**Selenium**

Workshop Details:

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| **Duration :** | 5 Days |
| **Objectives and Take away :** | Understanding and hands-on on the topic for software testing professionals who would like to learn the basics of Selenium through practical examples. Automating any web based application using Selenium. Writing automated code and create test scripts using Selenium libraries. Hands-on with Selenium Automation Frameworks. Working knowledge on All major Selenium components  **Take away**: In-depth understanding of Selenium and its related tools and their usage. |
| **Participants’ Entry Profile :** | Participants should have a basic understanding of Java or any other object-oriented programming language. In addition, you should be well-versed with the fundamentals of testing concepts. |
| **Training Methodology :** | The workshop will follow Synergetics methodology of  **Concept Visualization**  **Active Experimentation**  **Application Development.**  The workshop will be 100% Hands-On with each participant having access to system during the session |

Setup Requirements

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| **Hardware and Software Requirements :** | Participant’s as well as Trainer’s Machine are required to have :  **Hardware**  Intel Core i3 2.2 GHz  80 GB HDD  LCD Color Monitor  2 GB RAM  LAN Connectivity  **Software**  Windows XP or 7  Firefox/ HTMLUnit/ ChromeDriver/ Internet Explorer Driver Server  Java SDK 1.7.x  Tomcat 7.0/GlassFish 3.2.x/JBoss 7+  Eclipse J2EE 4.0 onwards (**Must match with bit architecture of machine**)  J2EE Documentation  **Selenium Java Client Driver 2.48.2**  MS Office 2007 onwords   * The installable must match in bits architecture of the machine. * A shared disk-space among participants and trainer for trainer to share training stuff with participants. * Internet connection to fetch maven dependencies . |
| **Training Lab Requirements:** | Whiteboard 6 feet by 4 feet (minimum)  Whiteboard markers – Red, Blue, Green, Black  Video Projector (1024 X 768 resolutions) |

