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1. **What is Selenium..?**

* It is a Open source tool for the Automation testing
* It is used to do the Automation testing for Web based application
* It supports different programming language like Java, Python C#
* It supports different web browsers like Google Chrome, Opera-mini, Microsoft Edge
* It can run at different Operating system like Window, Linux, Mac

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**2. How to download the chrome driver..?**

* Search chrome driver for selenium in the google chrome
* Download the **chromedriver.exe** based our current chrome version
* To know the current version of **chromedriver.exe**, Setting--> About Chrome --> Version name detail will available

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1. **What is driver..?**

* Browser is technically called as driver in selenium
* Web browser is technically called as WebDriver in selenium
* Chrome browser is technically called as ChromeDriver in selenium

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**3. How to launch the Browser..?**

System.setProperty("webdriver.chrome.driver","chromedriver.exe");

WebDriver driver=new ChromeDriver();

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System.setProperty("webdriver.chrome.driver","chromedriver.exe");

WebDriver driver=new ChromeDriver();

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1. **How to maximize the browser…?**

driver.manage().window().window().maximize();

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1. **How to minimize the browser…?**

driver.manage().window().window().minimize();

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1. **What is sleep()..?**

The sleep() is used to stop the execution of programme for the particular time.

Thread.sleep(4000);

* We should pass the time duration as argument to the sleep method.
* We have to call the sleep() method from Thread class
* The sleep() causes the **InterruptedException** exception
* We should manually throws the Exception in the method name
* Else we can handle it by using try-catch

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1. **What is get()..?**

The get() is used to hit the link in the browser.

driver.get(“www.google.com”);

We should pass the link value as argument in the method as String value.

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1. **What is findElement()..?**

* The findElement() method is used to find the single Web Element in the HTML webpage.
* We should pass the locators to the findElement() as a argument.

driver.findElement(By.locator(“locator-value”));

driver.findElement(By.xpath(“//\*[@id=username]”))

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1. **What is findElements()..?**

* The findElements() method is used to find the multiple Web Element in the HTML webpage.
* We should pass the locators to the findElement() as a argument.

driver.findElement(By.locator(“locator-value”));

driver.findElements(By.xpath(“//\*[@id=username]”))

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1. **What are the different between findElement() and findElements()..?**

**findElement() method:**

* This command is used to access any single element on the web page
* It will return the object of the first matching element of the specified locator
* It will throw NoSuchElementException when it fails to identify the element

**findElements() method:**

* This command is used to uniquely identify the list of web elements within the web page.
* The usage of this method is very limited
* If the element doesn’t exist on the page then, then it will return value with an empty list

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1. **What are the locators..?**

* The locator is used to locate the web element in the HTML web page.
* The locator is classified into different types

1. By ID
2. By Name
3. By Tag Name
4. By Class name
5. By Xpath
6. **By ID:** driver.findElement(By.id("JournalDev"));
7. **By Name:** driver.findElement(By.name("JournalDev"));
8. **By Tag Name:** driver.findElement(By.tagName("JournalDev"));
9. **By Class Name:**  driver.findElement(By.className("JournalDev"));
10. **By Xpath:** driver.findElement(By.xpath("JournalDev"));

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1. **What is the Xpath..?**

* Xpath is used to locate an WebElement in the HTML Web page
* Xpath is classified into 2 different types

1. Relative xpath
2. Absolute xpath
3. **Absolute xpath:**

* The simplest XPath locator example in Selenium is to provide the absolute path of an element in the DOM structure.
* It is a xpath from Root of the HTML page.
* It is mentioned by using single slash(\)

**Example:** /html/body/div[1]/div/div[2]/header/div/div[2]/a/img

1. **Relative xpath:**

* The releative xpath locator is start from middle of the html page.
* It is mentioned by using double slash(\\)

**Example:** //\*[@id="block-perfecto-main-menu"]/ul/li[6]/a

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1. **What are the way to get the Relative xpath..?**

We can get the relative xpath by using different ways

1. Basic xpath
2. Contains()
3. Using OR, AND
4. Starts-with
5. Text()
6. **Basic xpath:**

This is the basic method of getting the xpath from the web page

Xpath=//tag[@attribute=’value’];

XPath=//div[@name='username']

1. **Contains():**

The contains() is used to find the element when the text is partially matched with the element’s text.

