

***Handling of Listbox:

-->Set of options that are displayed by clicking on WebElement

-->Listbox is created by using <select> tag

Options are created by using <option> tag

ExaMP:

```
<select>
  <option>Option 1</option>
  <option>Option 2</option>
</select>
```

-->To handle listbox following approaches are used:

1: Approach 1: By identifying listbox option using findElement()

2: Approach 2: By using keystrokes

-->keystrokes can be perform in two ways

i: using sendkeys() in selenium

ii: using Robot class methods

3: Approach 3: By using select class methods

-->Procedure to handle listbox using Select class methods

1: Identify listbox that need to be handled using findElement method

2: Create object of select class and pass WebElement arg.

3: Using select class non static methods perform action.

** List of Methods present in select class

1: selectByindex(int index)

2: selectByValue(String value)

3: selectByVisibleText(String text)

4: isMultiple()

5: getOptions()
6: getAllSelectedOptions()
7: getFirstSelectedOption()
8: deselectByindex(int index)
9: deselectByValue(String value)
10: deselectByVisibleText(String text)
11: deselectAll()

1: selectByindex(int index): Used to select an option using option index count starts from 0.

2: selectByValue():Used to select an option using value attribute property value

Note: It can be used only if value attribute is created in Option.

3: selectByVisibleText(String text): used to select an option using option text.

Ques: WATS to select Date of Birth in Facebook App

Script:

```
WebDriver driver = new FirefoxDriver();  
    driver.manage().window().maximize();  
    driver.get("https://www.facebook.com/");  
    driver.findElement(By.linkText("Create new account")).click();  
    //Approach 1  
    driver.findElement(By.id("day")).click();  
    driver.findElement(By.xpath("//option[.='31']")).click();  
    //Approach 2:  
    WebElement month = driver.findElement(By.id("month"));  
    month.click();  
    //month.sendKeys("Sep");  
    Robot r = new Robot();  
    r.keyPress(KeyEvent.VK_DOWN);  
    r.keyPress(KeyEvent.VK_DOWN);  
    r.keyPress(KeyEvent.VK_ENTER);
```

```
//Approach 3
WebElement year = driver.findElement(By.id("year"));
Select s = new Select(year);
s.selectByIndex(5);
s.selectByValue("2016");
s.selectByVisibleText("2012");
```

AssignQues: WATS to select Date of Birth in Facebook App using Approach 3

Ques: WATS to select country in fatcow Application

Script:

```
WebDriver driver = new FirefoxDriver();
driver.get("http://www.fatcowhosting.com/");
//select country
WebElement rv = driver.findElement(By.id("countrySelect"));
Select s = new Select(rv);
s.selectByVisibleText("Canada");
```

4: isMultiple(): This method is used to verify listbox is multiselectable or not

Return type: Boolean

<html>

<body>

Select subject <select id="listbox" multiple="true">

<option value="Sub 1">Apti</option>

<option value="Sub 2">MT</option>

<option value="Sub 3">Java</option>

<option value="Sub 4">WT</option>

<option value="Sub 5">SQL</option>

<option value="Sub 6">Selenium</option>

```
        </select>
    </body>
</html>
```

Ques: WATS to verify listbox is multiselectable or not

Script:

```
WebDriver driver = new ChromeDriver();

driver.get("file:///C:/Users/Alpha/Desktop/HTML/E32/multiple.html");

//listbox

WebElement rv = driver.findElement(By.id("listbox"));

Select s = new Select(rv);

boolean b = s.isMultiple();

if(b)
{
    System.out.println("Listbox is Multiselectable");
}
else
{
    System.out.println("Listbox is not Multiselectable");
}

driver.close();
```

AssignQues: WATS to verify listbox is multiselectable or not in Facebook DATE field

5: getOptions(): This method is used to identify all the options in listbox

Return type: List<WebElement>

Ques: WATS to display total no. of options present in listbox as an output

Script:

```
WebDriver driver = new ChromeDriver();

driver.get("file:///C:/Users/Alpha/Desktop/HTML/E32/multiple.html");
```

```
//listbox  
WebElement rv = driver.findElement(By.id("listbox"));  
Select s = new Select(rv);  
List<WebElement> list = s.getOptions();  
System.out.println(list.size());  
driver.close();
```

AssignQues: WATS to display total no. of options present in listbox as as output in FB YEAR field

Ques: WATS to select all the options in Multiselectable listbox

Script:

```
WebDriver driver = new FirefoxDriver();  
driver.get("file:///C:/Users/Alpha/Desktop/HTML/E32/multiple.html");  
WebElement ref = driver.findElement(By.id("listbox"));  
Select s = new Select(ref);  
List<WebElement> list = s.getOptions();  
for(int i=0;i<list.size();i++)  
{  
    s.selectByIndex(i);  
}
```

