

IFRAME Handling in Selenium

1. What is an iframe?

- **iframe** stands for **Inline Frame**.
- It is an **HTML tag** (`<iframe>`) used to embed **another webpage inside a webpage**.
- Think of it like a small window inside a larger webpage.

2. Purpose of iframe

- To show external content (ads, maps, videos, or other websites) **without leaving the main page**.
- To logically separate parts of a page if managed by different teams or systems.

3. How to detect if an element lies inside an iframe?

- While inspecting in browser tools, if you see an `<iframe>` tag, it means content is embedded.
- Selenium gives errors like `NoSuchElementException` or `ElementNotInteractableException` when trying to interact with elements inside an iframe without switching.

4. How to handle iframe in Selenium

- **Switch into iframe** before interacting with elements inside.
- **Switch methods:**
 - `driver.switchTo().frame(int index)`
 - `driver.switchTo().frame(String nameOrId)`
 - `driver.switchTo().frame(WebElement iframeElement)`

- Switch back to main page:

- `driver.switchTo().defaultContent()`

5. Example: Handle buttons on different iframes

- Button A opens iframe1
- Button B opens iframe2

Code Example:

// Click Button A

`driver.findElement(By.id("btnA")).click();`

// Switch to iframe1

`driver.switchTo().frame("iframe1");`

`driver.findElement(By.id("textbox1")).sendKeys("Value for iframe 1");`

`driver.switchTo().defaultContent();`

// Click Button B

`driver.findElement(By.id("btnB")).click();`

// Switch to iframe2

`driver.switchTo().frame("iframe2");`

`driver.findElement(By.id("textbox2")).sendKeys("Value for iframe 2");`

`driver.switchTo().defaultContent();`

6. Handling iframes using List (used at industry level)

Why use List?

- Sometimes iframe name/id are dynamic.
- Find all iframes and switch based on index.

Handling Button A and Button B Scenario with List:

// Click Button A

```
driver.findElement(By.id("btnA")).click();  
List<WebElement> allframes = driver.findElements(By.tagName("iframe"));  
for (int i = 0; i < allframes.size(); i++) {  
    driver.switchTo().frame(i);  
    List<WebElement> textbox1 = driver.findElements(By.id("textbox1"));  
    if (textbox1.size() > 0) {  
        textbox1.get(0).sendKeys("Text for iframe1");  
        break;  
    }  
    driver.switchTo().defaultContent();  
}  
driver.switchTo().defaultContent();
```

// Click Button B

```
driver.findElement(By.id("btnB")).click();  
allframes = driver.findElements(By.tagName("iframe"));  
for (int i = 0; i < allframes.size(); i++) {  
    driver.switchTo().frame(i);  
    List<WebElement> textbox2 = driver.findElements(By.id("textbox2"));  
    if (textbox2.size() > 0) {  
        textbox2.get(0).sendKeys("Text for iframe2");  
        break;  
    }  
    driver.switchTo().defaultContent();  
}
```