1. **What is Selenium? What are the different selenium components? Explain about selenium webdriver?**

Selenium is **an open-source tool that automates web browsers**. It provides a single interface that lets you write test scripts in programming languages like Ruby, Java, NodeJS, PHP, Perl, Python, and C#.

**Selenium components:**

* Selenium IDE.
* Selenium WebDriver.
* Selenium Grid.

**Selenium webdriver:**

Selenium WebDriver is a web framework that permits you to execute cross-browser tests. This tool is used for automating web-based application testing to verify that it performs expectedly. Selenium WebDriver allows you to choose a programming language to create test scripts.

1. **How does selenium communicate with the web browsers?**

For every Selenium command, there is a respective REST API in JSON Wire Protocol. Selenium works through API commands, such as GET and POST, and will function based on the Selenium script requests it gets. The requests then get sent to the HTTP server of the browser driver, as well as the browsers through HTTP.

1. **What are the locators available to find an element using selenium?**

\*Class name

\*Id

\*Tag name

\*Link tag

\*Partial link text

\*Xpath

\*Css

\*Name

1. **Why Id is preferable than x-path?**

By.ID() is the faster technique because at its root, the call goes down to document. getElementById(), which is optimized by most browsers. But, finding elements using XPath is better for locating elements having complex selectors, and is no doubt the most flexible selection strategy.

1. **How to select value in dropdown?**

A dropdown is represented by <select> tag and the options are represented by <option> tag. To select an option with its value we have to use the selectByValue method and pass the value attribute of the option that we want to select as a parameter to that method.

1. **What is the difference between Absolute path and relative path?**

**Absolute Xpath**: It contains the complete path from the Root Element to the desire element.

**Relative Xpath**: This is more like starting simply by referencing the element you want and go from the particular location. You use always the Relative Path for testing of an element.

1. **How to verify if the given radio button is selected or not(safari radio button)(it is not taught but you can explore)**

Try here:

<https://leafground.com/radio.xhtml>

1. **Difference between System.setProperty and webDriverManager?**

setProperty(“propertyName”, “value”)”. It implies that it sets the system property 'propertyName' to have the value 'value'. While testing with Selenium, you will make use of the setProperty method because the browser doesn't have a built-in server to run the automation code.

WebDriverManager is an open-source Java library that carries out the management (i.e., download, setup, and maintenance) of the drivers required by Selenium WebDriver (e.g., chromedriver, geckodriver, msedgedriver, etc.) in a fully automated manner.

1. **Write the syntax for preceding and following Xpaths?**

Syntax: parent::node()

The below example will selects the parent node of the input tag of Id='email'.

Ex: //input[@id='email']/parent::\* the above can also be re-written as //input[@id='email']/

1. **How to get an attribute value using selenium webdriver?**

We can get an attribute value of an element in the Selenium Webdriver. This is achieved with the help of the getAttribute method. In an html document, each element is identified with its tagname along with the element attributes with their values.