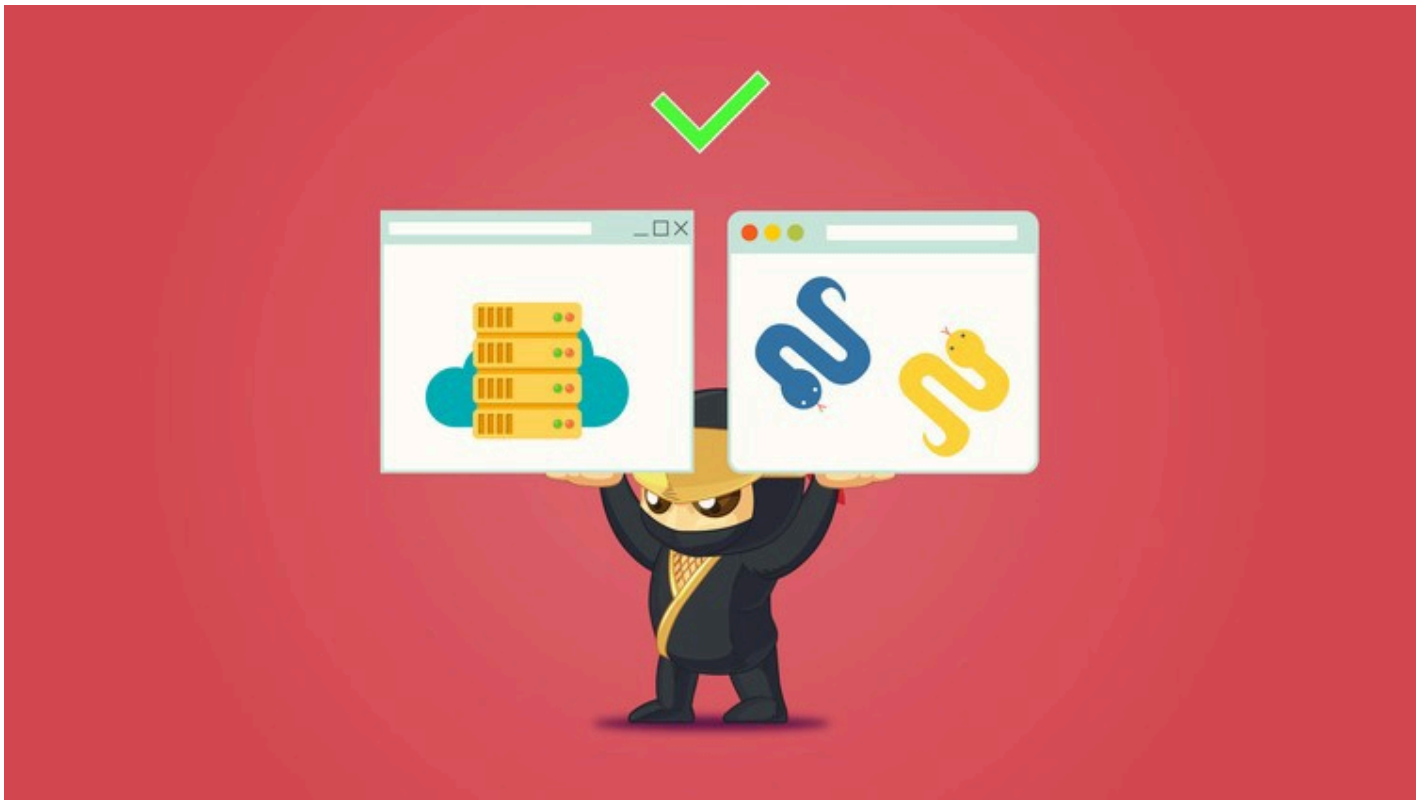
Downloaded from: justpaste.it/53w3k

Explain the use of Selenium Webdriver with Python

Selenium Webdriver is an open-source testing framework that automates browsers for testing web applications. It can run multiple tests over different browsers. It helps in testing across different browsers. It runs on different Operating Systems. Selenium Webdriver doesn't need any special server to run tests. Furthermore, the Webdriver starts a browser itself and controls it.



