**Window-handles in selenium:**

**Parent window** : The main window on which the user has currently landed or webpage on which the user is landed after hitting a link/URL. Such a webpage in Selenium is referred as the parent window also known as the main window.

**Child Window** : All the windows which will open inside your main window will be called as child windows.

**Window Handle**: A window handle stores the unique address of the browser windows. It is just like window navigator , whose return type is alphanumeric(**String**). The window handle in Selenium helps in handling multiple windows and child windows. Each browser/tab will have a unique window handle value with which we can uniquely identify it.

1. getWindowHandle() : This method will handle the **current window** that uniquely identifies it within this driver instance. Its return type is **String**.

Syntax :

String windowHandle = chrome.getWindowHandle();

System.out.println("Parent window Handle : "+windowHandle);

1. getWindowHandles() : To handle all **opened windows** by web driver, we can use “getWindowHandles()” method and then we can **switch** window from one window to another in a web application. Its return type is Set<String>

Syntax:

Set<String> windowsHandles = chrome.getWindowHandles();

for(String window:windowsHandles)

{

System.out.println(window);

}

**Alerts in selenium:**

**What is an alert?**

Alerts are small popup boxes/desktop-windows which display the messages/notifications and notify the user with some information seeking some permission on certain kinds of operations. Additionally, we can also use them for warning purposes. Sometimes, the user can enter a few details in the alert box as well.

**Types of alerts provided by Web Applications:**

**1.Simple alert**: These alerts are just informational alerts and have an OK button on them. Users can click on the OK button after reading the message displayed on the alert box. A simple alert box looks like below.

Graphical user interface, text, application, email

Description automatically generated

**2.Prompt Alert**: In Prompt alerts, some input requirement is there from the user in the form of text needs to enter in the alert box. A prompt alert box is displayed like below, where the user can enter his/her username and press the OK button or cancel the alert box without entering any details.

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**3.Confirmation Alert**: These alerts get some confirmation from the user in the form of accepting or dismissing the message box. They are different from prompt alerts in a way that the user cannot enter anything as there is no text-box available. Users can only read the message and provide the inputs by pressing the OK/Cancel button.

Graphical user interface, application

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accept() : This method is used to click on accept/ok/yes button on an alert.

Dismiss() : This method is used to click on cancel/no/reject button on an alert.

getText() : This method is used to return the text present on an alert.

sendKeys() : This method is used to send some commands to an alert.

**Syntax:**

WebDriver chrome = new ChromeDriver();

chrome.switchTo().alert().accept();

chrome.switchTo().alert().dismiss();

chrome.switchTo().alert().sendKeys("Hello Siddhi");

String alertText = chrome.switchTo().alert().getText();

System.out.println(alertText);

**IFrames in selenium:**

**What is iframe ?**

* + Iframe is webpage which is embedded in another web page
    - * + **(or)**
  + It is a HTML document embedded inside another HTML document
  + These frames are used in a webpage to add content from other source like advertisements in a webpage.
  + These iframe are defined with **<iframe>** tag.

**How to identity iframe on a web page?**

* We cannot detect the frames by just seeing the page or by inspecting on webpage.
* But when we try to inspect on web page, on context click options it will display

**View frame source**  or **Reload frame** in chrome browserand **This Frame** in Firefox bowser by these options we can confirm that webpage consists of frames.

Graphical user interface, text, application, email

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**Frame(int )** : This method is used to switch the frame by its index.

**Frame(String)** : This method is used to switch the frame by its name or id.

**Frame(WebElement)** : This method is used to switch the frame by its webelement.

**parentFrame()** : This method is used to switch parent frame from child frame.

**defaultContent()** : This method is used to switch parent page from any frame.

Single Frame:

Graphical user interface, application, Word

Description automatically generated

**Html code:**

<html>

<head> </head>

<body class=" darktheme">

<iframe frameborder="20" id="frame1" name="frame1" allowfullscreen="true">

<button type="submit1" id="loginbutton” form="nameform1" value="Submit">Submit1</button>

</iframe>

</body>

</html>

**Selenium code :**

**With index:**

chrome.switchTo().frame(0);

chrome.findElement(By.id("loginbutton")).click();

chrome.switchTo().defaultContent();

or

**With id or name:**

chrome.switchTo().frame("frame1");

chrome.findElement(By.id("loginbutton")).click();

chrome.switchTo().defaultContent();

or

**With web-element:**

chrome.switchTo().frame(chrome.findElement(By.id("iframe1")).);

chrome.findElement(By.id("loginbutton")).click();

chrome.switchTo().defaultContent();

Multiple frame:

