- Process the Results
- Practical Examples

Selenium Introduction

- What is Selenium?
- Who developed Selenium?
- Selenium Components

Selenium IDE

- Installing Selenium IDE
- Creating your First Selenium IDE script
- How to use Locators in Selenium IDE
- How to enhance a script using Selenium IDE
- Creating and Running Tests
- Creating and Running Test Suite

WebDriver Introduction

- WebDriver & Comparison with Selenium RC
- Installing Selenium WebDriver
- Architecture of selenium Webdriver
- Creating your First Script in Webdriver

Launching AUT and Inspecting properties of Elements

- Launching AUT in FireFox
- Launching AUT in InternetExplorer
- Launching AUT in Chrome
- Launching AUT in Safari



- Inspecting properties of Elements on different Browsers
- Installing FireBug and FirePath
- Creating FireFox Profile

Automating Operations on various Elements

- Browser
- TextBox
- ListBox
- Links
- Check Box
- Radio Button
- HTML Tables
- Calendars

Automating Keyboard and Mouse Events

- Action Class
- KeyBoard Events
- Drag & Drop Actions
- Mouse Hover Action
- RightClick, Double Click & Tool Tip

Handling multiple Windows

- getWindowHandle()
- getWindowHandles()
- Switching between windows
- Handling elements present in different windows

Handling Alerts

- accept()
- dismiss()
- getText()
- sendKeys()

Handling Frames

- What is iFrame?
- Locating Frames
- Switching between Frames
- Handling Frames



Handling Ajax Components

- Handling Ajax Components

Creating Customized XPath/CSS Selectors

- What is XPath
- When to Use XPath
- Absolute XPath/Relative XPath
- Specifying conditions with XPath
- CSS Selectors
- Customizing CSS Selector

Synchronization

- ImplicitWait
- WebDriverWait
- FluentWait
- PageLoadTimeout

What is TestNG?

- Advantages of TestNG over JUnit
- Why do we need TestNG in Selenium?
- Installing TestNG in Eclipse
- Creating a New TestNG Test File
- Test annotation
- Running the Test
- Checking reports created by TestNG
- Generating HTML Reports
- Annotations used in TestNG
- Validating Tests with Assertions
- Creating multiple Tests
- Prioritizing Tests
- Parameterizing Tests with dataProvider
- TestNG dataProvider with Excel
- Creating and Running Test Suites with TestNG.xml
- Parallel Test Execution with TestNG
- Cross Browser Testing using TestNG

Automation Test Frameworks

- Modular Driven Framework
- Keyword Driven Framework



- Data Driven Framework
- Hybrid Framework

Page Object Model (POM) & Page Factory in Selenium

- What is POM
- Why POM?
- Advantages of POM
- Creating POM Tests
- What is Page Factory?
- Creating Tests with Page Factory

Database Testing using Selenium

- JDBC (Java Database Connectivity)
- Driver Manager
- Driver
- Connection
- Statement
- ResultSet
- SQLException
- Connecting to DataBases
- Sending SQL Queries to Database
- Processing Results
- Real-time examples of Database Testing with Selenium

AutoIT

- Installing AutoIT
- Components of AutoIT
- Using FinderTool
- AutoIT commands
- Creating Scripts in AutoIT
- Creating executable files
- Running AutoIT Scripts from Selenium

Selenium GRID

- What is Selenium Grid?
- When to Use Selenium Grid?
- What is a Hub and Node?
- How to Install and Use Grid 2.0?
- Designing Test Scripts That Can Run on the Grid
- Using the DesiredCapabilities Object



- Using the RemoteWebDriver Object
- Running a Sample Test Case on the Grid
- Sequential and Parallel Test Execution
- Running Tests on different Operating Systems
- Running Tests on different Browsers

Maven & Jenkins

MAVEN

- What is Maven and Why Maven?
- Installing/Configuring Maven
- Creating Maven Project
- Importing Maven Project into Eclipse
- What is POM.xml?
- Adding Dependencies to POM.xml

JENKINS

- Installing/Configuring Jenkins
- Scheduling Test Execution in Jenkins
- Auto mail configuration in Jenkins
- What is continues integration?
- Continues integration with JENKINS

GIT

- Downloading and Installing GIT
- Installing GIT and GITHUB plug-ins for JENKINS
- Configuring SSH host keys for GIT and JENKINS
- GIT Bash commands
- Uploading project to GIT

LOG4J

- Introduction about Logging
- Logging problems without Log4J
- How to solve Logging problem with Log4J
- What is Layout?
- Different types of Layouts in Log4J
- What is Appender?
- Different types of Appenders