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();

2. Name

Syntax - By.name("Name Value")

Example – driver.findElement(By.name("abc")).sendKeys("def");

3. TagName

Syntax - By.tagName("TagName Value")

Example – driver.findElement(By.tagName("abc")).click();

4. ClassName

Syntax - By.className("ClassName Value")

Example – driver.findElement(By.className("abc")).click();

5. LinkText

Syntax - By.linkText("LinkText Value")

Example – driver.findElement(By.linkText("abc")).click();

6. Partial LinkText

Syntax - By.partialLinkText("Partial LinkText Value")

Example – driver.findElement(By.partialLinkText("abc")).click();

7. CssSelector

Syntax - By.cssSelector("CssSelector Value")

Example – driver.findElement(By.cssSelector ("abc")).click();

8. 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

2. 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

3. Handle Text Area

Operation on Text Area

- Capture Text Area
- Capture Error Message

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

4. 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

5. Handle Button

Operation on button—

- Click
- isDisplayed
- isEnabled
- Return Name of the Object
- Return Type of the Object

6. 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 —

I. Open Firebug – mouse pointer – Select element – Html – Nearest frame tag – frame name

II. Open Firebug – Firepath – Top Window dropdown – Shows list of frames in an webpage

III. driver.switchTo().defaultContent(); --- Switch to main/top window

IV. 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

7. 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

8. 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

9. 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

10. 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
");

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/");

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

                //3. click on image link

                driver.navigate().to("http://www.seleniumhq.org/");

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

                driver.close();


        }


}
```

11. Link

Operations on link:

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

12. Handle radio button

Operation on radio button:

- Select

- Check displayed status
- Check enabled status
- Check selected status

13. 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());

	}
```

}

14. Handle Check box

Operation:

- Select
- Unselected
- Check displayed status
- Check enabled status
- Check selected status

15. 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());


        }

}
```

16. 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();


    }


}
```