Software Testing Automation In Selenium

Course Outline:

1) Automation:

• What is Automation Testing
• Use of automation Testing
• Tools for Automation Testing
• Why automation is important for you career?
• What is Selenium
• Advantage of Selenium
• Introduction to IDE, RC WebDriver & Grid

2) Java for QA:

• Data Types and Variables
• String Class
• Arithmetic Operators & Concatenation operators
• Conditional & Decision Making
• Single Dimensional Array
• Double Dimensional Array
• Loops (For, While, Nested, Do While Loop)
• Classes and Objects
• Class Constructors
• Functions in Java
• Function Input Parameters
• Function Return Types

3) Eclipse IDE:

• How to use Eclipse
• How to run, stop, pause

• How to debug in Eclipse
• Understanding console output
• How to put a break point
• How to add Watch variables
• How to find errors from Problem window
• Usage of step into and Step over debug functionality

4) Set up Eclipse:

 • Download and install java
• Download and start Eclipse
• Download and configure WebDriver java client
• Set up a project
• Create packages
• Create a First Java test case
• Import WebDriver Source file

5) WebDriver Interface:

 • Architecture of WebDriver
• WebDriver Interface
• WebElement Interface
• Launching Firefox browser

6) Browser & Navigation Commands:

 • How to Open a URL
• Verify Page title
• Strategy to get the Page Source
• Difference between Close & Quit
• Ways to Navigate Back & Forward
• How to Refresh Page
• Another way of Navigating to specific Page

7) WebElement Commands:

 • Difference between FindElement & FindElements
• Enter & Clear text from Input field

- How Click action works differently on different elements
- Managing Input fields, Buttons & Links
- Finding all links on the Page
- Strategy to check dead links on the page
- Extracting More than one object from a page
- Extracting Objects from a specific area of a web page
- Check if element is Present, Displayed, Enabled or Selected

8) Locators

- What are locators
- HTML Basics
- HTML language tags and attributes
- ID, Name, Xpath, CSS etc
- Difference between Absolute & Complete Xpath
- Finding your first element
- WebElement Commands

9) Element Identification:

- Element Inspector in Mozilla, Chrome and IE
- Element locator tool for FF
- FireBug & FirePath Add-Ons in Mozilla
- Various HTML locator strategies
- XPath Helper Plug-in for Chrome
- Selection of Effective XPath
- Handling Dynamic objects/ids on the page

10) Tables, Checkboxes & Radio buttons:

- Identify table rows and columns
- Extracting values from a cell
- Dynamically Identify Tables Data
- Select class in Selenium
- Drop Down Handle
- Select multiple values from the list
- Select & Deselect operations by Index, Value & Visible Text

11) Launching different browsers using WebDriver:

• Launching IE
• Challenges with IE Browser
• IE driver server and path settings
• Launching Chrome
• Chrome server and path settings

12) Selenium Waits, Alert & Switch Windows

• Implicit and Explicit waits
• How to use Expected Conditions with Waits
• PageLoadTimeout & SetScriptTimeout property
• Simple use of Thread Sleep
• Concept of Fluent Wait in Selenium
• Strategy to poll for an object
• WebDriverWait and its uses
• Different WaitUntil Conditions
• Managing Ajax based components
• Ways to handle Simple, Confirmation & Prompt Alert
• Concepts of Set Interface in Java
• Difference between Window Handle & Handles
• Switching & Closing Windows, Tabs & PopUps
• Concept of window ID
• Extracting window IDs with Selenium Object reference

13) Action Class

• What is Action Class & What can we do with Action Class
• Mouse Hover & Mouse Movement with Action
• Finding Coordinates of a Web Object
• Drag and Drop Action

14) Browser Profile:

• What is Browser Profile
• How to set up FireFox profile
• How to set up IE profile
• HTTP user authentication in Mozilla
• HTTP user authentication in IE
• Certificate handle in Mozilla
• Certificate handle in IE

15) Java Tutorial

• Local & Global Variables
• Static Variable & Function
• Modifiers – Access Modifiers
• Modifiers – Non Access Modifiers
• Overloading and Overriding Functions
• Inheritance
• Polymorphism
• Exception and Error
• Final and Finally Keyword
• Throw and Throws

16) TestNG Framework

• What is TestNG
• Benefits and Features of TestNG
• How to download TestNG
• Annotations in TestNg
• How to run Test Suite in TestNG
• Groups in TestNG
• Depend On in TestNG
• Test Case sequencing in TestNG
• TestNG Reporters
• TestNG Assets
• TestNG Parameters

• Multi Browser testing in TestNG
• Parallel testing in TestNG

17) Automation Framework

• What is Automation Framework
• Features of Automation Framework
• Benefits of using Automation Framework
• Different types of Automation Framework
• What is Data Driven Framework
• What is Modular Driven Framework
• What is Keyword Driven Framework
• What is Hybrid Framework

18) Selenium Hybrid Framework

• Introduction and Component of Frameworks
• Designing Test Data Provider (Excel)
• Designing Run Data Provider (Text/Property file)
• Setting up ANT/Maven Build Tool
• Factory Pattern Design
• Browser Factory Design
• Data Provider Factory Design
• Creating Page Objects & Object repository
• Writing Test Script and Fetching Test Data
• Designing Test Runner for Framework
• Enhancing Browser Factory
• Asserts, Test Fails & Error logging
• Reporters, TestNG Listeners and Log file Generation
• Running test with different Test Data
• Generating the HTML reports
• Emailing test reports
• Creating a BAT file for project execution

19) API Testing

• Introduction to API testing: Definition, advantages, and why it

- RESTful web services: Overview of RESTful architecture, HTTP methods (GET, POST, PUT, DELETE), and status
- Tools and frameworks: Introduction to popular tools for API testing such as Postman, SoapUI, and frameworks like
- Setting up the environment: Installing and configuring the required tools and
- Making API requests: Understanding how to construct API requests, including headers, parameters, and request
- Validating API responses: Checking for expected results, using assertions, and handling different response formats (JSON, XML).
- Error handling: Dealing with unexpected errors and