

# SELENIUM SYLLABUS

## Java Programming Basics

- ❖ Why Java for Selenium
- ❖ Installing Java
- ❖ Installing Eclipse
- ❖ First Eclipse Project
- ❖ First Java program
- ❖ Concept of class file
- ❖ Datatypes in Java
- ❖ String class and functions
  - Practical Examples on Strings handling
- ❖ Conditional Statements
  - If...else...
  - Switchcase
  - Practical Examples with conditions
- ❖ Loops
  - While Loop
  - For Loop
  - Practical Examples with 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

- ❖ 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**

### **Introduction to Selenium and its Components**

- ❖ 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

## **Selenium WebDriver Training**

### **WebDriver Introduction**

- ❖ Introduction to 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 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

## **TestNG 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
- ❖ TestNGdataProvider 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

## **Project Testing WorkShop Overview of QTP / UFT**