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| **Revision History** | | | |
| **Version** | **Date** | **Auteur** | **Description** |
| 001 | 28/12/16 | Gregory Amirthanathan | First version  Element Locators in Selenium  Pre requisite to write test cases in selenium  Handling Elements in Selenium  Programs |

Element Locator in Selenium

* Selenium supports 8-element locator to find element in web page.

1. ID

**Syntax** – By.id(“Id Value”)

**Example** – driver.findElement(By.id(“abc”)).click();

1. Name

**Syntax** - By.name(“Name Value”)

**Example** – driver.findElement(By.name(“abc”)).sendKeys(“def”);

1. TagName

**Syntax** - By.tagName(“TagName Value”)

**Example –** driver.findElement(By.tagName(“abc”)).click();

1. ClassName

**Syntax** - By.className(“ClassName Value”)

**Example –** driver.findElement(By.className(“abc”)).click();

1. LinkText

**Syntax** - By.linkText(“LinkText Value”)

**Example –** driver.findElement(By.linkText(“abc”)).click();

1. Partial LinkText

**Syntax** - By.partialLinkText(“Partial LinkText Value”)

**Example –** driver.findElement(By.partialLinkText(“abc”)).click();

1. CssSelector

**Syntax** - By.cssSelector(“CssSelector Value”)

**Example –** driver.findElement(By.cssSelector (“abc”)).click();

1. Xpath

**Syntax** - By.xpath(“Xpath Value”)

**Example –** driver.findElement(By.xpath(“abc”)).click();

**Details**:

Driver – Browser object

findElement() – WebDriver method

By – Built in Class

Click() – WebDriver method

sendKeys() – WebDriver method

Id – Element Locator

abc – Id value

def – Input data

Pre requisite to write test cases in selenium

* Element Locators (covered above)
* WebDriver commands
* Java Programming concepts
* Junit / TestNG framework (covered in another presentation)

WebDriver commands

* Browser commands
* WebDriver commands on navigation
* Other commands

Java Programming concepts

* Comments
* Modifiers
* Data Types
* Variables
* Operators
* Control Statement / Flow

Conditional Statement

Loop Statement

* String Handling
* Arrays
* Built in methods
* User defined methods
* I/O handling
* Exception handling
* Java OOPS

Inheritance

Polymorphism(Method Overloading/Method Overriding)

Abstraction(Abstract class/Interface)

Encapsulation

Handling Elements in Selenium

1. Handling Browser

Operations on Browser

* Launch Browser
* Navigate to Url
* Get Current Url
* Get Page Title
* Return Page source
* Return Window Handle (Return type int)
* Exit Browser (Focused/All Browser)

Imp Ops

* Navigate to another Url
* Navigate to Previous Url
* Navigate forward
* Refresh Browser
* Maximize Browser

1. Handle Edit Box

* Enter Value
* Check isDisplayed
* Check isEnabled
* Clear Value
* Return Value

Note: To perform multiple operations on any object, create WebElement

Assignment: Create WebElement and use all possible element locator available for above operation on edit box

1. Handle Text Area

Operation on Text Area

* Capture Text Area
* Capture Error Message

Assignment – Try for different login pages like Gmail, yahoo..

1. Handle Window Pop-up

Operation on :

Error window

Accept – OK

Dismiss – Cancel

Confirmation Pop-up

Accept – OK / Dismiss – Cancel

Assignment –

Take rediffmail, click login – handle pop –up or try other scenarios

1. Handle Button

Operation on button—

* Click
* isDisplayed
* isEnabled
* Return Name of the Object

getAttribute();

* Return Type of the Object

1. Frames

* By Index

Syntax – driver.switchTo().frame(int index);

Example -- driver.switchTo().frame(2);

Frame index rule—Top left to Right bottom

|  |  |
| --- | --- |
| 0 | 2 |
| 1 |

* By Name

Syntax – driver.switchTo().frame(“String Name”);

Example – driver.switchTo().frame("css”);

Note —

1. Open Firebug – mouse pointer – Select element – Html – Nearest frame tag – frame name
2. Open Firebug – Firepath – Top Window dropdown – Shows list of frames in an webpage
3. driver.switchTo().defaultContent(); --- Switch to main/top window
4. Use Thread.sleep(ms) in between to handle synchronization

Assignment

Goto <http://sleniumhq.github.io/slenium/docs/api/java/index.html>

Switch to 3rd frame (using index)

Click on a element

Switch to main or top window

Switch to 1st frame using name

Click on element

Switch to main or top frame

Exit browser

1. Mouse Over

It is an Event

// Create Action builder instance by passing WebDriver instance

Action builder = new Action (driver);

WebElement menuElement = driver.findElement(By.linkText(“abc”));

builder.moveToElement(menuElement).build.perform;

driver.findElement(By.linkText(“FAQ”).click();

Example / Assignment –

Goto <http://www.carmax.com>

Mouseover on any menu

Select any submenu

Exit Browser

Note – Use Thread.sleep(ms) in case of failure

1. Multiple Window

Navigate to multiple window using Parent – Child relationship

Concept –

Use getWindowHandle() to store Parent

Store Parent in String

Use getWindowHandles() to store Child

Store Child in Array

Use For-Each loop

Use Conditional Statement

Syntax – driver.switchTo().window(Parent/Child);

