

DevOps - Assignment

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Course : 3

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Course Name : Selenium Automation
Testing For Beginners
(Udemy)

Course Summary

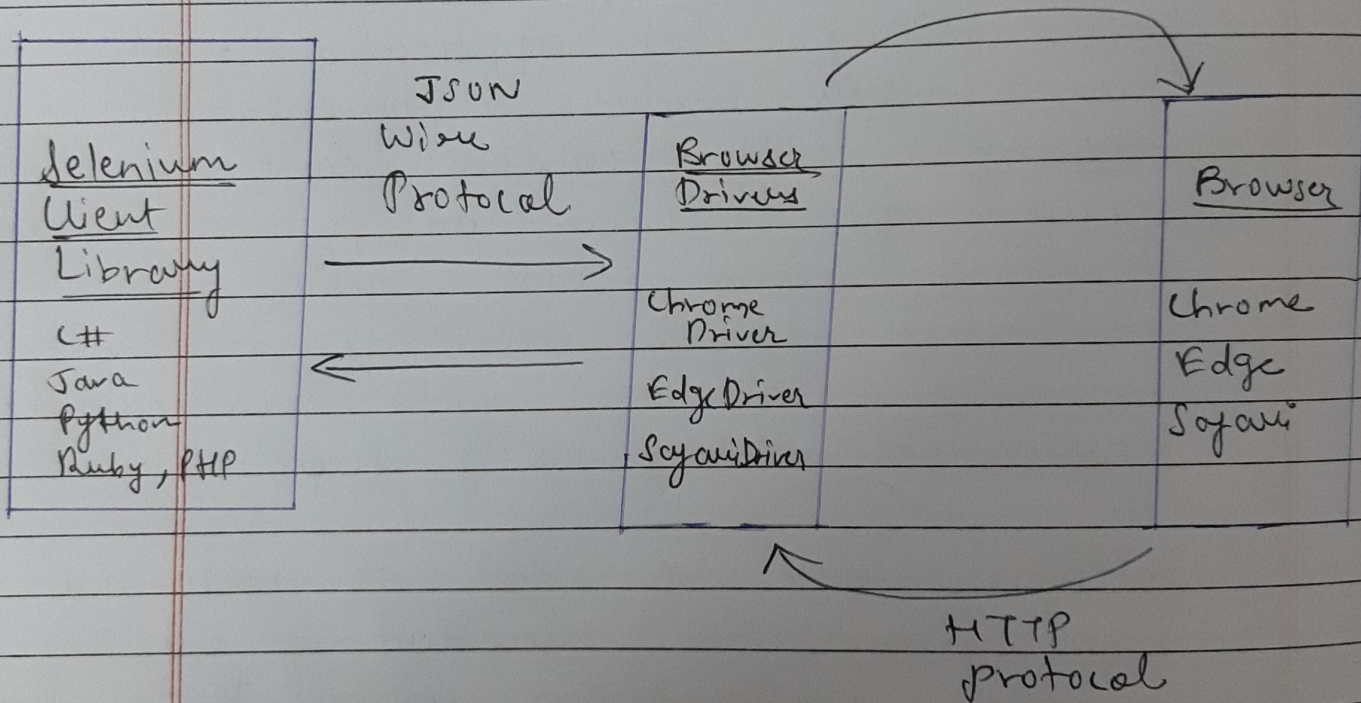
Selenium is an open-source framework for testing web applications. It is widely used for automated testing. This course covers set-up of selenium on a windows machine and some basic knowledge about working with selenium to test web applications (automate testing using scripts).

Selenium can be used to automate browsers, i.e., instead of clicking buttons and filling up text boxes on our own, we can write a script which performs all these. This can be used for automated testing. No manual intervention required.

* Advantages of using Selenium as automation tool :-

- It is open-source tool, free to use
- Works with most programming languages : Java, Python, Ruby, C#, etc.
- Supports all operating systems
- Supports all major vendors of browsers - Firefox, Chrome, Opera, etc.
- Large community to help developers.

* Selenium WebDriver Architecture



Selenium scripts interact with browsers via browser drivers. These drivers are executable files which act as interface. Selenium library communicates with drivers using JSON wire protocol. Drivers

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communicate with browsers using HTTP protocol.

* Environment setup : Following steps were followed to set-up selenium on windows →

- ① Download & install Java
- ② Setup Java Path
- ③ Download & install Eclipse (IDE)
- ④ Download Selenium client library files (.jar file)
- ⑤ Import Selenium client library files in Java project.

* Working with selenium.

- Some basic operations were covered in course :- how to open & close an URL on chrome browser.
- Locators & Identifiers :- To find a particular web element and perform some operation on it.
eg:- We can search for buttons or text boxes and perform operations like clicking & filling textboxes.

Locators in selenium :- name, Id, Class name, Tag Name, Link Text, Partial Link Text, CSS, XPath.

To find an element, we choose one of the above attributes which has unique value for that particular element.

After finding the elements, we can perform actions like click, sendText, getText, hovering the mouse, etc.

- XPath locators are useful ~~for~~ ~~dynamic attributes~~ ~~when~~ attributes are not unique or when no attribute available to uniquely identify an element.

Types of XPath ~~locators~~ :-

- (1) Absolute XPath
- (2) Relative XPath
↓
most preferred to search for a web element.

* Waits in Selenium & Mouse operations

- Waits are used for synchronization and to prevent script from falling in infinite loop.
- Page load timeout :- We set a duration for waiting for page to load. If page doesn't load before timeout, an exception (timeout) is thrown.
- Implicit wait :- Load timeout for individual web elements.
- Explicit wait :- Wait on web elements based on some condition. Eg:- wait till element is visible.