

Selenium WebDriver Using Java

Volume I: Training Guide

Edition 2.0

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Course Objective

The Training program is intended for Software Quality Assurance Professional, Software Project Manager, or a Web Application developer who want to learn & Master Selenium WebDriver from scratch and also successfully bring about hands on delivery by practically learning how to,

- ✓ Write an optimized automation test scripts by following industry formalized design & practices.
- ✓ Build & Package Automation Test projects.
- ✓ Generate Automated Test Reports.

Prerequisite

As a prerequisite, it requires knowledge on imperative technology or framework for developing automation test scripts using Selenium WebDriver those include,

- OOP's & Programming Using Java

Big Takeaways

- Proof of concept (POC) automation code that demonstrates the effective use of Selenium WebDriver for a Web Application using Java & TestNG framework.
- Overcome manual test reporting by learning to generate automated Test Reports.
- Running the automated tests through continuous integration.

Software Requirements

Software Libraries & Tools	Java (7.0 or >), Latest Netbeans or Eclipse IDE, Maven (3.0 or >) , Selenium(2.0 or >) , TestNG(5.0 or >), Jenkins (2.0 or >) .
Web Browsers	Firefox (47.0 or >), IE (8.0 or >), Chrome (51.0 or >).
Web /Application Sever	Tomcat (7.0 or >).
Network/ Access	Maven Repository URL, http://repo.maven.apache.org http://repo1.maven.apache.org http://repo2.maven.apache.org

Course Agenda Day 1

- Selenium Overview, Maven & TestNG

- **Selenium Overview**

- Why Automation Testing

- Web Application Architecture

- Uniqueness of Web Based Application Testing

- Selenium WebDriver Architecture

- **Maven Build Automation Tool**

- Build process

- Project structure

- Dependency management

- Access to information and documentation

- **Learning TestNG**

- Overview

- Test Suite

- TestNG Annotations

- Test Groups & Dependencies

- Test Prioritization & Sequencing

- TestNG Asserts

- TestNG Parameters & Data Providers

- Multi Browser, Cross Browser & Parallel Testing using TestNG

Course Agenda Day 2

- **Selenium WebDriver Essentials**

- **Selenium Web Driver & Browser Compatibility**

- Instantiate Different Web Browsers

- IE, Mozilla Firefox & Chrome

- DesiredCapabilities or Browser Profiling

- Summary & Questions

- Practical Session

- **Finding WebElements**

- Using browser tools for inspecting elements and page DOM

- Finding an element using the findElement () method

- Finding elements using the findElements () method

- Find Elements using Webdriver Locator strategies

- Finding elements using CSS selectors

- Finding elements using Xpath

- Summary & Questions

- Practical Session

Course Agenda Day 3

- **Selenium WebDriver Essentials**

- **Working with WebElements**

- PageObject Model Design Pattern

- Automating textboxes, text areas, and buttons

- Checking an element's text

- Checking an element's attribute and CSS values

- Automating dropdowns and lists

- Checking options in dropdowns and lists

- Checking selected options in dropdowns and lists

- Automating radio buttons and radio groups

- Automating checkboxes

- Working with WebTables

- Summary & Questions

- Practice Session

- **Selenium WebDriver Advanced Usage**

- **Advanced User Interactions**

Checking for an WebElement's state

User Interactions API for Mouse and Keyboard Events

Automating File Upload using Robot Class

Performing double-click on an element

Performing drag-and-drop operation

Executing the JavaScript code

Capturing Screenshots with Selenium WebDriver

Comparing Images

Working with Browser Navigation

Summary & Questions

Practical Session

Course Agenda Day 4

- **Selenium WebDriver Advanced Usage**

- **Synchronizing Test**

- Synchronizing a test with an implicit wait

- Synchronizing a test with an explicit wait

- Synchronizing a test with custom-expected conditions

- Synchronizing a test with FluentWait

- Summary & Questions

- Practical Session

- **Data- Driven Testing**

- Data-Driven Test Workflow

- Benefits of Data-Driven Tests

- Creating a Data-Driven test using TestNG

- Reading test data from a CSV file using OpenCSV

- Reading test data from an Excel file using Apache POI

- Running Data Driven Test Parallely Using TestNG

- Summary & Questions

- Practice Session

Course Agenda Day 5

- **Hybrid Automation Framework Development**

- **Selenium Grid**

- Understanding Selenium Grid Architecture

- Setting up Selenium Grid Server for Parallel Execution

- Creating & Executing Selenium Script in Parallel with TestNG

- Practice Session

- **Continuous Integration Testing(CI)**

- Continuous Integration an Overview

- Jenkins for CI

- Create a Jenkins Job for Build & Execution of Selenium Test script

- Configure Jenkins to Generate Automated Test Report

- Practice Session