Example –

driver.findElement(By.id(“”)).click();

String parent = driver.getWindowHandle();

Set<String> handles = driver.getWindowHandles();

For (String s1 : handles){

If (! S1.equals(parent){

driver. switchTo().window(s1);

System.out.println(“driver.getCurrentUrl()”);

}

}

driver. switchTo().window(parent);

System.out.println(“driver.getCurrentUrl()”);

Note – More than one child use if – else structure

1. Duplicate Objects

On Same webpage

* Goto <http://www.gcrit/build3/admin/index.php>
* Enter username/password
* Click online catalogue link
* Exit browser

(Catalogue link is present on the web page irrespective of login, and test case passes)

Assignment – Apply condition in such a way that Catalogue link is validated only in case of successful login(admin/admin@123)

On Different Webpage

* Goto <http://www.infibeam.com>
* Click login/register link
* Click create new account link
* Enter password in 2nd password field

Note –

* Observe in Firebug, (xpath,id,values,name) is same for both password field
* Use getCurrentUrl() / NavigateTo() method before click the required element

1. Image

Three types of image in Web environment

         General Image (No functionality)

         Image button (Submits)

         Image link (Directs to another page/location)

Example –

**package** demo;

**import** org.openqa.selenium.\*;

**import** org.openqa.selenium.firefox.FirefoxDriver;

**public** **class** ImageTest {

**public** **static** **void** main(String[] args) **throws** Exception {

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

              driver.manage().window().maximize();

              Thread.*sleep*(2000);

              // auto it

              Runtime.*getRuntime*().exec("D:\\shr\\vin\\Auto\_IT\\AutoNew2.exe");

              //1. Image - no functionality

              driver.get("https://gamirtha:virat@2016@[www.google.com](http://www.google.com/" \t "_blank)");

              Boolean s1 =driver.findElement(By.*id*("hplogo")).isDisplayed();

              System.***out***.println(s1);

              String s = driver.findElement(By.*id*("hplogo")).getAttribute("title");

              System.***out***.println(s);

              Thread.*sleep*(2000);

              //2. click on image button

              driver.navigate().to("[http://newtours.demoaut.com/](http://newtours.demoaut.com/" \t "_blank)");

              driver.findElement(By.*name*("login")).click();

              //3. click on image link

              driver.navigate().to("[http://www.seleniumhq.org/](http://www.seleniumhq.org/" \t "_blank)");

              driver.findElement(By.*xpath*(".//\*[@id='choice']/tbody/tr/td[2]/center/a/img")).click();

              driver.close();

       }

}

1. Link

Operations on link:

* Click
* Check the link existence
* Check enabled status
* Return link name

1. Handle radio button

Operation on radio button:

* Select
* Check displayed status
* Check enabled status
* Check selected status

1. Handle Drop down box

Operation:

* Select Item
* Check displayed status
* Check enabled status
* Items count

package demo;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.WebElement;

import org.openqa.selenium.firefox.FirefoxDriver;

import org.openqa.selenium.support.ui.Select;

import java.util.List;

public class GcDemo {

public static void main(String[] args) {

WebDriver driver = new FirefoxDriver();

driver.get("dhdgd");

Select s = new Select(driver.findElement(By.xpath("dd")));

s.selectByIndex(0);

s.selectByValue("ss");

s.selectByVisibleText("sssss");

//List<WebElement>

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

System.out.println(e.size());

}

}

1. Handle Check box

Operation:

* Select
* Unselected
* Check displayed status
* Check enabled status
* Check selected status

1. Handle Web Table / Html Table

Operation:

* Return Cell Value
* Row count
* Cell count

package demo;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.WebElement;

import org.openqa.selenium.firefox.FirefoxDriver;

import java.util.List;

public class GcDemo {

public static void main(String[] args) {

WebDriver driver = new FirefoxDriver();

driver.get("dhdgd");

String s = driver.findElement(By.xpath("")).getText();

System.out.println(s);

WebElement e = driver.findElement(By.id("1"));

List<WebElement> s1 = e.findElements(By.tagName("td"));

System.out.println(s1.size());

List<WebElement> s2 = e.findElements(By.tagName("tr"));

System.out.println(s2.size());

}

}

1. Handle Inline elements

Span tag is used to group inline elements in a document

package demo;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.WebElement;

import org.openqa.selenium.firefox.FirefoxDriver;

import java.util.List;

public class GcDemo {

public static void main(String[] args) {

// Example1

WebDriver driver = new FirefoxDriver();

driver.get("dhdgd");

driver.findElement(By.xpath(",,,")).click();

driver.findElement(By.xpath("fgf")).click();

driver.navigate().back();

//// ----------------------------//////

// Example2

WebDriver driver1 = new FirefoxDriver();

driver1.get("dhdgd");

driver1.findElement(By.xpath(",,,")).click();

driver1.findElement(By.xpath("fgf")).click();

driver1.findElement(By.xpath("fghgff")).click();

}

}