**Pre-requisite for training**

* A skill-set equivalent to Software Testing
* Basic Java is added advantage

Course Content

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| **Day 1** | * **Module 1: Selenium Overview (\*)**   + Introduction   + History   + Selenium Advantages   + Selenium Disadvantages   + Selenium Tool Suite components   + Selenium Integrated Development Environment (IDE)   + Selenium Remote Control (RC)   + Selenium WebDriver   + Selenium Grid   + Selenium 3   + Environment and Technology Stack   + How to Choose the Right Selenium Tool for Your Need   + A Comparison between Selenium and QTP   + Summary      * **Module 2: Getting Started with Selenium IDE (Installation and its Features) (\*)**   + Introduction to Selenium IDE   + Selenium IDE Download and Installation   + Features of Selenium IDE   + Menu Bar   + Base URL Bar   + Toolbar   + Editor   + Test case pane   + Log Pane * **Module 3: My First Selenium IDE Script(\*)**   + Creating First Selenium IDE Script   + Process #1: Recording a test script   + Process #2: Playing back / executing a test script   + Process #3: Saving a test script   + Using Common features of Selenium IDE   + Selenium IDE Commands   1. Actions   2. Accessors   3. Assertions  Module 4: Use Firebug for Creating Selenium Scripts  * + Introduction to Firebug   + How to Install Firebug?   + Creating Selenium Script using Firebug |
| **Day 2** | Module 5: Identify Web Elements Using Selenium Xpath & Other Locators(\*)  * + What is Locator?   + Types of Locators   + Using ID as a Locator   + Verify the locator value   + Using ClassName as a Locator   + Using name as a Locator   + Using Link Text as a Locator   + Using Xpath as a Locator  Module 6: Use CSS Selector for Identifying Web Elements for Selenium Scripts(\*)  * + Using CSS Selector as a Locator   + CSS Selector: Id,Class,Attribute   + CSS Selector: Sub-string   + CSS Selector: Inner text  Module 7: Locate Elements in Chrome & IE Browsers for Building Selenium Scripts  * + Locating Web Elements in Google Chrome   + Locating Web Elements in Internet Explorer |
| **Day 3** | Module 8: Selenium WebDriver (\*)  * + Introduction to Selenium WebDriver   + Architecture   + Features of Selenium WebDriver   + Drivers, Methods and Classes  Module 9: WebDriver Entire Setup and Installation with Eclipse  * + Java Installation   + Eclipse IDE Installation   + Configuring WebDriver   + Configuring Libraries with Eclipse IDE   + Available Drivers  Module 10: Implementation of Our First WebDriver Script  * + Script Creation   + Code Walkthrough   + Test Execution   + Locating Web Elements   + Locator Types and their Syntax |
| **Day 4** | Module 11: Introduction to JUnit Framework and Its Usage in Selenium Script  * + Adding JUnit library in Java project   + JUnit Annotations Used in Selenium scripts   + JUnit Assertions  Module 12: How to Use TestNG Framework for Creating Selenium Scripts  * + Introduction to TestNG   + Features of TestNG   + TestNG versus JUnit   + TestNG Installation in Eclipse   + Creation of Sample TestNG project and classes   + Executing the TestNG script   + HTML Reports   + Setting Priority in TestNG   + TestNG Annotations  Module 13: Usage of Selenium Select Class for Handling Dropdown Elements on a Web Page  * + Explanation of Application under Test   + Hyperlink, Dropdown, Button   + WebDriver Code using Selenium Select Class   + Code Walkthrough  Module 14: Check Visibility of Web Elements Using Various Types WebDriver Commands  * + isDisplayed()   + isSelected()   + isEnabled() * **Module 15:Practical Use of Different types of Selenium WebDriver Waits**   + WebDriver Implicit Wait   + WebDriver Explicit Wait   + Expected Condition   + Navigation Using WebDriver * **Module 16: Handle Alerts/Popups in Selenium WebDriver**   + Types of alerts   1. Windows based alert pop ups   2. Web based alert pop ups   + WebDriver Code using Select Class   + WebDriver Code using Robot Class * **Module 17: Various Commonly & Routinely Used Selenium WebDriver Commands**   + Selenium WebDriver Commands  1. **get()** methods 2. Locating links by **linkText()**and **partialLinkText()** 3. Selecting multiple items in a drop dropdown 4. Submitting a form 5. Handling iframes 6. **close()**and **quit()** methods 7. Exception Handling  Module 18: Handling Web Tables, Frames, and Dynamic Elements in Selenium Script  * + Web Tables/HTML Tables   + Frames   + Dynamic elements  Module 19: Handling Exceptions Using Exception Handling Framework in Selenium Scripts  * + Types of exceptions  1. Checked Exception 2. Unchecked Exception 3. Error    * Exception handling    * Exceptions in Selenium WebDriver  Module 20: Most Popular Test Automation Frameworks with Pros and Cons of Each  * + What is Framework?   + Test Automation Framework   + Types of Test Automation Framework   + Few most popularly used Test Automation Frameworks:  1. Module Based Testing Framework 2. Library Architecture Testing Framework 3. Data Driven Testing Framework 4. Keyword Driven Testing Framework 5. Hybrid Testing Framework 6. Behavior Driven Development Framework  Module 21: Selenium Framework Creation and Accessing Test Data from Excel (\*)  * + Framework Creation and Accessing test data from the excels   + Framework creation strategy   + Sample project |
| **Day 5** | Module 22: Creating Generics and Testsuites(\*)  * + Generics   + Type of Generics * Application Specific * Framework Specific   + Creation of Generic Class   + Testsuite  Module 23: Apache ANT – a Tool for Automating Software Build Processes and its Importance in Testing(\*)  * + Apache Ant Benefits   + Apache Ant Features   + Environment Setup   + Sample Build.xml with Explanation   + Built-in Tasks   + Execution  Module 24: Use of Maven Build Automation Tool and Maven Project Setup for Selenium  * + What is a build tool?   + General Phrases used in Maven   + Build Life Cycle   + Maven Setup   + Install maven IDE in Eclipse   + Create Maven project  Module 25: Hudson – Importance and Benefits of this Continuous Integration Tool  * + Continuous Integration   + Hudson – Continuous Integration Tool   + Hudson Installation   + Hudson Configuration   + Configuring Email Notification   + Creating Hudson Project   + Configuring Hudson Project   + Configuring Source Code Management   + Selecting Build Triggers   + Invoking Build Steps   + Configuring Post-build Actions  Module 26: Debugging Selenium Scripts with Logs (\*)  * + Advantages of Logging in Selenium Scripts   + Log4j – A Java based Logging API   + Constituents of Log4j  1. Loggers 2. Appenders 3. Layouts    * Installation/Setup  Module 27: Efficient Selenium Scripting and Troubleshoot Scenarios(\*)  * + JavaScript Executors   + Accessing multiple links   + Accessing multiple elements in a List   + Handling keyboard and mouse events  Module 28: Database Testing Using Selenium WebDriver and JDBC API  * + Creation of test data in the Database   + Creation of new Database   + JDBC Workflow   + Result Accessibility Methods   + Result Navigation Methods  Module 29: How to Speed up Test Execution Using Selenium Grid  * + What is need of Selenium Grid?   + Benefits of Selenium Grid   + Basic terminology of Selenium Grid * **Hub** * **Node**   + Install Selenium GRID   + Browser and Nodes   + Sample Grid Code   + Configuration using JSON file  Module 30: Automation Testing Using Cucumber Tool and Selenium  * + Cucumber Introduction   + Cucumber Basics   + Cucumber Project Setup  Module 31: Integration of Selenium WebDriver with Cucumber  * + Cucumber Project Setup   + Cucumber and Selenium WebDriver |
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