Ques: WATS to select alternate options in Multiselectable listbox

Script:

```
WebDriver driver = new FirefoxDriver();  
driver.get("file:///C:/Users/Alpha/Desktop/HTML/E32/multiple.html");  
WebElement ref = driver.findElement(By.id("listbox"));  
Select s = new Select(ref);  
List<WebElement> list = s.getOptions();  
for(int i=0;i<list.size();i=i+2)  
{  
    s.selectByIndex(i);  
}
```

```
}
```

6: `getAllSelectedOptions()`: This method is used to display all selected options in multiselectable listbox

Return type: `List<WebElement>`

Ques: WATS to display only selected options as an output in Multiselectable listbox

Script:

```
WebDriver driver = new FirefoxDriver();

driver.get("file:///C:/Users/Alpha/Desktop/HTML/E32/multiple.html");

WebElement ref = driver.findElement(By.id("listbox"));

Select s = new Select(ref);

List<WebElement> list = s.getOptions();

for(int i=0;i<list.size();i=i+2)
{
    s.selectByIndex(i);
}

List<WebElement> ref1 = s.getAllSelectedOptions();

for(int i=0;i<ref1.size();i=i+1)
{
    WebElement rv = ref1.get(i);

    System.out.println(rv.getText());
}
```

7: `getFirstSelectedOption()`: This method is used to identify first selected option as an output if user select multiple options in multiselectable listbox

Return type: `WebElement`

Ques: WATS to display first selected options as an output in multiselectable listbox

Script:

```
WebDriver driver = new FirefoxDriver();
```

```

driver.get("file:///C:/Users/Alpha/Desktop/HTML/E32/multiple.html");

WebElement ref = driver.findElement(By.id("listbox"));

Select s = new Select(ref);

List<WebElement> list = s.getOptions();

for(int i=0;i<list.size();i=i+2)
{
    s.selectByIndex(i);
}

WebElement rv = s.getFirstSelectedOption();

System.out.println(rv.getText());

```

AssignQues: WATS to display default selected Option as an output in single selectable listbox in FB MONTH field

****deselect():** To deselect any one option in Multiselectable listbox following methods are used

- 8: deselectByindex(int index)
- 9: deselectByValue(String value)
- 10: deselectByVisibleText(String text)
- 11: deselectAll()

-->These deselect methods are supportable only for Multiselectable listbox

Ques: WATS to perform following actions on Multiselectable listbox

- 1: Select all the options
- 2: Deselect Third Options
- 3: Deselect all the options

Script:

```

WebDriver driver = new FirefoxDriver();

driver.get("file:///C:/Users/Alpha/Desktop/HTML/E32/multiple.html");

```

```

WebElement ref = driver.findElement(By.id("listbox"));

Select s = new Select(ref);

List<WebElement> list = s.getOptions();

//all options
for(int i=0;i<list.size();i++)
{
    s.selectByIndex(i);
}

//deselect 3rd option
s.deselectByIndex(2);

s.deselectByValue("Sub 5");

s.deselectByVisibleText("Selenium");

s.deselectAll();

```

***Handling of Mouse Hover Actions:

-->Set of options displayed by moving mouse pointer on specific element.

-->By using selenium we cannot handle Mouse Hover Actions

-->To handle mouse action we use Actions class

**Actions: It is a class which contains non-static method which are used to perform mouse & keyboard action.

**Procedure to perform Action:

- 1: Create actions class object & pass WebDriver parameter
- 2: Identify element that need to be handled
- 3: By using Actions class non-static methods, perform action.

-->List of methods present in Actions class

1:moveToElement(): This method is used to move mouse pointer to target element

2: perform(): This method is used to execute Actions class Methods

-->Every Actions class method should end with perform().

Ques: WATS to select About Fatcow in fatcow App

Script:

```
WebDriver driver = new FirefoxDriver();  
driver.get("http://www.fatcowhosting.com/");  
//create object of action class & pass webDriver parameter  
Actions a = new Actions(driver);  
//identify the element  
WebElement ele = driver.findElement(By.linkText("Around the Farm"));  
a.moveToElement(ele).perform();  
driver.findElement(By.linkText("About FatCow")).click();
```

AssignQues: WATS to perform foll actions:

- 1: Open irctc app
 - 2: Move mouse cursor to MORE option
 - 3: Select any one option from dropdown
-

AssignQues: test case

- 1: Open browser
- 2: Naviagte to demo webshop <https://demowebshop.tricentis.com/>
- 3: Mouse hover on computer and click on any one option