

Module 8: Switching Windows and Frames



Module Objectives

At the end of this module, you will be able to:

- Explain moving between windows in a web application to perform operations
- Illustrate usage of the method to handle WebElements in multiple windows
- Describe creating frames
- Describe switching between frames



Topic List

Switching Windows

Switching Frames

Topic List

Switching Windows

Switching Frames

Switching Windows (1)

What is multiple windows?

- In automation, when we have multiple windows in any web application. To complete any operation, switching of control among windows is necessary
- The web elements in a page can be accessed only when we switch control to the respective page
- After completion of the operation, it has to return to the main window i.e. parent window



Note: If the frames do not have id/name, we can identify by index to switch between them.



Switching Windows (2)

Window Handles Method

- “driver.window_handles” is used to work with all the opened windows
- It stores the address of all the windows in list.
 - Example: windows=driver.window_handles
- Moving between **named windows** is supported by the WebDriver using switch_to_window()
 - Example: driver.switch_to_window(“windowName”)
- **Indexing for moving between windows** is supported using the switch_to_window()
 - Example: childWindow1=driver.window_handles[1]
 - driver.switch_to_window(“childWindow1”)
 - window_handles[1] denotes first child window. Parent window usually stored as index “Zero” and can be access with the same index value.
 - At any point you can switch to first child window using switch_to_window(“childWindow1”)



Switching Windows (3)

Window Handles Method

- Alternatively, you can navigate to any window by iterating the multiple windows using loop.
 - Example:

```
windows=driver.window_handles  
for window in windows:  
    driver.switch_to_window(window)  
    print(driver.title)
```



Demo 8.1

How to switch multiple windows

```
from selenium import webdriver
from selenium.webdriver import ActionChains

driver=webdriver.Chrome('C:\\Sara\\Softwares\\chromedriver\\chromedriver.exe')
driver.get('http://localhost:8085/TestMeApp/')
driver.maximize_window()
driver.implicitly_wait(50)
elementAboutUs=driver.find_element_by_xpath('//*[@id="menu3"]/li[3]/a/span')
elementOuroffices=driver.find_element_by_xpath('//*[@id="menu3"]/li[3]/ul/li/a/span')
elementChennai=driver.find_element_by_xpath('//*[@id="menu3"]/li[3]/ul/li/ul/li[1]/a/span')
parentWindow=driver.window_handles[0]
```



Demo 8.1

How to switch multiple windows

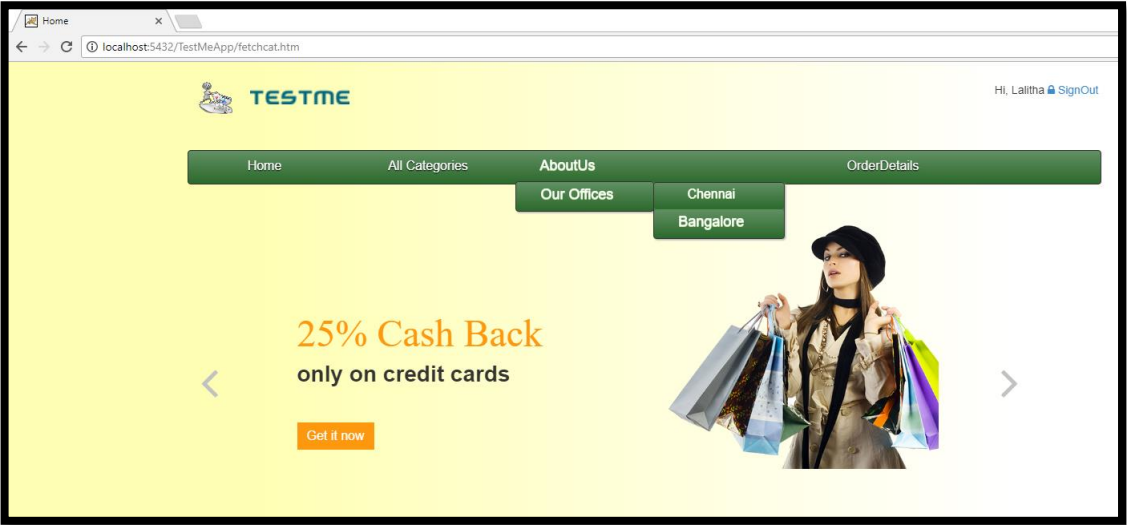
```
ac=ActionChains(driver).move_to_element(elementAboutUs).move_to_element(elementOuroffices).move_to_element(elementChennai)
ac.click().perform()
windows=driver.window_handles
for window in windows:
    driver.switch_to_window(window)
    print(driver.title)
driver.close()
driver.switch_to_window(parentWindow)
assert driver.title, 'Home'
driver.close()
```



