**SELENIUM AND JAVA SYLLABUS – BASIC LEVEL**

DAY 1 - Introduction to Automation

DAY 2 - Basics of Java & Selenium Automation

DAY 3 - Installation of Eclipse/Selenium/Maven/GIT/Jenkins

DAY 4 - Selenium Basics Continued - Class, Methods,

WebDrivers, Locators and Identifiers

DAY 5 - Various Frameworks and TestNg Framework

DAY 6 - Cucumber Framework Basic Level

DAY 7 - Assessment

DAY 1 - Introduction to Automation

***1) Introduction to Automation:***

A brief introduction to automation and the need for automation. How automation will enable you to beat competition and make you get the better jobs in market.

* *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*

DAY 2 - Basics of Java & Selenium Automation

***2) Java for Automation:***

This class will set you up for understanding Basic OOPs and java concepts. These concepts will be extremely important for you to become a good Automation tester. This section is specially designed so that can be followed by any Manual test very easily.

* *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*

DAY 3 - Installation of Eclipse/Selenium/Maven/GIT/Jenkins

***3) Eclipse IDE:***

This topic might seem little off place here but it’s very important topic to understand the tool you are using. Eclipse will the primary choice of development environment and we will discuss features of eclipse here.

* *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:***

We will start with setting up WebDriver, so that every participant start flaunting off their newly learnt skills by writing some cool test programs:

* *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) Setup Selenium

6) Setup Maven

7) Setup GIT

8) Setup Jenkins

DAY 4 – Selenium Basics – Browser Navigation, WebDrivers, Locators and Identifiers

***5) WebDriver Interface:***

This topic will make you familiar with the concept of browsers in WebDriver and how to launch basic Firefox browser using WebDriver. Here we will also talk about WebDriver & WebElement interface which will enable us to answer many complicated Interview Questions about WebDriver Implementation.

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

***6) Browser & Navigation Commands:***

This is something which everybody do very first thing when they learn Selenium. Opening & closing of browser and some navigation function on top of it.

* *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:***

An important and basic need of Selenium Automation. This part enables every participant to start writing automation test in their organizations. These are the most commonly used operations on any website.

* *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:***

In this class we will start learning about HTML, how elements are defined inside HTML document and what are the different attributes that are associated with an HTML element. We also try to find elements based on its attribute values.

* *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:***

This part explains the lifesaver Add-Ons & tools for Selenium. Finding elements are the most common activity carried out in Selenium. These tools give us power to easily identify complex elements and help us in saving lot of time.

* *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*

DAY 5 - Various Frameworks and TestNg Framework

***18) LIVE PROJECT -* Selenium TestNG Data Driven 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*
* *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*

DAY 6 - Cucumber Framework Basic Level

***18)*Cucumber BDD Framework**

* *What is Cucumber Testing Tool? Complete Introduction*
* *What is Cucumber and BDD*
* ***Environment Setup*** *–*

*Java, Eclipse and Maven Installation,*

*Maven Eclipse Project Creation,*

*Selenium, Cucumber and Extent Report Installation*

*Selenium Browser Driver Installation*

*Cucumber – Eclipse Plugin Installation*

* ***Cucumber Implementation*** *–*

*Gherkin Introduction*

*Step Definition File Creation*

*Executing Feature file with CucumberOptions and Junit*

*Running Cucumber Automation with Maven*

*Generating Basic Cucumber HTML and JSON report*

*Cucumber Options – Feature, Glue, Monchrome and Dry Run*

*Multiple scenario feature file.*

DAY 7 - Assessment

**SELENIUM AND JAVA SYLLABUS – ADVANCED LEVEL**

DAY 1 – Advanced Java Concepts

DAY 2 – Advanced Selenium Concepts

DAY 3 – Advanced TestNg Framework 1

DAY 4 – Advanced TestNg Framework 2

DAY 5 – Advanced Cucumber Framework 1

DAY 6 – Advanced Cucumber Framework 2

DAY 7 - Assessment

DAY 1 – Advanced Java Concepts

***16) Advanced 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*
* *Java -File Reading Writing*
* *JDBC – Connection to Database*
* *Java – Collections*

DAY 2 – Advanced Selenium Concepts

***1) Tables, Checkboxes & Radio buttons:***

Many applications involve use of web tables and list boxes. These skills will help participant to get the expertise on complex tables structures and write effective automation test.

* *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*

***2) Launching different browsers using WebDriver:***

This topic will make you familiar with the concept of browsers in WebDriver and how to launch different types of browsers using WebDriver. This will also cover the Challenges faced in using browser other than firefox.

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

***3) Selenium Waits, Alert & Switch Windows:***

A little complexity will start now onwards. To use Waits effective is very important for every automation tester. Wait helps us in switching windows, handling pop-ups, operating alerts correctly.

* *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*

***4) Action Class***

This gives us power on recently build Application with latest and complex object features. Hovering mouse or simulate Mouse and Keyword operations can be done by using Action Class. A necessary thing to learn in Selenium journey.

* *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*

***5) Auto IT:***

AutoIT is third party tool which is used for Desktop automation. In Selenium world sometimes there Is a need of automating windows component in browser automation script. So automation done through AutoIT can be called with Selenium Scripts.

* *What is AutoIT and its usage*
* *Downloading of AutoIT*
* *Usage of AutoIT in Selenium*
* *Upload, download files using AutoIt*
* *Handling http user authentication with AutoIT*

***6) Browser Profile:***

Different types of browser profiles and user authentication models with examples will be discussed in this class. You will need these to test secured websites and user authenticated websites.

* *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*

DAY 3 – Advanced TestNg Framework 1

* *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*

DAY 4 – Advanced TestNg Framework 2

* *Introduction and Component of Frameworks*
* *Designing Test Data Provider (Excel)*
* *Designing Run Data Provider (Text/Property file)*
* *Setting up 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*

DAY 5 – Advanced Cucumber Framework 1

* ***Cucumber Implementation*** *–*

*Gherkin Introduction*

*Step Definition File Creation*

*Executing Feature file with CucumberOptions and Junit*

*Running Cucumber Automation with Maven*

*Generating Basic Cucumber HTML and JSON report*

*Cucumber Options – Feature, Glue, Monchrome and Dry Run*

*Multiple scenario feature file.*

* ***Cucumber Implementation – Advanced –***

*Cucumber DataTable*

*Cucumber Tags*

*Cucumber Hooks*

*Cucumber Integration with Extent Report*

DAY 6 – Advanced Cucumber Framework 2

* ***Environment Setup – Part 2 -Continuous Integration (CI) –***

*Installation of Jenkins, Maven, GIT,*

*Configuration of Jenkins*

*Cucumber Automation Execution with Jenkins (CI) and GIT –*

*Jenkins – Creation of Job*

*Build Jenkins Job*

*Jenkins Integration with Extent Report*

DAY 7 - Assessment