



Automation and Selenium Interview Question & Answer – Part 1

Learn Automation from Scratch

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Agenda

First 25 - Automation Testing and Selenium Interview Question & Answer

Q1: What is Automation Testing?

Automation testing is a Software testing method or technique to test any application and compare the actual result with the expected result. This can be achieved by designing test scripts using any relevant automation testing tool. Now a days Automation is vastly used to automate repetitive tasks and other testing tasks which are difficult to perform manually.

Q2: Why do we prefer Automation Testing instead of Manual Testing?

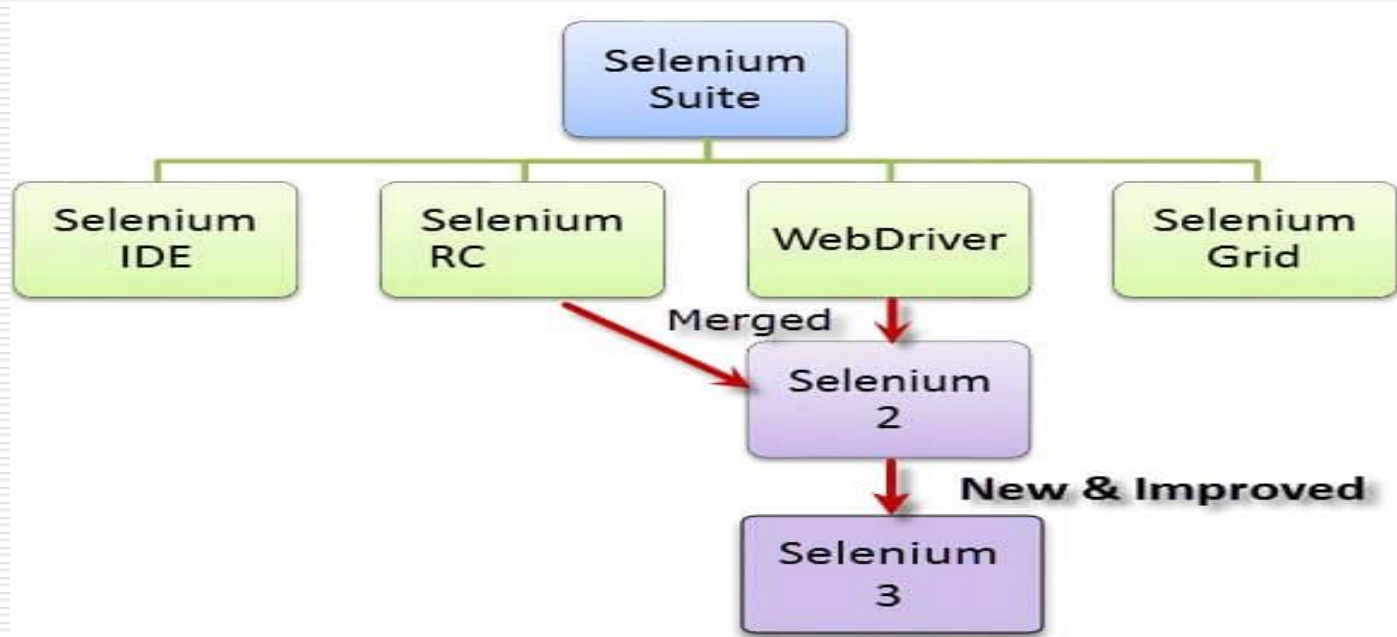
In manual testing test cases are executed manually without any proper support from relevant tools. However, for automated testing, test cases are executed with the assistance of one or more appropriate tools. Automation Testing is also more reliable as there is less chances of human error. In manual testing we have to run test cases manually every time based on our need, hence it is time consuming. However, in automation testing once scripts are ready we can run the test cases any number of time with different combination of data with minimal time.

Q3: What are the different tool available in market for Automation Testing?