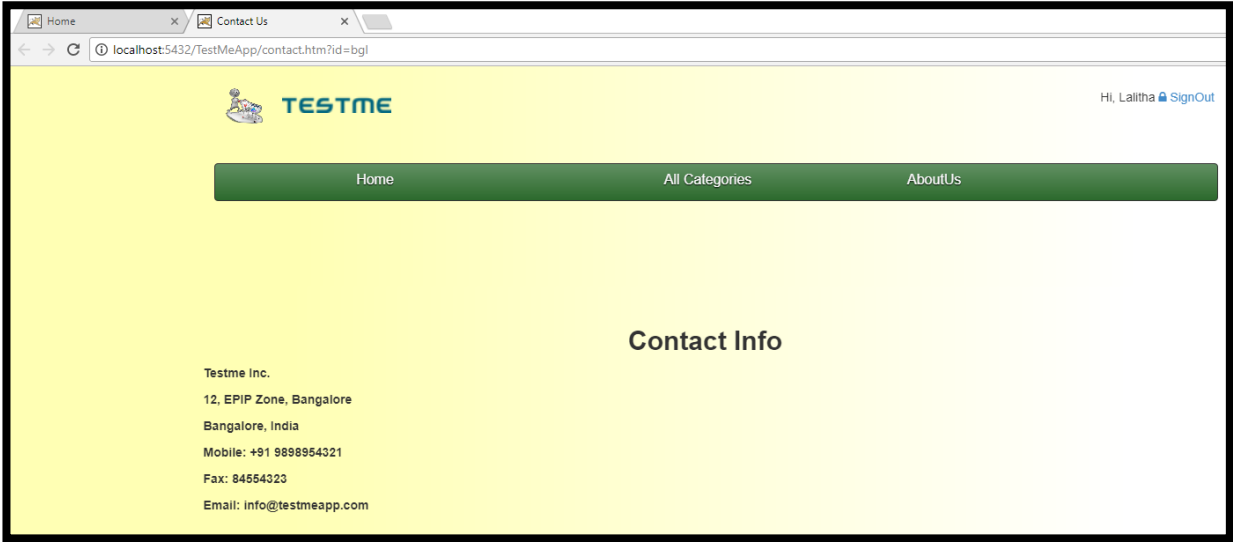
Demo 8.1

How to switch multiple windows

Output Screen 1



Output Screen 2



Topic List

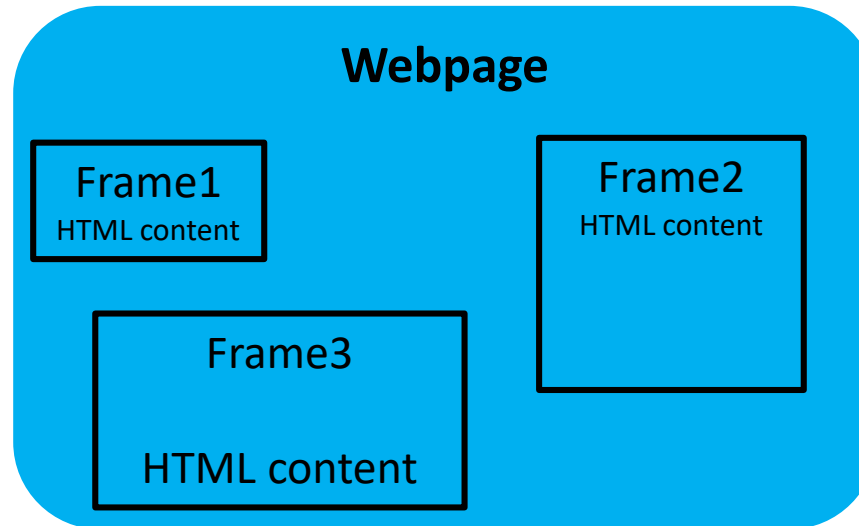
Switching Windows

Switching Frames

Switching Frames (1)

What is Frame?