Diagram

Description automatically generated

**Html code:**

<html>

<head> </head>

<body class=" darktheme">

<iframe frameborder="0" id="frame1" name="frame1" allowfullscreen="true">

<button type="submit" form="nameform" value="Submit">Submit1</button>

</iframe>

<iframe frameborder="0" id="frame2" name="frame2" allowfullscreen="true">

<button type="submit" form="nameform" value="Submit">Submit2</button>

</iframe>

<iframe frameborder="0" id="frame3" name="frame3" allowfullscreen="true">

<button type="submit" form="nameform" value="Submit">Submit3</button>

</iframe>

</body>

</html>

**Selenium code :**

chrome.switchTo().frame("iframe1");

chrome.findElement(By.id("loginbutton")).click();

chrome.switchTo().defaultContent();

chrome.switchTo().frame("iframe2");

chrome.findElement(By.id("loginbutton")).click();

chrome.switchTo().defaultContent();

chrome.switchTo().frame("iframe3");

chrome.findElement(By.id("loginbutton")).click();

chrome.switchTo().defaultContent();

Nested Frames:



<html>

<head> </head>

<body class=" darktheme">

<iframe frameborder="0" id="iframe2" name=" iframe2" allowfullscreen="true">

<button type="submit" form="nameform" id=" element2" value="Submit">element2</button>

<iframe frameborder="0" id="iframe1" name=" iframe1" allowfullscreen="true">

<button type="submit" form="nameform" " id=" element1" value="Submit">element1</button>

</iframe>

</iframe>

</body>

</html>

**Selenium syntax :**

chrome.switchTo().frame("iframe2");

chrome.findElement(By.id("element2")).click();

chrome.switchTo().frame("iframe1");

chrome.findElement(By.id("element1")).click();

chrome.switchTo().parentFrame();

chrome.switchTo().defaultContent();

**Select Class in selenium**:

Select is used to automate dropdown which are developed by using <select> HTML tag.

Graphical user interface, text, application

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**Types of dropdowns**:

1.single selection dropdown

Example :



2. Multiple selection dropdown

Example :



**How to check whether dropdown is multi-Select?**

The Select class provides the "**isMultiple()** " method, which determines whether the web element is supports for multiple selections or not. It returns a boolean value, i.e., True/False, without taking any argument. It checks the attribute 'multiple' in the HTML code for the web element.

Syntax :

Select country = new Select(driver.findElement(By.name("xxxxxx")));

Boolean selection = country.isMultiple();

System.out.println(selection);

**Select-Methods:**

1. **selectByIndex()** :

This method selects the dropdown option by its index number. We provide an integer value as the index number as an argument.

The index starts at 0

**syntax**:

Select country = new Select(driver.findElement(By.name("xxxxxx")));

country.selectByIndex(3);

**2.** **selectByValue() :**

This method selects the dropdown option by its value. We provide a string value as the value as an argument.

**syntax**:

Select country = new Select(driver.findElement(By.name("xxxxxx")));

country.selectByValue("india");

3. **selectByVisibleText() :**

This method selects the dropdown option based on the dropdown text. We provide the dropdown text as a string as an argument.

**Syntax**:

Select country = new Select(driver.findElement(By.name("xxxxxx")));

country.selectByValue("INDIA");

4. **getOptions()** :

This method is used to get all the options in a dropdown or multi-select box.

Using this method, we can retrieve all the options of a dropdown (be it single-select or multi-select ).

This method returns all the options of the dropdown as a list of WebElement (List<WebElement>).

**syntax**:

Select country = new Select(driver.findElement(By.name("xxxxxx")));

List<WebElement>options = country.getOptions();

for(WebElement option:options)

{

System.out.println(option.getText());

}

5. **getFirstSelectedOption() :**

This method returns the first selected option of the dropdown. If it is a single-select dropdown, this method will return the selected value of the dropdown, and if it is a multi-select dropdown, this method will return the first selected value of the dropdown.

This method returns a WebElement.

**Syntax:**

Select country = new Select(driver.findElement(By.name("xxxxxx")));

System.out.println(country.getFirstSelectedOption());

6. **getAllSelectedOptions() :**

This method returns all the selected options of the dropdown. If it is a single-select dropdown, this method will return the only selected value of the dropdown, and if it is a multi-select dropdown, this method will return all the selected values of the dropdown.

Using this method, we can retrieve all the selected options of a dropdown (be it single-select or multi-select ).

This method returns a WebElement’s.

**Syntax:**

Select country = new Select(driver.findElement(By.name("xxxxxx")));

List<WebElement>options = country. getAllSelectedOptions ();

for(WebElement option:options)

{

System.out.println(option.getText());

}

7. **deselectAll():**

It will deselect all the options from the dropdown.

**Syntax:**

Select country = new Select(driver.findElement(By.name("xxxxxx")));

country.deselectAll()

8. **deselectByIndex ():**

This method is used to deselect an option from the dropdown by using its index.

**Syntax:**

Select country = new Select(driver.findElement(By.name("xxxxxx")));

country. deselectByIndex(index);

9. **deselectByValue ():**

This method is used to deselect an option from the dropdown by using its value.

**Syntax:**

Select country = new Select(driver.findElement(By.name("xxxxxx")));

country. deselectByIndex(“Value”);

10. **deselectByVisibleText():**

This method is used to deselect an option from the dropdown by using its Text.

**Syntax:**

Select country = new Select(driver.findElement(By.name("xxxxxx")));

country. deselectByVisibleText(“Text”);