

1)What is Selenium? What are the different Selenium components? Explain about Selenium Webdriver?

- **Selenium** is a free (open-source) automated testing framework used to validate web applications across different browsers and platforms. You can use multiple programming languages like Java, C#, Python etc to create Selenium Test Scripts.
- Selenium Software is not just a single tool but a suite of software, each piece catering to different Selenium QA testing needs of an organization. Here is the list of tools

Selenium has four major components:

- Selenium Integrated Development Environment (IDE)
- Selenium Remote Control (RC)
- WebDriver
- Selenium Grid

Explain about Selenium Webdriver:

- ❖ **Selenium Webdriver** is an open-source collection of APIs which is used for testing web applications.
- ❖ The Selenium Webdriver tool is used for automating web application testing to verify that it works as expected or not.

It mainly supports browsers like,

- * Firefox
- * Chrome
- * Safari
- * Internet Explorer.
- * Opera

2)How does Selenium communicate with the Web browsers?

- To communicate between server and client (browser), selenium web driver uses JSON. JSON Wire Protocol is a REST API that transfers the information between HTTP servers.
- Each Browser Driver has its own HTTP server.

3)What are the locators available to find an element using Selenium?

- By CSS **ID**: *find_element_by_id*
- By CSS **class name**: *find_element_by_class_name*
- By **name** attribute: *find_element_by_name*
- By DOM structure or **xpath**: *find_element_by_xpath*
- By **link text**: *find_element_by_link_text*
- By **partial link text**: *find_element_by_partial_link_text*
- By HTML **tag name**: *find_element_by_tag_name*

4)Why ID is preferable than X-Path?

- **ID is considered as unique key so there cannot be more than 1 elements for same ID** while Xpath is created using relative path/position of elements, so there can be cases when we can get 2 or more elements for same Xpath.
- If we talk in terms of performance then finding element via ID is very much fast than that of Xpath.

5)How to select value in dropdown?

- The various methods available under Select class in Selenium to select a value from a static dropdown.

They are as listed below,

- `selectByVisibleText(String args)`
- `selectByIndex(String args)`
- `selectByValue(String args)`

6) What is the difference between Absolute Path and Relative Path?

- ❖ **Absolute Path**: An absolute path is defined as specifying the location of a file or directory from the root directory (/). In other words,we can say that an absolute path is a complete path from start of actual file system from / directory.

- ❖ **Relative Path:** Relative path is defined as the path related to the present working directory(pwd). It starts at your current directory and never starts with a / .

7) How to verify if the given check box is checked or not?

- First, select the checkbox using a DOM method such as `getElementById()` or `querySelector()` .
- Then, access the checked property of the checkbox element. If its checked property is true , then the checkbox is checked; otherwise, it is not.

8) Difference between `System.setProperty` and `WebDriverManager`?

- ❖ **WebDriverManager:** Selenium WebDriver is an automation tool widely popular and is useful to run tests against multiple browsers like *Google Chrome browser, Firefox Browser, Internet Explorer*, etc. This type of testing done on different browsers is usually known as Cross-Browser Testing.
- ❖ **System.setProperty:** So if you want to execute *Selenium WebDriver* automation scripts on the Chrome browser, then you need first to download *chromedriver.exe* and then use the `System.setProperty` method.

9) Write the syntax for preceding and following x-paths?

- ❖ **Following xpath:**

`//label[text()='FlowerKing']//following-sibling::input`

- ❖ **Preceding xpath:**

`//input[text()='FlowerKing']//preceding-sibling::label`

10) How to get an attribute value using Selenium WebDriver?

- To get the attribute value using selenium webdriver, we can use '**`element.getAttribute(attributeName)`**'.
- If we try to get the attribute value that doesn't exist for the tag, it will return null value.