**Handling Elements in Selenium WebDriver**  
  
Pre-requisites to create Test cases in Selenium  
  
i) Element Locators (To recognize/identify Elements)  
  
ii) WebDriver Methods (To perform operations on Elements)  
  
iii) Programming features (To enhance Test cases)  
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iv) TestNG Annotations (Grouping Test Cases, Test Batch execution and generating reports.)  
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**i) Element Locators**  
   
1) id  
  
2) name  
  
3) className  
  
4) tagName  
  
5) linkText  
  
6) parialLinkText  
  
7) cssSelector  
  
8) xpath  
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Web Elements  
   
Browser -driver object  
Page-----------  
Link  
Button  
Image, Image Button, Image Link  
Edit box  
Text Area  
Check box  
Radio Button  
Drop down box  
List box  
Combo box  
Web Table / HTML Table  
Frame etc...  
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**ii) WebDriver Methods**  
   
**a) Methods on Browser**  
1) get()  
  
2) getTitle()  
  
3) getPageSource()  
  
4) getCurrentUrl()  
  
5) getwindowHandle()  
  
6) close()  
  
7) quit()  
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**b) Browser navigation methods**  
1) navigate().to()  
  
2) navigate().back()  
  
3) navigate().forward()  
  
4) navigate().refresh()  
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**c) Methods on Elements**  
1) findElement()  
  
2) findElements()  
  
3) sendkeys()  
  
4) clear()  
  
5) click()  
  
6) isEnabled()  
  
7) isDisplayed()  
  
8) isSelected()  
  
9) getText()  
  
10) getAttribute()  
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**d) Others**  
1) manage.window.maximize()  
  
2) .explicitlyWait()  
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**iii) Java Programming features**  
  
**A) Java Fundamentals**  
   
1) Comments  
  
2) Data Types  
  
3) Modifiers  
  
4) Variables  
  
5) Operators  
  
6) Conditional Statements  
  
7) Loop Statements  
  
8) String handling  
  
9) Arrays in Java  
  
10) Built in Methods  
  
11) User defined Methods  
  
12) Input and Output Operations, File Handling  
  
13) Exception Handling  
  
**B) Java OOPS**  
   
1) Inheritance  
  
2) Polymorphism  
  
3) Abstraction   
  
4) Encapsulation  
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**Handling Elements in Selenium**  
  
i) Handling Browser  
  
**Operations on Browser:**  
   
> Launch the Browser  
> Navigate to specified URL  
> Return Current URL  
> Get the Page Title  
> Return Page source  
> Return Window handle  
> Close focused Browser  
> Close all browsers that opened by selenium WebDriver during execution  
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> Navigate to another URL  
> Navigate back to previous URL  
> Navigate forward  
> Refresh the Browser  
> Maximize the Browser window.  
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**Examples:**  
   
public static void main(String[] args) {  
WebDriver driver = new FirefoxDriver();  
driver.get("https://www.google.co.in");  
  
String PageTitle = driver.getTitle();  
System.out.println(PageTitle);  
  
String URL = driver.getCurrentUrl();  
System.out.println(URL);  
  
String PageSource = driver.getPageSource();  
System.out.println(PageSource);  
  
String WindowHandle = driver.getWindowHandle();  
System.out.println(WindowHandle);  
  
driver.close();  
driver.quit();  
----------------------------------------  
public static void main(String[] args) {  
WebDriver driver = new FirefoxDriver();  
driver.get("https://www.google.co.in");  
driver.navigate().to("https://login.yahoo.com/");  
System.out.println(driver.getCurrentUrl());  
  
driver.navigate().back();  
System.out.println(driver.getCurrentUrl());  
  
driver.navigate().forward();  
System.out.println(driver.getCurrentUrl());  
  
driver.manage().window().maximize();  
--------------------------------------------  
ii) Handling Edit box  
  
**Operations on Edit box**  
   
> Enter a value  
> Clear the Value  
> Return the Value  
> Check Displayed status  
> Check Enabled statues  
  
**Example:**  
   
//Finding Edit box using id locator  
driver.findElement(By.id("Email")).sendKeys("gcrindia");  
  
//Finding Edit box using name locator  
driver.findElement(By.name("Email")).sendKeys("gcrindia");  
  
//Finding Edit box using CSS Selector locator  
driver.findElement(By.cssSelector("#Email")).sendKeys("gcrindia");  
  
//Finding Edit box using xpath locator  
driver.findElement(By.xpath(".//\*[@id='Email']")).sendKeys("gcrindia");  
  
//Clear the Value  
driver.findElement(By.xpath(".//\*[@id='Email']")).clear();  
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WebElement Email = driver.findElement(By.xpath(".//\*[@id='Email']"));  
  
Email.sendKeys("gcrindia");  
  
//Return Type of the Object  
Email.getAttribute("type");  
  
//Return the Value  
System.out.println(Email.getText());//gcrindia  
  
//Return Displayed status  
System.out.println(Email.isDisplayed());//true  
  
//Return Enabled status  
System.out.println(Email.isEnabled());//true  
  
//Clear the value  
driver.findElement(By.id("Email")).clear();  
---------------------------------------------  
iii) Handle Text Area  
  
**Capture Text Area/Capture Error Message**  
  
**Capture Text Area:**  
   
driver.get("https://www.gmail.com");  
String s = driver.findElement(By.xpath("html/body/div[1]/div[2]/div[1]/h1")).getText();  
System.out.println(s);  
  
**Capture Error Message:**  
   
WebDriver driver = new FirefoxDriver();  
driver.get("https://login.yahoo.com/");  
driver.manage().window().maximize();  
driver.findElement(By.xpath(".//\*[@id='login-signin']")).click();  
String ErrorMessage = driver.findElement(By.id("mbr-login-error")).getText();   
System.out.println(ErrorMessage);  
  
**Handle Window Popup**  
   
WebDriver driver = new FirefoxDriver();  
driver.get("https://mail.rediff.com/cgi-bin/login.cgi");  
driver.findElement(By.name("proceed")).click();  
  
Alert alert = driver.switchTo().alert();  
String Error\_Message =alert.getText();//Returns Error message  
System.out.println(Error\_Message);  
  
alert.accept();//Closes OK Button  
driver.findElement(By.id("login1")).sendKeys("Inda123");  
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iv) Handle Button  
   
> Click  
> Check the Displayed status  
> Check the Enabled status  
> Return name of the Object  
> Return type of the Object  
  
**Example:**  
WebDriver driver = new FirefoxDriver();  
driver.get("https://www.gmail.co.in");  
  
System.out.println(driver.findElement(By.id("next")).isEnabled());//true  
  
driver.findElement(By.id("next")).click();  
  
System.out.println(driver.findElement(By.id("next")).isDisplayed());//true  
  
System.out.println(driver.findElement(By.id("next")).isEnabled());//false  
  
System.out.println(driver.findElement(By.id("next")).getAttribute("type"));  
  
System.out.println(driver.findElement(By.id("next")).getAttribute("name"));  
  
System.out.println(driver.findElement(By.id("next")).getAttribute("value"));  
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