Web Object Identification in Selenium

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Agenda

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- ❖ Name
- ❖ Class Name
- ❖ Tag Name
- ❖ Link Text
- ❖ CSS Selectors
- ❖ XPath

Locators

Locators allow us to find elements on a page that can be used in our tests.

Locating elements in Selenium WebDriver is done by using the findElement() and findElements() methods provided by WebDriver and WebElement class.

- findElement() method returns a WebElement object , throws up an NoSuchElementFoundException if it does not find any matching element.

- findElements() method returns a list of WebElements. If no elements are found, it returns an empty list.

Locate Element by Id

Locates an element using Id attribute

Syntax:
- Java: driver.findElement(By.id("element ID")

Locate Element by Id

```
<form name="loginForm">
    <label for="username">UserName: </label>
<input type="text" id="username" /><br/>
    <label for="password">Password: </label>
<input type="password" id="password" /><br/>
    <input name="login" type="submit" value="Login" />
</form>
```

Syntax: (Java)
- WebElement username = driver.findElement(By.id("username"));
- WebElement password = driver.findElement(By.id("password"));

Cannot use the id attribute due to:
- The id attributes are not specified for key elements on a page
- The id attribute values are dynamically generated

Locate Element by Name

Locates an element using Name attribute

Syntax:
- Java: driver.findElement(By.name("element Name")

Locate Element by Name

```html
<form name="loginForm">
   <label for="username">UserName: </label>
<input type="text" name="username" /><br/>
   <label for="password">Password: </label>
<input type="password" name="password" /><br/>
   <input name="login" type="submit" value="Login" />
</form>
```

Syntax: (Java)
- WebElement username = driver.findElement(By.name("username"));
- WebElement password = driver.findElement(By.name("password"));

Unlike id, the name attribute may not be unique on a page. You might find multiple elements with similar name attributes and in such a case, the first element on the page with the specified value will be selected. This may cause the test to fail.

Locate Element by Class Name

Locates an element using Class Name attribute

Syntax:
- Java: driver.findElement(By.className("element Name")

Locate Element by Class Name

```html
<form name="loginForm">
    <label for="username">UserName: </label>
<input type="text" class="username" /><br/>
    <label for="password">Password: </label>
<input type="password" class="password" /><br/>
    <input name="login" type="submit" value="Login" />
</form>
```

Syntax: (Java)
- WebElement username =
  driver.findElement(By.className("username"));
- WebElement password = driver.findElement(By.className("password"));

Locate Element by Tag Name

Locates an element using HTML Tag

Syntax:
- Java: driver.findElement(By.tagName("htmltagname")

Locate Element by Tag Name

```html
<form name="loginForm">
    <label for="username">UserName: </label>
<input type="text" class="username" /><br/>
    <label for="password">Password: </label>
<input type="password" class="password" /><br/>
    <input name="login" type="submit" value="Login" />
</form>
```

Syntax: (Java)
- WebElement form_main= driver.findElement(By.tagName("form"));

LOCATE ELEMENT BY LINK TEXT

Locates link using it's text (text displayed for the link).

Syntax:
- Java: driver.findElement(By.linkText("linktext")

Locate Element by Link Text

```html
<html>
  <body>
    <p>Are you sure you want to do this?</p>
        <a href="continue.html">Continue</a>
        <a href="cancel.html">Cancel</a>
  </body>
<html>
```

Syntax: (Java)
- WebElement continue_link = driver.findElement(By.linkText("Continue"));
- WebElement cancel_link = driver.findElement(By.linkText("Cancel"));

LOCATE ELEMENT BY CSS SELECTOR

Locates element using it's CSS Selector

Syntax:
- Java: driver.findElement(By.cssSelector("css selector")

Locate Element by CSS Selector

```html
<html>
  <body>
    <div>
      <form name="loginForm">
        <label for="username">UserName: </label>
      <input type="text" class="username" /><br/>
        <label for="password">Password: </label>
      <input type="password" class="password" /><br/>
        <input name="login" type="submit" value="Login" />
      </form>
    </div>
  </body>
</html>
```

Finding elements with absolute path:

driver.findElement(By.cssSelector("html > body > div > form > input"));

```html
<html>
  <body>
    <div>
      <form name="loginForm">
        <label for="username">UserName: </label>
      <input type="text" class="username" /><br/>
        <label for="password">Password: </label>
      <input type="password" class="password" /><br/>
        <input name="login" type="submit" value="Login" />
      </form>
    </div>
  </body>
</html>
```

Finding elements with relative path:

driver.findElement(By.cssSelector("body input"));

Locate Element by CSS Selector

```html
<html>
  <body>
    <div>
      <form name="loginForm">
        <label for="username">UserName: </label>
      <input type="text" class="username" /><br/>
        <label for="password">Password: </label>
      <input type="password" class="password" /><br/>
        <input class="login" type="submit" value="Login" />
      </form>
    </div>
  </body>
</html>
```

Finding elements with Class selector:

WebElement loginButton = driver.findElement(By.cssSelector("input.login"));

Locate Element by CSS Selector

```html
<html>
  <body>
    <div>
      <form name="loginForm">
        <label for="username">UserName: </label>
      <input type="text" id="username" /><br/>
        <label for="password">Password: </label>
      <input type="password" id="password" /><br/>
        <input class="login" type="submit" value="Login" />
      </form>
    </div>
  </body>
</html>
```

Finding elements with ID selector:

WebElement loginButton = driver.findElement(By.cssSelector("input#username"));

Locate Element by CSS Selector

```html
<html>
  <body>
    <div>
      <form name="loginForm">
        <label for="username">UserName: </label>
      <input type="text" name="username" /><br/>
        <label for="password">Password: </label>
      <input type="password" name="password" /><br/>
        <input class="login" type="submit" value="Login" />
      </form>
    </div>
  </body>
</html>
```

Finding elements with Attributes selector:

WebElement loginButton = driver.findElement(By.cssSelector("input[name='username']"));

LOCATE ELEMENT BY XPATH

Locates element using it's XPath

Syntax:
- Java: driver.findElement(By.xpath("xpath")

Q/A?