Chapters:

Trying to figure out about selenium as automation tool

I aced Selenium in my Project

Newbie to Java

Took Java Seriously to automate Web Apps

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Chapter 1

Trying to figure out about selenium as automation tool

What is Selenium?

Selenium is a open source automation testing tool used to validate web applications across different browsers and platforms. It supports multiple programming languages like Java, C#, Python etc. to create Selenium Test Scripts.

What are advantages of Selenium?

* Selenium is an Open Source Tool so it is free to use for automating our web applications
* It supports multiple programming languages and capable to operate on almost every operating systems and range of browsers.
* It is independent of the language that the web Application is using.
* It has robust Element Locators.
* Selenium support integration of Open source frameworks like TestNg, Junit with Maven and Jenkins.
* Selenium supports Web and Mobile Applications.

What are Limitations of Selenium?

* Selenium supports only web based Applications.
* It has dependency on third party tools for complete benefit.
* Selenium has no official technical support team.
* Selenium has limited Support for Image based Testing, Captcha and bar code readers.
* Selenium has no Built-in reporting Facility.
* Also it has challenges with IE browser.

What are the different Components of Selenium framework?

* Selenium IDE – It is record and play tool which will record all the user actions and play them back. Its main disadvantage is that it can’t handle the dynamic web elements and difficult to maintain and pass multiple test data
* Selenium RC – Selenium Remote Control is
* Selenium Web driver
* Selenium Grid

What is selense?

It is a set of commands in selenium used for running a test.

* Actions- used for performing interactions and operations with target elements.
* Accessors- used for storing values in a variable.
* Assertions- used as checkpoint.

What is selenium WebDriver?

It is a collection of Native APIs that directly interacts with Browser, and they give more control and faster than RC APIs.

What are the different types of Webdriver APIs supported in selenium?

|  |  |  |
| --- | --- | --- |
| GecoDriver | Firefox driver | Firefox |
| Microsoft Webdriver | Edge, internetExplorerDriver | IE |
| Google Chrome Driver | ChromeDriver | chrome |
| HTML Unit Driver | WebClient | Chrome, FF, IE |
| Open ChromeDriver | ChromeDriver | Opera |
| Safari Driver | SafariDriver | Safari |
| Android Driver | Android Driver | Android Browser |
| IOS Driver | IOS Driver | IOS Browser |
| EventFiring WebDriver | EventFiring WebDriver | All |

Explain selenium webdriver

* SearchContext is super most interface in selenium, which is extended by another interface webdriver.
* All abstract methods of search context and webdriver interfaces are implemented in remote webdriver class.
* All browser related classes such as firefoxdriver etc extends remotewebdriver class.
* If we use webdriver driver = new remote webdriver( new url desiredCapabilities Firefox());) we need to mention where selenium server is located and which web browser you want to use.
* For Selenium grid we must use remotewebdriver.

What is the use of creating reference variable 'driver' of type webdriver?

* If we create a reference variable driver of type webdriver then we could use the same driver variable to work with any browser of our choice such as IEdriver, SafariDriver etc.
* WebElement in selenium represents an HTML element. It basically represents a DOM element in a html element.

How to Launch different browsers using selenium webdriver?

* Webdriver is an interface, we need to create object of the required driver class such as firefoxdriver, chromedriver etc.
* example: WebDriver driver= new FirefoxDriver();

What are different types of Locators?

* By.id()
* By.name()
* By.xpath()
* By.cssSelector()
* By.tagname()
* By.className()
* By.linkText()
* By.PartialLinkText()

Which locator is best to use for identifying the webelement?

* ID is the best to use as id will be unique for any webelement in the DOM and to removes the duplicate element finding issue.
* The order of using locators most likely - ID>NAME>CSS>XPATH

Why is CSS selector better than xpath?

* xpath engines are different un each browser , hence makes them inconsistent. IE doesn't have a native engine, therefore selenium injects its own xpath engine for compatibility of its APIs.
* Xpath tend to become complex and hence make hard to read in my opinion.

What is the syntax of xpath and CSS?

* driver.findElement(By.xpath("//tag[@attribute='value']"))
* driver.findElement(By.css("tag[attribute='value']"))

What are relative and Absolute xpaths?

* Absolute Xpath is the direct way to find element. The disadvantage of absolute xpath is that for any change made in the path of the element then xpath will fail. It starts with root node or a single forward slash(/).
* Relative Xpath is a url that contains a portion of full path and it is alternatively referred as partial path/ non- absolute path.
* A Relative path is used to specify the location of a directory relative to another directory. A relative path starting from element you want to refer to and go from there.
* Absolute Xpath always starts with double forward slash, it directly interacts with current node of element. It is the shortest way to navigate to an element on a webpage.
* Absolute Xpath: /html/body/div/span
* Relative Xpath: //div[@class='value']//h4[1]

How to handle dynamic webelements using xpath?

* Using xpath with contains - //[contains(@type,'sub')] , //div[contains(tect(),'value')] OR/AND - //div[@type='submit' OR/AND @name='namevalue'] Starts with - //label[starts-with(@id,'message')] following - //[@type='text']//following::input[1]
* By using Ancestor keyword in the xpath - //[text()='value']//ancestor::div Child - //[@id='value']//child::li
* By using preceding keyword in the xpath - //[@type='value']//preceding::input following-sibling - //[@type='value']//following-sibling::input
* By using parent keyword in the xpath- //[@id='test']//parent::div Self - //[@type='value']//self::input
* By using Descendant keyword in the xpath - //\*[@id='value']//descendant::a

What is difference between xpath and CSS selector?

|  |  |
| --- | --- |
| Xpath | CSS |
| Easy to write and remember | Bit Complex |
| Various ways to find xpath | Less than xpath |
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