**Selenium Automation Testing**

1. ***Difference Between Selenium Web-Driver, Selenium IDE & Selenium Grid* :-**

***Selenium Web-Driver :-***

*Selenium Web-Driver is to write the code in Multiple Programming Language and with Multiple Browsers. It can Handle Complex Testing Scenarios.*

* Require More Maintenance.
* Used for Handle Simple Test case Recording and Playback.
* Support Multiple Programming Languages.
* Multiple Browser Support.
* Require Coding Knowledge.
* Parallel Testing in Multiple Machines is Support.

***Selenium IDE :-***

*Selenium IDE easy way to Record and Playback the Tests and its easy Understand for the Beginners Level and Non-Technical members.*

* Easy Maintenance.
* Used for Handle Most Complex and Time Consume Projects.
* Support Ruby, Java, Python etc..,
* Support for Firefox-Browser (Gecko-Driver) and Chrome-Browser.
* Coding knowledge is Not Necessary.
* Parallel Testing is not Support.

***Selenium Grid:-***

*Selenium Grid is a smart proxy server that makes it easy to Run the Tests in parallel on Multiple Machines and Multiple Browsers Simultaneously.*

* Require Infrastructure Setup
* Used for Handle the application in Different Platforms and Browser at same time.
* Support Multiple Programming Languages.
* Multiple Browser Support.
* Require Coding Knowledge.
* Parallel Testing in Multiple Machines is Support.

1. ***Selenium and Uses in Automation Testing :-***

## ****Selenium****:-

## *Selenium is an open-source, automated testing tool used to test web applications across various browsers.*

1. Selenium is an Open-Source Web Automation Tool, currently in High demand and widely Used Tool in Worldwide.
2. It is one of the Best QA automation Tools that can Automate Multiple OS Like Windows, Mac, and Linux and Web Browsers like Firefox, Chrome, IE etc..,
3. Selenium Web-driver is powerful Because it Supports Multiple Programming Languages, Various Browsers & Different OS.
4. Also Selenium supports Mobile Applications like iPhone, Android etc..,
5. Selenium allows for parallel execution of tests, which means multiple tests can run simultaneously on different browsers.
6. Selenium can Automate the Repetitive and Time-consuming tasks, So it save Time in Project Development.
7. Selenium Integrated with Multiple Frameworks Like Test-NG, Cucumber, Page Object Model etc…,
8. Using this Frameworks Code Re-usability and Less code

Maintainable.

**3*. Browser Drivers used in Selenium :-***

Here are Some Major Used Browser Driver in Selenium :

1. ***Chrome-Driver***: This driver is used to Automate Google Chrome browser. Check the Version of the Chrome Browser installed in System and Download via this Link :

\* <https://chromedriver.chromium.org/downloads>

\* As Per OS Zip File has to download

1. ***Gecko-Driver***: Gecko-Driver is used for Automating Mozilla Firefox Browser. Gecko-Driver is required for interacting with Firefox Browser. Check the Version of the Firefox Browser installed in System and Download via this Link :

\*<https://github.com/mozilla/geckodriver/releases/tag/v0.33.0>

\* As Per OS Zip File has to download.

1. ***Microsoft Edge (EdgeDriver)***: This driver is used for automating the Microsoft Edge Browser.Check the Version of the Edge Browser installed in System and Download via this Link :

\* <https://developer.microsoft.com/en-us/microsoft-edge/tools/webdriver/>

\* As Per OS Zip File has to download.

1. ***SafariDriver***: This Driver is used for Automating the MacOS(Apple Devices)Check the Version of the Safari Browser installed in System and Download via this Link : \*<http://www.java2s.com/Code/Jar/s/Downloadseleniumsafaridriver2291jar.htm>

\* As Per OS Zip File has to download.

Some other Browser drivers are also used Likes Chromium driver, Opera driver etc…,

***4. Web Driver Script :-***

1. Setup the IDE and Install it.

2. Choose a Required Programming Language to code and download and Install in System.

3. Download the Selenium Web-Driver as per the Chosen Programming Language.

4. Download the Browser Driver to Automate.

5. Create New Java Project

6. Right Click on Package --> Click Build-path --> Configure Build-Path --> Click Libraries in Java Build path -->

Click Class-Path --> Click Add External Jar --> Add Jar files

(Selenium jar and Browser driver jar) --> Apply--> Apply and Close --> Refresh the Project.

1. Referenced Libraries are Added additional in Project.
2. Here the Code

package task\_15;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.WebElement;

import org.openqa.selenium.chrome.ChromeDriver;

public class Q5\_Simple\_Search\_Google {

public static void main(String[] args) {

// TODO Auto-generated method stub

System.setProperty("webdriver.chrome.driver", "D:\\Driver\\Chromedriver116\\chromedriver-win64\\chromedriver.exe");

WebDriver driver = new ChromeDriver();

driver.get("https://www.google.com/");

WebElement searchbox = driver.findElement(By.id("APjFqb"));

searchbox.sendKeys("Guvi");

searchbox.submit();

String name = driver.getTitle();

System.out.println(name);

}

}