Module Name: Selenium WebDriver

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Total Sessions: 19

* Selenium WebDriver
  + Automation Concepts
  + Configuration
  + Launching Different Browsers
    - Chrome
    - Edge
    - Firefox
    - Safari
  + Basic Methods of WebDriver
    - get()
    - getTitle()
    - getCurrentUrl()
    - getPageSource()
    - close()
    - quit()
  + Locators
    - Name
    - Id
    - ClassName
    - CssSelector
    - XPath
    - LinkText
    - PartialLinkText
    - TagName
  + Handling different controls
    - Text box
    - Command button
    - Check box
    - Radio button
    - Hyperlinks
    - Drop down list
    - List box
  + Synchronization
    - Thread.sleep()
    - ImplicitWait
    - ExplicitWait
    - FluentWait
    - PageLoadTimeout
  + Handling tables
  + Handling multiple windows
  + Handling alerts
  + JavascriptExecutor interface
    - Scrolling the page
    - Clicking on controls
    - Entering value in text boxes
  + Handling FileUpload control
  + Robot Class
  + Handling Menus
  + Mouse Actions
    - Click
    - Right click
    - Double click
    - Drag and drop
    - Hovering the mouse
  + Handling iframe
  + Screenshot
* TestNG
  + Advantages
  + Configuration
  + Executing Single test
  + Executing Multiple tests
  + Setting the priority
  + Annotations
    - @Test
    - @BeforeTest
    - @AfterTest
    - @BeforeMethod
    - @AfterMethod
  + Data driven testing via @DataProvider
  + Assertions
  + Reports
    - Normal Report
    - HTML Report
  + Executing test / tests via xml file
  + Parameterization
  + Keyword Driven Framework
  + Modular Framework
  + Page Object Module
  + Data Driven Framework
    - Reading the data from Excel
    - Writing the data to Excel
  + Hybrid Framework
* Maven
  + Introduction & Advantages
  + Configuration
  + Adding dependencies
  + Executing tests
  + Extent Report
* Cucumber
  + Introduction to BDD Approach
  + Advantages
  + Configuration
  + Feature File
  + Keywords in feature file
    - Feature
    - Scenario
    - Given
    - Then
    - When
    - And
    - Background
    - Examples
    - Scenario Outline
  + Step Definition
  + Runner class
  + Tags in Cucumber
  + Hooks in Cucumber
  + Data Driven Testing in Cucumber
* Revision of Java
  + Language Basics
    - Variables
    - Operators
    - Checking conditions
    - Loops (for loop and for each loop)
    - Functions
    - Arrays
  + Class & Object
    - Creating Class
    - Creating object
    - Constructor
    - Static members and functions
  + Inheritance
    - Extends keyword
  + **Interface**
  + Exception Handling
    - **throws** keyword
  + Collections
    - **List**
    - Set
    - Map

**Software Testing**

It is the process of checking Correctness, Completeness, Security & Quality of developed software application.

**Manual Testing Process**

1. Creating Test Scenarios
2. Creating Test Cases
3. Creating Test Data
4. Creating RTM

**Operations involved in Testing**

1. Entering data in the text box
2. Clicking on buttons
3. Navigation from one page to another
4. Selecting value from Check box, Radio button, Dropdown list, list box
5. Navigation from tabs
6. Validating the expected result with actual result
7. Generating report

**What is Automation Testing?**

* Perform all above actions to test any application via a machine.
* Machine in this context is Test Automat Tool / Automation Testing Tool
* Every tool is a software
* Every tool understand specific programming language

**Advantages & Need of Automation**

* Saves time
* Faster executing
* Reduces human efforts
* Regression Testing
* Less human errors
* Reusability
* Improve the quality
* 100% Test Coverage
* Compability Testing
* Huge amount of data

**When to Automate and which tests to be automated?**

* Stable build
* Repetitive task
* Large data
* Compability Testing
* Performance Testing
* Frequent Regression testing
* Security testing

**Types of Tools**

* Unit Testing
  + JUnit
  + NUnit
* GUI Testing / Functional Testing
  + Selenium WebDriver
  + Tosca
  + QTP
  + Appium
  + Playwright
* API Testing
  + Postman
  + REST API

**Process of Automation**

1. Planning
2. Selection of Tool
   1. Type of application to be tested. (AUT / SUT)
   2. Cost of tool
   3. Support availability
   4. Tool availability / market presence
   5. Testers availability
3. Creating Test Script
4. Creating Test Data
5. Execution
6. Report
7. Maintance

**Selenium**

It is suite / bundle of Test Automation Tools to test Web Based Applications (Web Sites)

**Components of Selenium**

1. Selenium IDE – Record and Playback
2. Selenium Grid – Parallel Execution
3. Selenium RC -
4. Selenium WebDriver

**Selenium WebDriver**

* It is the automation testing tool to test web based applications
* It is an API (Application Programming Interface)
* Interface in Java

**Pre-Requisite for Selenium WebDriver**

1. Minimum Windows 10
2. Java (Minimum JDK 11)
3. Editor
   1. Eclipse
   2. Idea Itellij
4. Updated Browser
5. Selenium Jar File