Selenium Course Topics

# Introduction

* What is Testing
* Ways of Testing
* Drawbacks of manual testing
* Automation Testing
* Web Testing Automation tools
* QTP vs Selenium

# Java

**Getting Started with Java**

* Where to download Java
* How to install Java
* Setting up the Environment Variables
* First Java Program
* How to compile & run a Java application

**Java Basics**

* Variables and Data Types
* Operators
* Conditional Statements - If - else
* Loops - while loops
* Loops - for loops
* Array – Single and Multi Dimensional arrays

**Object Oriented Programming - 1**

* OOPs concepts over view
* Static Vs Non Static
* Introduction to Classes and Objects
* Constructor
* this keyword
* Inheritance
* Interface
* Overloading
* Overriding
* Access Modifiers

**Object Oriented Programming - 2**

* Collections
* Strings
* Exceptions

# Eclipse

* Installing Eclipse
* Creating Simple Java Project in eclipse
* Importing and Exporting
* Debugging using Eclipse
* Exploring Eclipse – Basic
* Exploring Eclipse – Advanced

# Selenium

**Introduction to Selenium**

* Test Automation for Web Applications
* To Automate or Not to Automate?
* Introducing Selenium
* Brief History of The Selenium Project
* Selenium’s Tool Suite
* Choosing Your Selenium Tool
* Supported Browsers and Platforms

**Selenium IDE**

* Installing Selenium IDE
* Recording Script
* Running, Pausing and debugging Script
* Running a script line by line
* Inserting commands in between script
* XPATHS and installing firebug to get XPATHS
* Wait Commands
* Verification and Assertions
* User-extension.js in Selenium IDE
* Echo, StoreEval and StoredVars Demystified

**Element Locators**

* Firepath and firebug Add-ons installation in Mozilla
* Inspecting elements in Mozilla, Chrome and IE
* HTML language tags and attributes
* Various locator strategies
* Identifying WebElements using id, name, class
* Xpaths Identification
* Absolute and complete Xpaths
* Xpath functions
* Creating customized Xpaths without firebug
* Css Selectors
* Generating own CssSelectors
* Performance of CssSelectors as compared to Xpaths

**Selenium WebDriver 2.0**

* Why WebDriver?
* Downloading WebDriver Jars and configuring in eclipse
* Architecture of selenium webdriver
* Drivers for Firefox, IE, chrome, Iphone, Android etc
* First Selenium Code
* Working with chrome and IE
* Concept of firefox profile
* Close and Quit
* Importing webdriver documentation in eclipse
* WebDriver DesiredCapabilities Class
* Proxy settings with webdriver/Working with proxy Servers
* HTMLUnit driver and desired capabilities

**Working with WebDriver API**

* Working with WebElements
* Input Fields, Button
* Identifying Links
* Finding WebElement
* Getting multiple Elements from a page
* Verifying element's text
* Getting Element attribute values
* Checking an element's CSS values
* Handling drop down list - Select
* Working with radio button
* Working with Check boxes
* Handling Ajax Auto suggests
* Handling Frames in Web Page
* Handling Frames inside Frames
* Handling cookies
* JavaScriptExecutor
* Capturing screenshots with Selenium WebDriver
* Synchronizing a test with an implicit wait
* Synchronizing a test with an explicit wait
* Synchronizing a test with custom-expected conditions
* Checking an element's presence
* Checking an element's status
* Identifying and handling a pop-up windows

**WebDriver - Advanced User Interactions**

* Using Advanced User Interactions API for mouse and keyboard events
* Performing double-click on an element
* Performing drag-and-drop operations
* Moving an element to an offset
* Doing a context click
* Clicking on multiple items in a select element
* Holding the mouse button down while moving the mouse

**Working with DataBase**

* Java.sql package
* JDBC Drivers
* Connection Interface
* Statement and Prepared Statement Interfaces
* ResultSet Interface
* Firing select, insert, update and delete queries with database using Java JDBC

**Selenium RC**

* What is Selenium RC?
* Configuring Selenium RC in Eclipse
* Javadocs for Selenium RC
* Selenium Interface
* Starting and Stopping Selenium Server
* Browsers supported by RC

**Selenium Grid**

* Introduction to Grid 2
* Creating Nodes and Hubs
* Configuring browsers on a node
* Limiting number of concurrent browsers on node
* Difference between maxSession and maxInstance
* Configuring chromedriver and IEdriver exe files on grid
* TestNG configurations
* Running single test on single node - serially in multiple browsers
* Running single test on single node – parallely on multiple browsers
* Running single test on multiple nodes – each node having different browser
* Prioritizing the test cases

**Automation Frameworks**

* Keyword Driver Framework Implementation
* Data Driver Framework Implementation
* Hybrid Framework Implementation

**Maven**

* What is Maven ?
* Installing/Configuring Maven
* Archetypes in Maven
* Creating maven project through command line
* POM.xml
* Importing Archetypes
* Maven Repositories
* Importing the maven project into eclipse
* Building a selenium project and running it through Maven
* Eclipse plugin for maven
* Using the maven plugin to execute phases - compile, clean, package etc

**Test Ng Framework**

* What is TestNg
* Installing TestNg in Eclipse
* TestNg annotations
* Understanding usage of annotations
* Running a Test in TestNg
* Batch Running of tests in TestNg
* Skipping Tests
* parameterizing Tests - DataProvider
* Assertions/Reporting Errors
* TestNg Reports
* Grouping test cases
* Setting priority of execution for test cases
* Advantages over Junit

# Project Implementation

**Intro to Automation**

* Why we need automation
* To automate or not to Automate?
* Tool Selection guidelines
* Automation Process Overview

**Automation Test Planning**

* Feasibility Analysis
* Writing Automation Test Plan
* Test Plan Review
* Done Criteria

**Framework Implementation and Scripting**

* Setting up Framework Environment
* Object Repository creation
* Script Creation
* Debugging the Scripts
* Script review
* Check-in Automation project/Scripts to SVN

**Automation Script Execution and Reporting**

* Running automation scripts
* Reporting Defects
* Test Reports Generation
* Sign-off