

## Selenium Test Automation

### Automation Testing

- What is automation testing
- When to go for Automation
- Different Automation Tools (vendor & open source tools)
- Advantages of Automation
- Criteria for Automation
- Difference between Manual Testing & Automation Testing Process

### Introduction to Selenium

- What is selenium Tool
- Use of selenium tool in automation
- Features of Selenium tool
- Differences between Selenium and other Tools

### Selenium Components

- Selenium IDE / Katalon IDE
- Selenium WebDriver
- Selenium Grid

### Configuration of Katalon IDE & Dev. Scripts

- Recording the scripts in IDE
- Running the scripts
- Saving the scripts and using again
- Understanding of the objects identification (id, name)
- Difference between Test case and test suit
- Languages supported while recording
- Synchronization in Katalon IDE (wait commands)
- Testing Vs Katalon IDE
- When to use Katalon IDE
- Learning commands in IDE
- How to put validations (assert, verify)
- How to read text / values from webpage (store commands)
- How to handle mouse, keyboard events
- Limitations of IDE

### Configuring Eclipse IDE for Java & Selenium

- How to Create new java project

- How to create a new java class
- Running java class
- Viewing the results of java program

### Learning Java

- Introduction to Java programming
- Data Types in Java
- Primitive Data types
- Wrapper Classes
- Declaring Variables
- Writing java program and running

### Conditional Statements

- If condition
- If else condition
- If else if condition (nested if)
- Switch case statement
- Examples for all the above conditions

### Loop Statements

- While loop
- Do while
- For loop
- For each loop
- Examples for all the above loops

### Array

- How to declare array
- How to store values in array
- Reading values in array

### Exception, error handling

- What are exceptions, errors
- How to handle exceptions in the program
- Using try and catch blocks
- Types of Exceptions
- Using of throws
- Throw
- Throwable

### Object Oriented Programming

#### Class

- What is class
- What are fields and methods
- How to create object for the class
- How to access fields and methods in the class

- Constructors
- What is abstract, final class
- Variable Types (instance, local, static)

## Polymorphism

- What is polymorphism
- Method overloading
- Constructor overloading
- Passing arguments to methods
- Calling methods in the class
- Return values from method
- Return objects from method
- Method arguments callbyvalue, call by reference

## Inheritance

- Why to do Inheritance
- How to reuse the fields and methods of parent class
- Overriding fields and methods of parent class
- Single Inheritance
- Multi level Inheritance
- Using super keyword
- Composition / Aggregation
- Difference between Inheritance and Composition

## Interfaces

- What is Interface
- Difference between class and interface
- When to use Interfaces
- Abstract class

## Encapsulation and abstraction

- What is hiding data
- Using access specifiers public, private, protected, default
- Accessing the public methods outside the class
- Difference in accessing in same package / different package

## Package

- What is package
- How to create a package
- How to import package into a different class

## Collections

- Use of collections
- Advantage of collection using Array
- How to add, remove, and insert value / elements into collections
- Using the collections like List, Set, ArrayList, HashTable
- Linked List

## Miscellaneous

- Dynamic binding
- Upcasting, downcasting
- Autoboxing, unboxing

## Using String, Date, Math classes and Examples

### JDBC Connections

- Working with Different Databases like SQL Server, Oracle, MySQL..etc

### Web Driver

- Introduction to Web Driver
- Configure Eclipse IDE (Adding selenium Libraries)
- Using FirefoxDriver API
- Working with Different Elements and programming
  - Edit boxes
  - Checkbox, Radio Buttons
  - Buttons
  - Links
  - Selecting values from a Dropdown
- Understanding xpath to locate elements in webpage
- Working with Table Elements
- Reading data from Table
- Using Actions class
- Handling keyboard, mouse events

### Data Driven Testing

- What is Data Driven Testing
- How to parameterize the data to the script using Excel
- Reading, writing data into Excel
- How to parameterize data to the script using Flat files

### Debug Scripts in Eclipse

- Understanding Debug
- Using Breakpoints
- Verify the values during debug

- Using step over, step into
- How to execute the scripts from framework

## Handling Windows

- How to handle multiple browser
- Handling alerts
- Handling windows alerts using (Auto it / sikuli)
- Handling Frames

## Recognizing elements in webpage

- Using xpath, DOM, CSS
- Running java scripts in WebDriver
- Recognizing duplicate elements
- Recognizing dynamically changing elements
- Using Regular expressions

## Configuring other Browsers

- Configure IE browser
- Configure Chrome browser
- Running scripts on different browsers

## TestNG Framework

- What is TestNG
- Create TestNG.xml file
- Integrate the Selenium Scripts and Run from TestNG
- Reporting Results & Analyze
- Run Scripts from MultipleBrowsers
- TestNG Annotations
- Tags in TestNG xml file
- Groups
- Reporting Results

## Selenium Grid

- Introduction
- RemoteWebDriver
- Configuring hub
- Configuring node
- Running scripts on remote computer

## Automation Life Cycle

- What is a Framework
- Types of Frameworks
- Modular framework
- Data Driven framework
- Keyword driven framework
- Hybrid framework
- Use of Framework
- How to develop framework
- Integration of the framework

## Page Object Model Framework

- Creating Repository class
- Using properties file
- Generating Log files (log4j)

## ANT / MAVEN

- Creating Maven project
- Creating build file
- Running the build

## WebServices Testing

- What is webservice
- Webservice architecture
- What testing we have to do in webservice
- Introduction to RestAssured
- Testing WebServices using RestAssured

## Appium ( Mobile Apps Automation)

- Configure Android Device
- Running scripts on Android Device

## Cucumber

- Understand Cucumber Framework
- Writing Feature Files
- Integration of Scripts & Feature Files
- Generating Reports
- Learn Gherkin Lang.

## Code Management Tool

- Understand usage of Code management Tools
- How to manage code in common location
- Understand Version Control
- Check in / checkout mechanism
- Checking the Histories.