- # **Selenium Course**:

**Module-1 Introduction**
- Introduction to Selenium
- What is Selenium?
- Why use Selenium
- Different flavours of Selenium
    - IDE
    - Web Driver
    - RC
- Selenium IDE
- Intalling 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
- Using if statements and loops in IDE.
- Echo, StoreEval and StoredVars Demystified

- Creating your own user extensions.
- Making a function in user extension to generate random email address.
- Reading XML from JavaScript using DOM.
- Parameterize your IDE test cases with customized use extension and XML.
- Regular Expressions in Selenium IDE.
- Handling JavaScript Alerts
- Capturing screenshots from Selenium IDE
- Use of Firebug Firefox plugin
- Exporting from the Selenium IDE into a Java JUNIT test framework
- The constraints on the IDE and how to fully extend Selenium
  Interview Questions

- **Module-2 -Java Basics**

  - Installing Java
  - Installing Eclipse
  - Features of Java
  - Eclipse Project
  - First Java program
  - Class
  - Objects

- Methods
- Datatypes
- Strings
- Conditional and concatenation operators
- Debugging programs in Eclipse

Conditional loops

- If statements
- While Loop
- For Loops
- Practical Examples
- Usage of loops in Selenium

Arrays

- Single Dimensional Arrays
- Two Dimnsional arrays
- Practical usage of arrays in Selenium
- Drawbacks of arrays

Functions

- What are Functions?
- Function Input Parameters
- Local Variables
- Global Variables
- Static and Non-Static Variables
- Static and Non-Static Functions
- Creating Objects in Java
- Meaning of static
- Why is main method static?
- Object and Object References
- Call by reference and Value
- Constructors
- Usage of Objects in Selenium
- Function Return Types

Inheritance

- Final keyword
- Why Inheritance?
- Types: Single, multilevel, multiple
- Sample Program

- Use of final in inheritance
- Overloading and Overriding Functions
- Dynamic polymorphism
- Interface
- Usage of Inheritance in Selenium
- Abstract class
- Interface vs Abstract class

Collections
- ArrayList Class
- HashMap Class
- Using ArrayList and HashTable of Collection API in Selenium framework
- Reflection API usage and importance
- Using Reflection API to make keyword driven Selenium framework

Files
- Reading/Writing Text Files
- Reading Properties File in Java
- Concept of jar file
- POI API in java
- Reading/Writing Microsoft XLS Files
- Log4j API for Logging

- Reading data from XML files using Java

Exceptions
- Errors
- Exceptions
- Throwable class
- Try Catch, Final and Finally
- Types of Exceptions
- Exception in selenium framework

Interview Questions

**Module-3-Introduction Selenium WebDriver**
- What is WebDriver?
- Difference between WebDriver and RC
- Advantages over RC
- Architecture
- Configuration
- First Selenium Program
- Profiles
- Capabilities

- Close and Quit
- IE Driver, Firefox Driver
- Various locator strategies

- WebDriver Interface

- WebElement(s) Interface
- CssSelectors Vs Xpaths
- Locator Strategy in WebDriver
- Selenium Web Elements
- Frames
- Links
- Windows
- Dropdown
- Handling cookies
- Handling Ajax Autosuggests
- WebTable Handling
- Downloading files using selenium
- Listeners- Using WebDriverEventListener
- Actions class in Webdriver
- Handling CSS menu with JavaScriptExecutor
- JavaScriptExecutor example
- Keyboard Events

- Data driven framework using MS Excel
- Working with table
- Handling various Tabs, Popup, Alert and Confirmation window
- Handling dropdowns
- Taking Screenshots of the web pages
- Implicit and Explicit Wait
- WebDriverWait Class and WebDriver.Timeout Interface
- ExpectedCondition interface and ExpectedConditions class
- WaitUntil Condition
- Testing https websites / Managing certificate errors in https websites in IE, Chrome and Mozilla
- Mouse Events : Mouse hovering
- Shopping cart exercies
- Password Encoding in selenium
- Print names of all facebook friends using Actions class
- Naviagtion Controls

- Interview Questions


- **TestNG+Maven**
- Basics
- TestNG-Different annotations

- Running a Test in TestNg
- Batch Running of tests in TestNg
- Skipping Tests
- Parameterizing Tests - DataProvider
- Assertions
- TestNg Reports
- Advantages over Junit
- Using TestNg in Selenium
- TestNg Maven Configuration
- Maven-surefire-report-plugin with testng
- Executing testng from maven on Command Prompt
- Solving problems
- Interview Questions

- **Automation Frameworks**
- TDD
- KDD
- BDD
- Cucumber
- Fitnesse

- **Selenium Grid**

- What is Selenium Grid?
- Working with Grid 2.
- Creating Nodes and Hubs
- Deciding number of browsers on a Node
- Deciding type of browsers on Node
- Limiting number of concurrent browsers on node
- Difference between maxSession and maxInstance
- 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
- Prioritizer Interface and CustomPrioritizer
- Interview Questions

- **Selenium + Mobile**
- Introduction to Appium
- WebDriver Wire protocol
- Concept of UIAutomator
- Concept of Native App
- Concept of Hybrid APP
- Building Xpaths
- Challenges faced in finding Elements and Workarounds
- Working with iOS/Android

- Interview Questions


- **Misc.**
- Using netexport plugin with selenium
- HAR files
- Capturing snapshot for failed operations
- Jenkins integration