Driver Initialization

Firefox (*Below v.47*) Refer Part2-Page58	System.setProperty("webdriver.gecko.driver", "PathTo\\geckodriver.exe");
Download from https://github.com/mozilla/geckodriver/releases	WebDriver driver = new FirefoxDriver();
Chrome Refer Part2-Page59	System.setProperty("WebDriver.chrome.driver", System.getProperty("user.dir")+"//BrowserDrivers//chromedriver.exe");
Download from https://sites.google.com/a/chromium.org/chromedriver/downloads	WebDriver driver = new ChromeDriver();
Internet Explorer Refer Part2--Page59	System.setProperty("WebDriver.ie.driver", "PathTo//IEDriverServer.exe");
Download from The Internet Explorer Driver Server at http://docs.seleniumhq.org/download/	WebDriver driver = new InternetExplorerDriver();
Safari Driver	WebDriver driver = new SafariDriver();

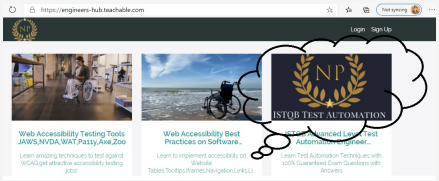
Selenium Locators

Locating by ID Refer Part2-Page37	driver.findElement(By.id("q")).sendKeys("Selenium 3");
Locating by Name Refer Part2--Page37	driver.findElement(By.name("q")).sendKeys("Selenium 3");
Locating by Xpath Refer Part2-Page37/38	driver.findElement(By.xpath("//input[@id='q']")).sendKeys("Selenium 3");

Selenium Locators (cont)

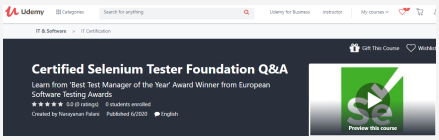
Locating Hyperlinks by Link Text Refer Part2-Page38/39	driver.FindElement(By.LinkText("edit this page")).Click();
Locating by DOM Refer Part2-Page39	dom =document.getElementById('signinForm')
Locating by CSS Refer Part2-Page40-43	driver.FindElement(By.CssSelector("#rightbar > .menu > li:nth-of-type(2) > h4"));
Locating by ClassName Refer Part2--Page37	driver.findElement(By.className("profile-header"));
Locating by TagName Refer Part2--Page37	driver.findElement(By.tagName("select")).Click();
Locating by LinkText Refer Part2-Page37-40	driver.findElement(By.linkText("NextPage")).click();
Locating by PartialLinkText Refer Part2-Page37-40	driver.findElement(By.partialLinkText("NextP")).click();

ISTQB Advanced Test Automation Engineering



https://engineers-hub.teachable.com/p/istqb-advanced-level-test-automation-engineer-professional-training-with-q-a

Selenium Q&A



https://www.udemy.com/course/certified-selenium-tester-foundation/

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Find element VS Find elements

driver.findElement()	When no match has found(0) throws NoSuchElementException when 1 match found returns a WebElement instance when 2+ matches found returns only the first matching web element
driver.findElements()	when no macth has found (0) returns an empty list when 1 match found returns a list with one WebElement when 2+ matches found returns a list with all matching WebElements

Handle alerts: (Web-based alert pop-ups)

driver.switchTO().alert.getText()	to retrieve the alert message
driver.switchTO().alert.accept()	to accept the alert box
driver.switchTO().alert.dismiss()	to cancel the alert box
driver.switchTO().alert.sendKeys("Text")	to send data to the alert box

Page Loading Strategy

normal	ChromeOptions chromeOptions = new ChromeOptions(); chromeOptions.setPageLoadStrategy(PageLoadStrategy.NORMAL); WebDriver driver = new ChromeDriver(chromeOptions);
eager: When setting to eager, Selenium WebDriver waits until DOMContentLoaded event fire is returned.	ChromeOptions chromeOptions = new ChromeOptions(); chromeOptions.setPageLoadStrategy(PageLoadStrategy.EAGER); WebDriver driver = new ChromeDriver(chromeOptions);

Page Loading Strategy (cont)

none: When set to none Selenium WebDriver only waits until the initial page is downloaded.	ChromeOptions chromeOptions = new ChromeOptions(); chromeOptions.setPageLoadStrategy(PageLoadStrategy.NONE); WebDriver driver = new ChromeDriver(chromeOptions);

The document.readyState property of a document describes the loading state of the current document. By default, WebDriver will hold off on responding to a driver.get() (or) driver.navigate().to() call until the document ready state is complete
By default, when Selenium WebDriver loads a page, it follows the normal pageLoadStrategy.

