**Selenium WebDriver - Day 3: Advanced Interactions**

**Objective**

By the end of this session, participants will:

1. Learn to handle advanced interactions with web elements like dropdowns, checkboxes, and radio buttons.
2. Understand how to manage JavaScript alerts, confirmations, and prompts.
3. Work with iframes to interact with elements embedded in other HTML documents.

**Session Agenda**

**1. Handling Dropdowns and Checkboxes**

1. **Dropdowns**
   * Types of dropdowns:
     + Static dropdowns (using <select> tag).
     + Dynamic dropdowns.
   * Using the Select class to handle static dropdowns:
     + selectByIndex(int index).
     + selectByValue(String value).
     + selectByVisibleText(String text).

**Code Example:**

java

WebElement dropdown = driver.findElement(By.id("dropdownId"));

Select select = new Select(dropdown);

select.selectByVisibleText("Option 1");

1. **Checkboxes**
   * Selecting and deselecting checkboxes using click().
   * Validating the state of a checkbox using isSelected().

**Code Example:**

java

WebElement checkbox = driver.findElement(By.id("acceptTerms"));

if (!checkbox.isSelected()) {

checkbox.click();

}

**Hands-On Practice:** Automate a form with multiple checkboxes and a static dropdown.

**2. Managing Radio Buttons**

* Selecting a radio button using click().
* Verifying the selected state using isSelected().

**Code Example:**

java

List<WebElement> radioButtons = driver.findElements(By.name("gender"));

for (WebElement radio : radioButtons) {

if (radio.getAttribute("value").equals("Female")) {

radio.click();

break;

}

}

**Hands-On Practice:** Write a script to select a specific radio button and verify its state.

**3. Working with Alerts (JavaScript Alerts, Confirmation, Prompt) (25 minutes)**

1. **Types of Alerts**
   * Simple alert.
   * Confirmation alert.
   * Prompt alert.
2. **Handling Alerts with WebDriver**
   * driver.switchTo().alert(): Switches focus to the alert.
   * accept(): Clicks "OK".
   * dismiss(): Clicks "Cancel".
   * getText(): Retrieves the text of the alert.
   * sendKeys(String text): Inputs text into a prompt alert.

**Code Example:**

java

// Handling a confirmation alert

Alert alert = driver.switchTo().alert();

System.out.println("Alert Text: " + alert.getText());

alert.accept(); // Click OK

**Hands-On Practice:** Automate handling of a prompt alert that requires user input.

**4. Working with Iframes (20 minutes)**

* What is an iframe?
  + A webpage embedded within another webpage.
* How to interact with elements inside an iframe:
  + Switch to an iframe using:
    - switchTo().frame(index).
    - switchTo().frame(nameOrId).
    - switchTo().frame(WebElement).
  + Switch back to the parent frame:
    - switchTo().parentFrame().
  + Switch to the default content:
    - switchTo().defaultContent().

**Code Example:**

java

driver.switchTo().frame("iframeId");

WebElement button = driver.findElement(By.id("submit"));

button.click();

driver.switchTo().defaultContent();

**Hands-On Practice:** Automate interacting with an iframe containing a text box and button.

**5. Q&A and Recap**

* Recap the concepts of dropdowns, checkboxes, radio buttons, alerts, and iframes.
* Address participants' doubts and queries.

**Homework**

1. Automate a webpage with:
   * A static dropdown.
   * Multiple checkboxes and radio buttons.
   * A JavaScript confirmation alert.
2. Write a script to:
   * Switch between multiple iframes.
   * Interact with elements in both iframes.