Selenium Webdriver interface includes various methods such as; getTitle(), close(), quit(), etc. **Selenium online training** helps to enter content in the way of structures.

Selenium Webdriver interacts with any web browser like a human being. It also supports the HTML Unit browser which works very fast.

A Python is a high-level object-oriented programming language used for various applications. It consists of a general-purpose coding language. It enables developers to read and translate Python code very easily than other programming languages. It plays a major role in the automation process. It uses a simple syntax to make the functions readable. And its stateless functions avoid any disruptions.

Furthermore, it helps the developers to reuse the same code for multiple projects.

Selenium Webdriver architecture

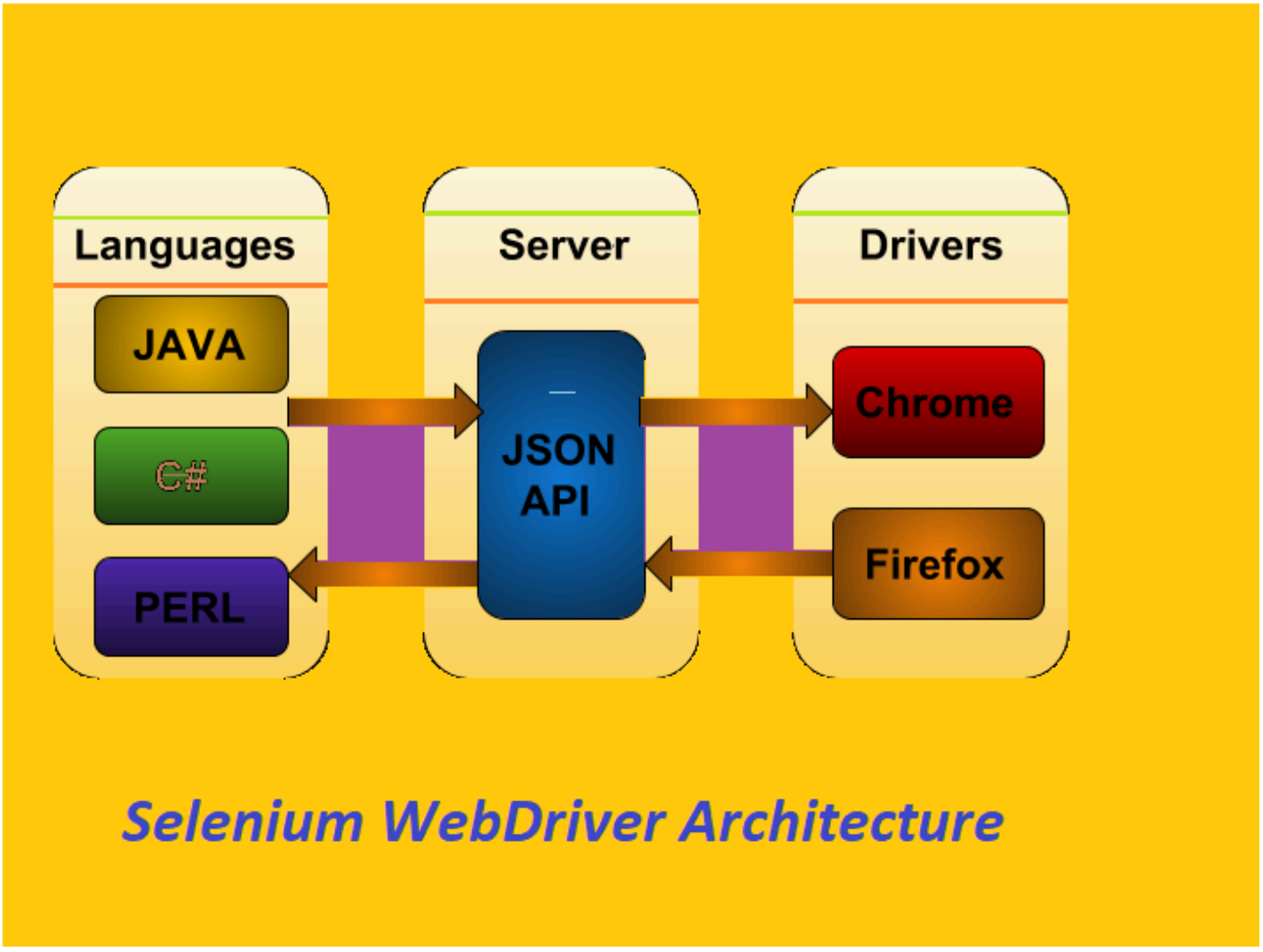
This architecture includes a few major components. These components help Webdriver in many ways. Furthermore, this architecture explains the work of a Selenium Webdriver. These are;