- A frame can be division in a webpage where separate HTML documents can be loaded
- Hence, a browser page can have multiple frames called **frameset**, where each frame consists of HTML content from other sources
- iFrame (Inline Frame) is a HTML element used to insert HTML content from another source
 - Hence, Iframe is a HTML document inserted in the current HTML document on a webpage. Example: an advertisement inserted in a webpage



Note: Each frame is independent of another



Switching Frames (2)

Different ways to access frames

- Frames can be accessed using the following:

ID/Name

Example:

```
driver.switch_to_frame("id/name of the frame")
```

Index

Example:

```
driver.switch_to_frame("index of the frame")
```

WebElement

Example:

```
element=driver.find_element_by_xpath("xpath")  
driver.switch_to_frame(element)
```



Switching Frames (3)

How to switch between frames?

- The **driver.switch_to_frame()** is used to switch to a frame on a page and perform operations using the drivers instance
- For nested frames, driver instances are used to switch to the parent frame and then, switch to the desired child frames
 - Example: `driver.switch_to_frame("id of the parent frame")`
`driver.switch_to_frame("id of the child frame")`
- Once the frame is activated, the drivers instance will allow operations on the document loaded in the frame



Note: If the frames do not have id/name, we can identify by index to switch between them.



Demo 8.2

How to Switch between Frames?



```
from selenium import webdriver
from selenium.webdriver import ActionChains

driver=webdriver.Chrome('C:\\Sara\\Softwares\\chromedriver\\chromedriver.exe')
driver.get('http://localhost:8085/TestMeApp/')
driver.maximize_window()
driver.implicitly_wait(50)
elementAboutUs=driver.find_element_by_xpath('//*[@id="menu3"]/li[3]/a/span')
elementOuroffices=driver.find_element_by_xpath('//*[@id="menu3"]/li[3]/ul/li/a/span')
elementChennai=driver.find_element_by_xpath('//*[@id="menu3"]/li[3]/ul/li/ul/li[1]/a/span')
parentWindow=driver.window_handles[0]
```

Demo 8.2

How to Switch between Frames?



```
ac=ActionChains(driver).move_to_element(elementAboutUs).move_to_element(elementOuroffices).move_to_element(elementChennai)
ac.click().perform()
childWindow=driver.window_handles[1]
driver.switch_to_window(childWindow)

driver.switch_to_frame("main_page")
element=driver.find_element_by_xpath('/html/body/div[1]/div/div/div')
print(element.text)
driver.switch_to_default_content()
driver.close()
```


Demo 8.2

How to Switch between Frames?

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Switching Frames (5)

Switching to Main Document to Perform Operations

- If switching between frames is required to do some operation,:
 - You have to switch to the main window or parent frame before you switch to another frame
 - Otherwise, you do not have the privilege to access web elements in other frames
- The **`driver.switch_to_default_content()`** is used to switch to main document and perform operations using the drivers instance.
 - Example: `driver.switch_to_default_content()`

Exercise 8.1 Switching Windows / Frames

Scenario: Retrieve the address of a city (Chennai / Bangalore) in About Us Tab for the TestMeApp by switching to windows / frames

To Do

- Move to About US
- Move to Our Offices
- Move to Bangalore and click
- Retrieve the office address of Bangalore city as text and display on console



Refer Exercise 8.1 in Selenium with Python_wbk.doc for the detailed steps.

Module Summary

Now, you should be able to:

- Explain moving between windows in a web application to perform operations
- Illustrate usage of the method to handle WebElements in multiple windows
- Describe creating frames
- Describe switching between frames



Thank You