

Basic-Selenium

Course Content:

PART-A:

Duration- 2 Weeks

-->Introduction to Automation

-->What?

-->When?

-->Why?

-->Automation Tool Types?

-->Advantages and Disadvantages of Automation

***Introduction to Selenium'

***Components Of Selenium

***Introduction to Selenium WebDriver Version 3

***Introduction to Selenium WebDriver Version 4

***Java Selenium Architecture

###Practicals:

-->Launching Empty Browsers

-->WebDriver Methods

-->Locators

-->types of Locators

-->WebElement Methods

PART-B:

Duration: 2 Weeks

***Advance Scenarios:

-->Handling Autosuggestion

-->handling Keyboard Strokes

- >Handling Mouse Hover Action
- >Handling Dropdown/Listbox
- >Handling Scrollbar
- >Handling SYNchronization Issues
- >Handling Multiple WebElements

***Popup:

- >Alert Popup
- >Hidden Division Popup
- >Frame Popup
- >Calendar Popup
- >FileUpload Popup
- >Browser Native Popup
- >Window Popup

PART-C:

Duration: 2 Weeks

FrameWork

**DDT(Data Driven Testing)

- >What is DDT?
- >Advantages of DDT

***POM(Page Object Model)

- >What is POM?
- >Advantages Of POM

***TestNG

- >What is TestNG?
- >Why TestNG?
- >Types of Annotation

-->Types of Execution

-->Advantages of TestNG

***Introduction to Maven

***Introduction to GitHub

***Introduction to Jenkins

Mock- 1 week

Testing: It is a process of identifying bugs

-->Testing can be done in two ways:

1: Manual Testing

2: Automation Testing

**Manual testing: Checking each and every functionality of an application manually without using any tool.

-->Disadvantages of Manual Testing:

1: It is a time consuming process

2: It requires more ManPower

3: It is tedious and monotonous job.

4: It is less accurate(Susceptible for human error)

**Automation Testing: Testing the functionality of an application by writing test script using automation tools. OR

-->Converting Manual Test Cases into Automation Test Scripts with the help of tools

**Automation Tool: It is a software which is used to test another software.

**Automation Tools Name are: selenium, QTP,Cypress, Test Complete, Appium, Sahipro, Playwright etc

**Advantages of Automation Testing:

1: Faster

- 2: Less time consuming
- 3: More accurate
- 4: Requires less ManPower
- 5: Better Quality software
- 6: Cross Browser Testing

****Disadvantages of Automation Testing:**

- 1: Skilled Manpower Required
- 2: 100% of Automation is not possible
- 3: if Manual Test case steps are improper than that testcases are not Automated.

Ques: Why we should do Automation Testing?

- 1: To avoid human mistakes
- 2: To reduce human efforts
- 3: To reduce Project cost
- 4: To reduce project duration
- 5: It is efficient and accurate
- 6: For Repetitive task which takes place in regression testing
- 7: To sustain in market competition.

Ques: When we should start with Automation Testing?

- 1: It will starts when feature are stable(After few Builds)

Ques: What type of testing perform in Automation?

-->Regression Testing

Ques: Is 100% Automation is possible?

--> NO

Ques: On which type of feature will you do Automation Testing?

-->Old and Stable feature(Bug free)

SELENIUM

-->It has introduced by "JASON HUGGINS" in 2004 at Thoughtworks in Chicago.

-->It is a most powerful tool used to test Web Based Application only.

-->It is a collection of in-built libraries.

***Advantages OF Selenium:

- 1: Its an Open Source
- 2: It supports Multiple Languages(java,python,Javascript etc)
- 3: It Supports Multiple Browser(Chrome,Firefox,Edge)
- 4: It supports majorly used OS(windows, Linux, MAc)
- 5: It supports cross browser testing
- 6: It can easily integrate with other tools(testNG, cucumber)

**Disadvantages of Selenium:

- 1: We can't automate captcha, OTP,images, barcode etc
- 2: We cannot handle desktop or window pages
- 3: 100% automation is not possible
- 4: It can automate only Web Based Application
- 5: Skilled labour
- 6: No Customer Support

***Essential Software For Selenium:

- 1: Selenium WebDriver file
- 2: Browser Like: Chrome,Firefox
- 3: IDE: Eclipse
- 4: Browser Driver Executable file (will work till WebDriver Version 3)

Ques: What is the latest version of Selenium WebDriver?

-->Selenium 4.37.0(We can use 4.26.0/4.27.0)

Ques: What selenium server standalone jar file contains?

-->It contains methods which are essential to perform actions

-->Methods contains logic to perform action.

****Flavours of Selenium/Components of Selenium**

1: Selenium RC(Remote Control)

2: Selenium IDE(Integrated Development Env.)

3: Selenium Grid

4: Selenium WebDriver

****Selenium RC:**

1: Here we write Automation Scripts using programming language(Java, Python etc) to automate web Applications

2: We need to install a separate server called as Selenium Remote Control Server

3: Here Server acts like a mediator between selenium scripts and browsers

4: RC server injects javascript program into the browser then only it will automate your Automation Test Script.

*****Disadvantages:**

1: Selenium RC will consume more time

2: Need to install server separately

3: Performance is slow as RC injects Javascript code into the server.

Note: Selenium RC is no longer in use and it is not supported

-->It has been deprecated in favour of selenium WebDriver, which is more efficient and stable compared

to RC.

****Selenium IDE:**

-->It is a Record and Playback tool.

-->Selenium IDE allows you to record interactions with a webpage and then automatically

generate test scripts based on those interactions.

-->This makes it accessible for users who are not familiar with programming as it generate test script in various languages(Examp: Java, Pyhton, Javascript etc)

***Selenium Grid:

-->It is used to run test script on multiple machines from a central point

-->Selenium grid is a powerful tool for parallel test execution, enabling you to test your application across multiple browsers, OS and configuration Simultaneously

--> It is designed to speed up the testing process by distributing the execution of tests across different environments.

***Selenium WebDriver:

-->It is a script based Automation tool which is used to automate Web Application

-->It is simple and robust

->Here test script can be developed in any programming language and can be executed directly in different browsers.

***Java Selenium Architecture:

1: Selenium Client Library Or Language Binding

2: W3c Protocol

3: Driver Executable file

4: Real Browser

-->Selenium supports python, java, JS etc programming language.

-->When we execute Test Script selenium API's will transfer each command to W3c protocol.

-->Each Command will be converted to HTTP session & transfer it to browser driver executable file

-->Every driver file by default contains HTTP server which will understand HTTP session & perform the action on browser.

-->Selenium supports multiple browser such as Firefox, Chrome, Edge etc