- Selenium Client Library
- Browser Driver
- JSON wire protocol
- Browsers

Now, we will discuss the above architecture components. These components serve different purposes.

Selenium Client Library: Selenium supports multiple language binding libraries such as Python, Ruby, Java, etc. These language bindings are developed by Selenium developers. But we can use these bindings by downloading them as per requirement. These client libraries serve different purposes. It is flexible to use for functional and regression test cases.

Browser Driver: Selenium provides a specific browser driver to each browser. Each driver interacts with the respective browser through a secure connection. These browser drivers are language-specific also. We can get these drivers according to the language we use for the test through download.



JSON wire protocol: JSON or JavaScript Object Notation is an open standard transport mechanism that supports the transfer of data between the client and server on the web. It also supports various data structures like arrays, objects, etc. Besides, this script makes it easier to read and write data.

Browsers: Selenium supports different browsers such as Chrome, Safari, IE, Firefox, and so on. These are modern browsers with a high-quality browsing experience.

Selenium Webdriver helps to run test scripts faster than any other Selenium suite. It directly communicates with the browser with the need for any server. It also handles dynamic web elements such as alerts, checkboxes, etc. in a better way. It contains a set of locators that helps in identifying web elements on any web page.

Hereunder, we will discuss some Pros & Cons of Selenium components.

Pros

1. Being a free automation testing tool, it supports multi-browsers and OS.
2. It's an advanced version of RC and must be faster in performance.
3. It integrates quickly with other testing frameworks.
4. Besides, it coordinates with all objects.

Cons

1. It doesn't contain IDE for creating scripts. It uses other IDEs for scripting purposes.
2. It supports web apps only.

Selenium Python framework

Many frameworks are test-driven. Among them, the Robot Framework is the most used Python test framework. This framework requires installing some prerequisites. To use Robot Framework, we need the latest version of Python. It also requires installing a Python package manager. This package helps to run the framework very easily.

At last, we need to download a development framework. The PyCharm Community Edition is the best framework among the developer's beliefs. We can use any IDE in this case.

This framework has many aspects that support the testing platform under the ***Selenium with Python training*** framework.

Let us look at the pros and cons of using Robot Framework as follows.

Advantages

- It uses an approach namely keyword-driven-test-approach. It makes it easier for the tester to create a simple test case. It automates the test very easily.
- It consists of a vast ecosystem including generic-tools and libraries for the test. So that independent elements can be used for different projects.

Disadvantages

- Robot Framework is very helpful but it becomes difficult to prepare customized reports based on HTML.
- Another disadvantage of this framework is that the parallel test is inadequate.

The above things explain the use of the Robot Framework in a balanced way. In addition to this, it requires Python's latest version to support it.
A test automation framework is an integration of tools, technologies, and processes. It helps any organization to implement the automation efficiently by simple means. This is used because it provides scalability, maintenance, reusability, and proper configuration.
Using Python, we can create a complete automation framework easily. This framework works only with the support of Python and its various editions. These editions must be updated regularly.
Advantages of Web automation tool
There are so many automation tools available today. But Selenium is the most popular web automation testing tool. It supports web automation on different browsers, languages, Operating Systems, and other platforms. In addition to this, multi-browser support makes it easy to use.
Besides, web automation **selenium training** helps in time-saving while testing web applications. Moreover, it has many advantages that save the time and cost of testing various applications.
The following are the few advantages of a web automation tool.

