

# DAY 4: Xpath Intro

## Agenda:

- Locators review
- Understanding xpath
- Finding WebElement using various type of xpath



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## Warm Up: Write 3 things you learned from the last class

Locators

id, name, classname, linktext, partiallinktext, tagname=>Locators

submit(); click();

findElement(); and findElements(); methods

```
WebElement elementName=driver.findElement(By.id("value"));
```

```
List<WebElement> elementName=driver.findElements(By.tagName("tagname"));
```

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# 1. By.id() method

```
<a id="sign-in" class="nav-item nav-link" data-test="sign-in" href="/sign_in">Sign in</a>
```

```
WebElement sessionEmail=driver.findElement(By.id("sign-in"));
```

- id is usually unique and commonly used to locate an element.
- Use this whenever available and unique
- If you pass the wrong id value then you get NoSuchElementException

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## 2. By.name() method

```
<input class="form-control" placeholder="Password" data-test="password" type="password" name="session[password]" id="session_password">
```

```
WebElement sessionPassword=driver.findElement(By.name("session[password]"));
```

- If the name and the value is unique you can also use this.

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### 3. By.className() method

```
<input class="form-control" placeholder="Password" data-test="password" type="password" name="session[password]" id="session_password">
```

```
WebElement sessionPassword=driver.findElement(By.className("form-control"));
```

- This can be used when you have class attribute.
- If class value pair unique then this can be used.

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## 4.By.linkText() method

```
<a class="nav-item nav-link" data-test="addresses" href="/addresses">Addresses</a>
```

```
WebElement welcomeMessage=driver.findElement(By.linkText("Addresses"));
```

- This can only be used to identify the HTML links.
- The HTML link elements are represented on a webpage using <a> tag, an abbreviation of anchor tag.
- You can easily recognize the hyperlinks on the UI and then can use this method
- The is case sensitive and has to match with the link text

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## 5.By.partialLinkText() method

```
<a class="nav-item nav-link" data-test="addresses" href="/addresses">Addresses</a>
```

```
WebElement welcomeMessage=driver.findElement(By.partialLinkText("Addr"));
```

- Similar to linkText() method.
- The only difference is you don't have to give the exact text.
- You can only give a certain part of the text.
- When you give the whole text it will accept too.

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## 6. By.tagName() method

```
<input class="form-control" placeholder="Password" data-test="password" type="password" name="session[password]" id="session_password">
```

```
WebElement sessionPassword=driver.findElement(By.tagName("input"));
```

- This is slightly different that the other locators.
- When you pass a certain tag like <div>,<a>,<input>,... it will return multiple element since you might have multiple same name tag. For this reason it is mostly use to get a list of element. So it is recommended to use with findElements() method.
- For example to return all of the links on a page we use :
  - List<WebElement> linksOnThePage=driver.findElements(By.tagName("a"));//interview question
- To get all iframes
  - List<WebElement> allFrames=driver.findElements(By.tagName("iframe")).size();
- For example to identify total number of iframes
  - Int size = driver.findElements(By.tagName("iframe")).size();

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## findElement() method

```
WebElement elementName=driver.findElement(By.LocatorStrategy("LocatorValue"));
```

- To find an element, we use findElement() method.
- **This returns one single webelement**
- If driver doesn't find the element, it throws a runtime exception : **NoSuchElementException**.
- When you see NoSuchElementException, then check your locator again.

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## findElements() method

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

- **Returns a list of web elements**
- Returns an empty list if there are no web elements matching the locator strategy.
- Doesn't throw exception.
- Each Web element is indexed with a number starting from 0 just like an array

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## QUESTION

What is the difference between findElement and findElements in selenium?

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# Actions on a WebElement

Performing actions on a WebElement is very crucial for automation testers.

- **sendKeys("text we are typing");** ->used to type in textbox.
- **clear();** ->similar to sendKeys method but does exactly opposite.  
Clears the textbox.
- **submit();** ->submits a form or an element inside a form. Mostly used after sendKeys() method to submit the text on a form or search box.

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# Understanding Parent Child Sibling Relationship

```
▼<tbody>
  ►<tr>...</tr>
  ▼<tr> == $0
    ▼<td>
      <input type="email" class="inputtext login_form_input_box" name="email" id="email" data-testid="royal_email">
    </td>
    ▼<td>
      <input type="password" class="inputtext login_form_input_box" name="pass" id="pass" data-testid="royal_pass">
    </td>
    ▼<td>
      ►<label class="login_form_login_button uiButton uiButtonConfirm" id="loginbutton" for="u_0_b">...
      </label>
    </td>
  </tr>
  ►<tr>...</tr>
</tbody>
```

**Tags:** tbody, tr, td, input, label, =>When we talk about the parent-child-sibling relationship, only tag names matter

**Attributes:** type, class, name, id, etc.

tr is child of tbody, and tbody is the parent of tr

td is the child of tr, and tr has 3 siblings

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parent(root element) the child one by one. Not common

```
.../child/...
```

You can go a certain element by using //. There are more

```
...[attribute='value'];
```

There are two types of xpath:

1. **Absolute xpath:**We go from parent(root element) the child one by one. Not commonly used. / is being used
  - Xpath = /parent/child/child/child/...
1. **Relative xpath:**Widely used. You can go a certain element by using //. There are multiple way to write xpath.
  - xpath=//tagName[@attribute='value'];



**Absolute xpath** = `//body/div/header/div/div/div/div`

**Relative xpath** = //div[@id='logo']; or //div[@class='flex-col logo'];

# By.xpath() method-Relative xpath

- **//tagName[@attribute='value']; => important**
- To find an element by **EXACT TEXT** you can use:
  - `//tagName[.='text name']` means certain tag with certain text. We pass certain tag here
  - `//*[.='text name'] ->` means any tag with certain text. `//*` means look for any tag
  - `//*[ (text()='exact text with extra space and all') ] ->` means any tag with certain text
- To find an element that contains a certain text we can use:
  - `//*[contains(text(),'piece of text')]; ->` To find an element that CONTAINS a piece of text
- We can pass more than one attribute
  - `//tag[@attribute1='value 1' or attribute2='value2']`
  - Example `//div[@id='logo' or class='flex-col logo']`

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# Class Work: Log in Test

1. Create a class : Locators\_xpath
2. Create main method and complete the following task.
  - a. When user goes to [http://a.testaddressbook.com/sign\\_in](http://a.testaddressbook.com/sign_in)
  - b. Locate the elements of email textbox,password textbox, and signin button
  - c. Enter below username and password then click sign in button
    - i. Username : [testtechproed@gmail.com](mailto:testtechproed@gmail.com)
    - ii. Password : Test1234!
  - d. Then verify that the expected user id [testtechproed@gmail.com](mailto:testtechproed@gmail.com)
  - e. Verify the Addresses and Sign Out texts are displayed
  - f. Find the number of total link on the page
  - g. Sign out from the page

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# Summary:

1. There are two types of xpath
  - a. Absolute-> go from parent to child
  - b. Relative-> we can start from anywhere on the page
  - c. There are multiple ways to write an xpath
    - i. Just pick one and use it.
    - ii. We prefer relative xpath over absolute xpath

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## HOMEWORK:

- Complete the test case



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