There are lots of free and licensee automation tool are available in the market now a days. Some of the important tools are listed below:

- ❑ Selenium: Very powerful free tool for testing of Web Applications. Provides multiple browser support.
 - ❑ QTP/UFT: Very useful tool for non-web applications and comes with a built-in object repository.
 - ❑ RFT: Support automated testing for functional, regression, GUI and data-driven testing.
 - ❑ Tosca: Powerful automation tool for functional and regression testing of various software products
 - ❑ Silk: Automated functional and regression testing tool for desktop, mobile, and web applications.
 - ❑ Sikuli: Open source tool for GUI testing.
 - ❑ Soap UI: Automation tool for API testing.
 - ❑ Appium: Automation tool that supports mobile testing, native app testing and mobile web application testing.
 - ❑ TestNG: TestNG is not an automation tool in itself, however, it provides great support to automation frameworks built with selenium, appium, rest assured etc.
 - ❑ Junit: Mostly used for Unit testing by the developers.
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Q4: What are the different components available in Selenium?



- **Selenium IDE**, a Firefox add-on that you can only use in creating relatively simple test cases and test suites.
 - **Selenium Remote Control**, also known as **Selenium 1**, which is the first Selenium tool that allowed users to use programming languages in creating complex tests.
 - **WebDriver**, the newer breakthrough that allows your test scripts to communicate directly to the browser, thereby controlling it from the OS level.
 - **Selenium Grid** is also a tool that is used with Selenium RC to execute parallel tests across different browsers and operating systems.
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Q5: What is the main advantage of Selenium?

- Selenium is open source and free software and hence there is no licensing cost for its usage.
 - Scripting can be done in most of the widely used programming languages like Java, C#, Ruby, Perl, PHP and Python
 - Automation using selenium can be done in many OS platform like MS Windows, Macintosh and Linux
 - It supports most of the popular browsers like Chrome, FireFox, Internet Explorer, Opera and Safari.
 - Selenium Grid helps in parallel and distributed testing
 - It uses less Hardware resources.
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Q6: What are the main disadvantages of Selenium?

- Selenium does not provide desktop application automation support.
 - Web Services - REST or SOAP cannot be automated using selenium.
 - Selenium WebDriver requires programming language requirement for script creation.
 - No vendor support for tool compared to commercial tools like HP UFT
 - As there is no object repository concept in Selenium, maintainability of objects becomes difficult
 - For performing common tasks required in automation like logging, reading-writing to external files we have to rely on external libraries.
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Q7: What is the main advantage of Selenium WebDriver?

- ✈ Faster than other tools of Selenium suite (IDE, RC)
 - ✈ Control the browser by programming
 - ✈ Supports Data driven Testing and Cross browser testing
 - ✈ Supports Parallel test execution with the help of either JUnit or TestNG
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Q8: What is main difference between Selenium and UFT?

Selenium	UFT
1) Open Source tool	Tool from HP, License is required
2) Supports various OS Environments like MS Windows, Macintosh and Linux	MS Windows only
3) Supports various Programming Environments like Java, Python, Perl etc.	VBScript only
4) No inbuilt Object Repositories	Local and Shared object Repositories
5) No built-in Reporting feature	Built-in reporting feature
6) Supports Web Applications only	Supports Desktop and Web Applications
7) Uses less Hardware resources	Uses more Hardware resources
8) Difficult to setup environment and use	Easy to setup and use.
9) Parameterization can be done via programming but is difficult to implement.	Parameterization Support is built
10) No Reliable support from any specific group	Permanent Support from HP

Q9: What are the different types of testing are supported by Selenium?

Selenium supports the following types of testing:

- ☐ Functional Testing
 - ☐ Regression Testing
 - ☐ Sanity Testing
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Q10: What is the Automation Lifecycle using Selenium?

- a. Test Automation Planning – Analyze Requirement, Analyze the AUT (Application Under Test) in terms of Object Identification, Identify test case for Automation
 - b. Test Script Design – Create Page Library, Create Reusable Methods, Design Test steps using Element locators
 - c. Test Script Enhancement – Insert Verification Points using Assert/Verify Commands, use Parameterization in Data driven Testing, Handle expected and unexpected errors
 - d. Run and debug Test Script - Locating and isolating errors thru Step by Step execution, debug for any wrong output
 - e. Analyze Test Results and Report Defects – Publish Test Results, Identify defect, Log defect in any defect management tool
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Q11: What are the pre-requisites to start with Selenium?

