**Advanced Selenium with Java**

**Day 1**

**MODULE1:**

* Basic understanding of test automation framework
* Understanding the Selenium components
* Selenium IDE
* Introduction to TestNG
* WebDriver API
* WebDriver Advanced Features
* WebDriver
  + Understanding WebDriver locators (XPath and CSS)
  + Understanding the WebDriver API
  + Web automation projects architecture
  + Introduction to Selenium Grid

Automation Configuration

* + Maven
    - The importance of builds and dependencies
    - Maven repository
    - Creating maven projects
    - Pom.xml
  + GIT
    - Introduction
    - GIT repositories
    - Creating & maintaining GIT repositories
  + Jenkins
    - Introduction to Continuous Delivery (CD)

**• Artifactories**

**• Jenkins pipelines**

**• Jenkins builds**

• Page Object Model in Selenium

• Read Excel file in Selenium using JExcel API

• Read and Write Excel file in Selenium using Apache POI

• Read Numeric test data from excel for framework development

• How to read CSV File in Selenium Webdriver

• Data Driven Framework in Selenium

• Custom wait in Selenium

• Java Scripts Handling Selenium

• Element Repository

• Generate XSLT Report in Selenium

• Advanced Selenium report, customization report, ReportNG in Selenium Webdriver

• How to use Object Repository in Selenium Webdriver

• Send Reports via Email using Selenium Webdriver

• Performance Testing in Selenium.

• How to Handle different kind of POPs

• How to Test Maps in Selenium

• TestNg integration with Selenium

• Test NG listeners in Selenium

• Sikuli Integration with Selenium Webdriver

• Headless Testing in Selenium

• Perform Remote execution in Selenium Webdriver Using Selenium Grid

• Create Base Class in Selenium Webdriver for Framework development.

* Use of Framework (datadriven, keydriven, hybrid, BDD) and latest Framework used in Software companies.
* Logs in Selenium

**Day 2**

**MODULE2:**

**• Groovy Scripting**

**• SOAPUI Data Driven Testing**

**• Database Testing using SOAPUI:**

**• SOAPUI Mock Service**

**• Load Testing**

• Database connection- Database Testing in Selenium

• What is ATLC- Automation Test Life Cycle

• How to import and export jobs in Jenkins

• Selenium Integration with Cucumber

• Robot and AutoIT in Selenium

• Cloud Testing in Sauce Labs using Selenium

Day 3

Module 3

API Testing

Swagger and Open API Specification

API Definition

• Definition file

• API request

YAML

• What is YAML

• Rules of YAML

Overview of RESTful Services

• Resoures

• State transfer

• Representation sate

Preparing the Development Environment

• Installing and configuring Swagger

• Installing and configuring Node.Js

REST Web Service Constraint Architecture

• Using the client-server constraint

• Working with uniform interface constraints

• Working with the statelessness constraint

• Using HTTP-caching

• Enabling a layer system

REST API Designing

• Implementing CRUD operations

• Using Error Handling

• Implementing operations for REST APIs

• Handling changes in API

• Versioning API

• Caching API

• Supporting pagination and partial responses

Specifications using Swagger

• Editing documents with Swagger

• Creating specifications in YAML format

• Creating paths and observations

• Adding documentation

• Adding schemas to a OAS file

• Using SwaggerHub

API Management

• Creating an API management strategy

• Managing the API life cycle

• Generating API proxies

• Controling the behavior of API

• Building an API portal

• Providing traffic management

API Security

• Securing with tokens and JWT

• Securing with API key and secret

• Authorizing using OAuth2.0

Day 4

Module 4

Rest Assured/ HTTP Client [Automation]

* Setup Cucumber + Rest Assured + Eclipse
* HTTP Client Vs Rest Assured
* Basic Requests [GET, POST, PUT and DELETE]
* JSON Path: Basics, Query and Expressions
* Response Validation and Assertions [Status Code, Attributes, Data Types, Arrays]
* Authentication, Authorization [Tokens] and handling SSL Certificates
* Schema Validation with YAML [Swagger and Open API] and JSON schema
* Working with nested JSONs
* Data driving the tests from Excel

REST WEB SERVICE / API Testing

* Creating a new REST service
* Deciding Service EndPoints
* Resource and Methods
* Creating GET, POST, PUT and DELETE requests
* Setting/Deciding media type
* Sending a simple POST login REST request and getting JSON response
* Sending POST request parameters in message using JSON
* Reading JSON Response with groovy
* Reading headers and passing cookies in headers
* Reading header information containing sessionid
* Maintaining session over subsequent requests
* Firing another REST request with session ID from previous response
* Assertion test Step in SOAPUI PRO
* Techniques to validate JSON response
* Validating/Asserting JSON response with JsonSlurper
* Validating/Asserting JSON response XmlHolder
* Data Driven Framework
* DataSource Test Step
* DataSource Loop Test Step
* DataSink Test Step
* Storing/Reading test data from XLS/XML
* Storing/Reading test data from Database
* Saving request and response in a text file for every request
* Loop a test with different sets of data
* Using DataSource, DataSource Loop and DataSink
* Preventing the flow to stop if assertion fails
* Generate xls reports
* Launch TestRunner Option
* Reporting – HTML
* Reporting – XLS

Day 5

Module 5

Gherkin using Java

Discovering BDD

• Introduction to BDD

• BDD and Agile

• Discovery workshop

• Discovery summary

• Introduction to formulation

• Knowledge check

Your first scenario

• Introduction

• Choose the first scenario

• Install Cucumber

• Add a scenario, wire it up

• Sketch out the solution

• Make the scenario pass

Expressing yourself

• Cucumber expressions not regular expressions

• Literal expressions

• Capturing parameters

• Flexibility

• Custom parameters

Cleaning up

• The importance of readability

• Review changes that happened while we were away

• Description field

• The "Before" hook

• Create Person in a generic stepdef

• Backgrounds

• Removing redundant scenarios

• Incidental details

• Refactoring to Data Tables

• Deeper into Data Tables

• DocString

• TDD Loops

Configuring Cucumber

• Configuring Cucumber

Problems and solutions

• Problems and solutions

Acceptance tests vs unit tests

• Acceptance tests vs unit tests

Web automation with Selenium

• Web automation with Selenium

Wire Mock Introduction