Xpath=//tag[contains(@attribute=’value’)];

XPath=//div[contains(@id,'Name')]

1. **Using OR, AND Condition:**

* In OR expression, two condition are used
* Any one of the condition should be true or may be both condition will true

Xpath=//tag[@attribute1=’value1’ or @attribute2=’value2’];

XPath=//div[@id='FirstName' or @name='LastName']

* In AND expression, two condition are used
* Both of two condition should be true

Xpath=//tag[@attribute1=’value1’ and @attribute2=’value2’];

XPath=//\*[@id='FirstName' and @name='FirstName']

1. **Starts-with():**

The Starts-with() is used to find the element when the text of the element is starts with some text.

Xpath=//tag[starts-with(@attribute=’startvalue’)];

XPath=//input[starts-with(@name,'pass')]

1. **text():**

The text() is used to locate an elements based on exact text of a web element

Xpath=//tag[text()=’textValue’)];

XPath=//input[text()=’username’]

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1. **What is click()..?**

The click() method is used to click the web element in the HTML Webpage.

WebElement loginButton = driver.findElement(By.xpath(“//\*[@name=login]”));

loginButton.click();

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1. **What is sendKeys()..?**

* The sendKeys() method is used to enter any value to the text field in the HTML Webpage.
* We need to pass the value as an argument to the send keys method by String value.

WebElement username= driver.findElement(By.xpath(“//\*[@name=’username’]”));

username.sendKeys(“administrator”);

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1. **What is clear()..?**

* The clear() is used to clear the existing text in the mentioned text field.

WebElement username= driver.findElement(By.xpath(“//\*[@name=’username’]”));

username.clear();

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1. **How to choose the option from drop-down box…?**
   1. Find the element and save it in the WebElement variable

WebElement userGroup = driver.findElement(By.xpath(“//\*[@name=’usergroup’]”));

* 1. Create an object for the select class

Select userGroupSelect = new Select();

* 1. Pass the WebElement variable to the Select class

Select userGroupSelect = new Select(userGroup );

* 1. Call selectByVisibleText() to select the option

userGroupSelect.selectByVisibleText();

* 1. Pass the option value as String to the selectByVisibleText().

userGroupSelect.selectByVisibleText(“Administrator”);

**Overall Steps:**

WebElement userGroup = driver.findElement(By.xpath(“//\*[@name=’usergroup’]”));

Select userGroupSelect = new Select(userGroup );

userGroupSelect.selectByVisibleText(“Administrator”);

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1. What are the Waits and it’s types…?

* The Waits are command in the Selenium
* During automated testing of websites, issues may occur due to variations in time lag for loading the web elements.
* Wait command help observe and troubleshoot these issues.
* When a page loads on a browser, various web elements on it with may load at different time intervals.
* Wait commands direct a test script to pause for a certain time before throwing an Exception

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1. What are the types of Wait..?

The wait is classified into 3 different types

* Implicit Wait
* Explicit Wait
* Fluent Wait

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1. What is implicit Wait..?

* The implicit wait will wait for the particular time to load the Web element.
* We should pass the time detail.
* Implicit Wait directs the Selenium WebDriver to wait for a certain measure of time before throwing an exception.
* Once this time is set, WebDriver will wait for the element before the exception occurs.
* It’s default wait time is 0 seconds
* We can declare the implicit wait for overall action in a same class

driver.manage().timeouts().implicitlyWait(10, TimeUnit.SECONDS);

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