❑ **Java Development Kit**

✈ **Java (JDK)-**

<https://www.oracle.com/technetwork/java/javase/downloads/index.html>

❑ **Eclipse IDE Package**

✈ **Eclipse** - <http://www.eclipse.org/downloads/eclipse-packages/>

❑ **Selenium WebDriver**

✈ **Selenium HQ** - <https://docs.seleniumhq.org/download/>

❑ **Different drivers for Browsers**

✈ **ChromeDriver** -

<https://sites.google.com/a/chromium.org/chromedriver/downloads>

✈ **GeckoDriver** - <https://github.com/mozilla/geckodriver/releases>

✈ **IEDriver** — <https://selenium-release.storage.googleapis.com/index.html>

Q12: How to setup eclipse in your System?

- Download and install Eclipse IDE. Launch eclipse.exe
 - Set your workspace to any location (a workspace is a physical location where we store our project or group of related projects).
 - Now create a new project- File->New->Project...->Java->Java Project
 - Name you project and click Finish
 - Now you will see an src folder under your project. Under this we need to create a package-Right Click src->New->Package (Basically these packages are used to group together related classes). Name your package e.g. 'myTestPackage'
 - Inside this package create a new class and name it e.g. Test, your Test.java class will get created
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Q13: How to add Selenium jars to a Project

Right Click your project on the left and click on properties. A "Properties for {project name}" dialog box will appear. Click on "Java Build Path" on the left and then navigate to Libraries tab on the right. In this tab click on "Add External Jars.." button.

Q14:What are the different types Web Elements available in Webpage?

- ☐ Edit Box
 - ☐ Text Box
 - ☐ Check Box
 - ☐ Drop Down Box
 - ☐ Combo box
 - ☐ Button
 - ☐ Radio Button
 - ☐ Link/Hyperlink
 - ☐ Image
 - ☐ Web table
 - ☐ Frame
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Q15: What is locator?

The locator can be termed as an address that identifies a web element uniquely within the webpage. Locators are the HTML properties of a web element.

Q16: What are the Element Locators are available for Browser?

- i. ID – `driver.findElement(By.id("IdName"))`
- ii. Name – `driver.findElement(By.name("Name"))`
- iii. Class Name – `driver.findElement(By.className("Element Class"))`
- iv. Tag Name – `driver.findElement(By.tagName("HTML Tag Name"))`
- v. Link Text – `driver.findElement(By.linkText("LinkText"))`
- vi. Partial Link Text –
`driver.findElement(By.partialLinkText("partialLinkText"))`
- vii. CSS Selector – `driver.findElement(By.cssSelector("value"))`
- viii. XPath – `driver.findElement(By.xpath("XPath"))`

`driver` – Object/Instance of WebDriver

`findElement` – WebDriver method

`By` – Pre-defined Class in Selenium

`id` – Element locator/attribute

`IdName` – Locator value

Q17: How to inspect elements in any Webpage?

1. Open any webpage using Internet Explorer or Chrome browser
 2. Click on F12 button from keyboard to inspect element.
 3. Click on the Inspector Icon.
 4. Move your mouse around the page, the element under your mouse will be highlighted and an annotation displays its HTML tag.
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Q18: What is Object Repository?

An object repository is a unique entity which allows a tester to store all objects that will be used in the test scripts in one or more centralized locations rather than scattered all over the test scripts so that other testers can use them as and when required instead of creating a new one.

Q19: Why we use Xpath?

Xpath are used to locate elements which does not contain any id, class or name.

Q20: What are the common expression is associated with Xpath?