- Creating faster reports
- Quick detection of manual errors
- Easy documentation
- And it allows regular testing also.

Selenium Webdriver example
In this example, we will try to understand the Selenium Webdriver API. Webdriver is a tool to automate web application testing. Besides this, it provides user-friendly APIs that make the testing easier.
We can explain it with an example of web testing using Selenium Webdriver. It includes the pack of JavaScript and Python to perform this test. In addition to this, it has to follow few scripts in its performance.
At first, we need to set up the Selenium framework following the script.
python python_selenium_example.py
After initiating the project, it requires to install the Selenium Webdriver framework. This framework includes various things that support the test process.
Furthermore, in this test we will have to follow some steps that are hereunder;

- Starting the browser with Webdriver
- Insert Title
- Enter Test Python
- Enter Assert text
- Now close the browser.

The following is the process in detail.

```
from selenium import webdriver
driver = webdriver.Chrome(r'C:\Users\drivers\chromedriver.exe')
driver.maximize_window()
driver.get("http://www.seleniumeasy.com/test/basic-first-form-demo.html")
eleUserMessage = driver.find_element_by_id("user-message")
eleUserMessage.clear()
eleUserMessage.send_keys("Test Python")
eleShowMsgBtn=driver.find_element_by_css_selector('#get-input > .btn')
eleShowMsgBtn.click()
eleYourMsg=driver.find_element_by_id("display")
assert "Test Python" in eleYourMsg.text
driver.close()
```

The above script gives an idea about how Python is useful for Selenium Webdriver. It's just a simple example to get the knowledge.

Components of Selenium

There are many components of Selenium. Each element is important in the development of web applications. These elements are Selenium IDE, Selenium Client API, Selenium Webdriver, Selenium RC, etc. Each of these elements has some impact on the automation testing of web applications. In addition to this, it helps the tests to complete faster.

To write broad applications for various tests, both Python and Java can be helpful. But to automate simple tests, Python is the best way to use it with Selenium.

This proves that Selenium with Python is better than Java programming language. The components are the key factors of Selenium that provide a great capability in testing. These help in improving its performance. Furthermore, the **Selenium online courses** proves that it works more smoothly with the use of Python.

Advantages of Selenium Webdriver

- It is an open-source tool available for testing web applications.
- It supports Operating Systems like Windows, Linux, Mac, etc.
- It is compatible with different web browsers like Chrome, Firefox, IE, etc.
- A Selenium Webdriver provides an easy way to implement the task.

- Besides, it offers reusability and integration of various services. Along with this, it supports mobile devices also.
- Furthermore, it is flexible to use in different environments.

Selenium Webdriver allows us to select a programming language to create test scripts. It makes it flexible to use and time-consuming.
Furthermore, it has a great capability of working with different frameworks. It supports different programming languages Such as; Java, Python, .Net, Ruby, Perl, Groovy, etc. Another advantage of Selenium Webdriver is that it uses on the HTML unit browser

Why is Python useful over Java in Selenium?

Few points spell Python is better than Java to use in Selenium. Such as;

- Python is faster in running than Java programs.
- Python uses indentations while Java programs use traditional braces to start and end the blocks.
- Python is flexible and compatible with different languages over Java programs.
- Python uses dynamic typing while Java uses the static method.
- Furthermore, Python is easy to use over Java in many aspects.

Thus, the above writings explain the use of Selenium Webdriver with Python. Web drivers are tools that support multiple languages while testing web applications with automation. **Selenium testing course online** is a framework that helps in testing web application
To gain more knowledge and skill in this field one can opt for Selenium Online Training through various online platforms. This learning may enhance skills and helps in the career development of the aspirants for more **selenium online training Hyderabad**.