- ❑ **Basic Xpath** - XPath expression select nodes or list of nodes on the basis of attributes like ID , Name, Classname, etc. from the XML document.
 - ❑ **Contains()** - Contains() is a method used in XPath expression. It is used when the value of any attribute changes dynamically.
 - ❑ **Using OR & AND** - In OR expression, two conditions are used, whether 1st condition OR 2nd condition should be true. It is also applicable if any one condition is true or maybe both. Means any one condition should be true to find the element.
 - ❑ **Starts-with()** - It is used to identify an element, when we are familiar with the attributes value (starting with the specified text) of an element
 - ❑ **Text()** - This mechanism is used to locate an element based on the text available on a webpage.
 - ❑ **Following** - By using this we could select everything on the web page after the closing tag of the current node.
 - ❑ **Ancestor** - The ancestor axis selects all ancestors element (grandparent, parent, etc.) of the current node.
 - ❑ **Child** - Selects all children elements of the current node.
 - ❑ **Preceding** - Selects all nodes that appear before the current node in the document, except ancestors, attribute nodes and namespace nodes.
 - ❑ **Following-sibling** - Select the following siblings of the context node. Siblings are at the same level of the current node.
 - ❑ **Parent** - Selects the parent of the current node.
 - ❑ **position()** - Selects the element out of all input element present depending on the position number provided
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Q21: What are basic Xpath Symbol available in Selenium WebDriver?

❑ Xpath Symbols

➔ `//tagname[@attribute-name='value1']`

➔ `//*[@attribute-name='value1']`

❑ Xpath Generation using different other methods

➔ `Xpath=//*[contains(@type,'sub')]`

➔ `Xpath=//*[@type='submit' OR @name='btnReset']`

➔ `Xpath=//input[@type='submit' and @name='btnLogin']`

➔ `Xpath=//label[starts-with(@id,'message')]`

➔ `Xpath=//td[text()='textname']`

➔ `Xpath=//*[@type='text']//following::input`

➔ `Xpath=//*[text()='textvalue']//ancestor::div`

➔ `Xpath=//*[@id='idname']/child::li`

➔ `Xpath=//*[@type='typename']//preceding::input`

➔ `xpath=//*[@type=' typename ']//following-sibling::input`

➔ `Xpath=//*[@id='idname']//parent::div`

Q22: What is Relative and Absolute Xpath?

Relative Xpath is more like starting simply by referencing the element you want and navigate from the particular location. It begins from the current location and is prefixed with a "//".

Example: `//span[@class='Email']`

Absolute Xpath contains the complete path from the Root Element to the desire element. It begins with a root path and is prefixed with a "/".

Example: `/HTML/body/div/div[@id='Email']`

Q23: What are basic CSS Selector Symbol available in Selenium WebDriver??

CSS can be generated using different methods:

- ✈ `css=<HTML tag><#><Value of ID attribute>`
 - ✈ `css=<HTML tag><.><Value of Class attribute>`
 - ✈ `css=<HTML tag><[attribute=Value of attribute]>;`
Example: `input[type=submit]`
 - ✈ `css=tag.class[attribute=value]`
 - ✈ **Starts with (^):** `css=<HTML tag><[attribute^=prefix of the string]>`
 - ✈ **End with (^):** `css=<HTML tag><[attribute$=suffix of the string]>`
 - ✈ **Contains (*):** `css=<HTML tag><[attribute*=sub string]>`
Example: `css=input[id*='id']`
 - ✈ **Using Multiple Symbols:**
`css = tagname[attribute1='value1'][attribute2='value2']`
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Q24: How you can use “submit” a form using Selenium ?

You can use “submit” method on element to submit a form after all mandatory information filled.

Example: `element.submit();`

Q25: What is the difference between find elements() and find element()?

- ❑ find element(): It finds the first element within the current page using the given “locating mechanism”. It returns a single WebElement. It is the responsibility of developers and testers to make sure that web elements are uniquely identifiable using certain properties such as ID or name.

Syntax: `WebElement userid = driver.findElement(By.id("Id Value"));`

- ❑ findElements() : Using the given “locating mechanism” it will find all the elements within the current page. It returns a list of web elements. It returns an empty list if there are no elements found using the given locator strategy and locator value.

Syntax: `List<WebElement> elementName = driver.findElements(By.LocatorStrategy("LocatorValue"));`

Thank You

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