Cookies

addCookie(arg)	driver.manage().addCookie(new Cookie("foo", "bar"));
getCookies()	driver.manage().getCookies(); // to get all cookies
getCookieNamed()	driver.manage().getCookieNamed("foo");
deleteCookieNamed()	driver.manage().deleteCookieNamed("foo");
deleteCookie()	Cookie cookie1 = new Cookie("test2", "cookie2"); driver.manage().addCookie(cookie1); driver.manage().deleteCookie(cookie1); // deleting cookie object
deleteAllCookies()	driver.manage().deleteAllCookies(); // deletes all cookies

Take screenshot

Capture the screenshot and store	getScreenshotAs

getScreenshotAs — used to Capture the screenshot and store it in the specified location. This method throws WebDriverException. copy() method from the File Handler class is used to store the screenshot in a destination folder.
Code Example:
TakesScreenshot screenShot =(TakesScreenshot)driver;
FileHandler.copy(screenShot.getScreenshotAs(OutputType.FILE), new File("path/to/destination/folder/screenshot.png"));

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Execute Javascript

Executes an asynchronous piece of JavaScript	executeAsyncScript()
Executes JavaScript	executeScript()

Code Example:

```
if (driver instanceof JavascriptExecutor) {
((JavascriptExecutor)driver).executeScript("alert('hello world');");
}
```

Annotations

TestNG	@BeforeSuite @AfterSuite @BeforeTest @AfterTest @BeforeGroups @AfterGroups @BeforeClass @AfterClass @BeforeMethod @AfterMethod
JUnit	@After @AfterClass @Before @BeforeClass @Ignore @Test

Selenium Exceptions

'Server Exception : sessionId should not be null Refer Part2-Page160	Replace Chrome Driver with Latest Version
ERROR: No sessionId provided Refer Part2-Page160	Use Jenkins
UnreachableBrowserExceptionRefer Part2-Page160	Registry Key Changes Recommended
Illegal state exception using Selenium 3 Refer Part2-Page161	Get latest Firefox Gecko Driver

Keyboard and Mouse events

keyboard events	keyDown(); keyUp(); sendKeys()

Keyboard and Mouse events (cont)

Mouse events	clickAndHold(); contextClick()// — performs the mouse right-click action; doubleClick(); dragAndDrop(source,target); dragAndDropBy(source,xOffset,yOffset); moveByOffset(xOffset,yOffset); moveByElement(); release()

Code Example:

```
Actions builder = new Actions(driver);
Action actions = builder
.moveToElement("login-textbox")
.click()
.keyDown("login-textbox", Keys.SHIFT)
.sendKeys("login-textbox", "hello")
.keyUp("login-textbox", Keys.SHIFT)
.doubleClick("login-textbox")
.contextClick()
.build();

actions.perform() ;
```

Element validation

isEnabled()	determines if an element is enabled or not, returns a boolean.
isSelected()	determines if an element is selected or not, returns a boolean.
isDisplayed()	determines if an element is displayed or not, returns a boolean.

Handle multiple windows and tabs

getWindowHandle()	used to retrieve the handle of the current page (a unique identifier)
getWindowHandles()	used to retrieve a set of handles of the all the pages available
driver.switchTo().window-(“windowName/handle”)	switch to a window
driver.close()	closes the current browser window
driver.quit();	This method Closes all windows opened by the WebDriver.

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Switch Frames

Mentioning the frame index number, the Driver will switch to that specific frame	**driver.switchTo.frame(int frameNumber)**
Mentioning the frame element or ID, the Driver will switch to that specific frame	**driver.switchTo.frame-(string frameNameOrID)**
Mentioning the frame web element, the Driver will switch to that specific frame	**driver.switchTo.frame-(WebElement frameE-lement)**
Switching back to the main window	**driver.switchTo().defaul-tContent()**

Materials

Selenium Certification	https://isqi.org/en/54-certified-selenium--tester-foundation.html
Selenium Certification Q&A	https://engineers-hub.teachable.com/
Part1-Software Automation Testing Secrets Revealed	https://www.amazon.com/Software-Auto-mation-Testing-Secrets-Revealed/dp/1-729432506/
Part2-Software Automation Testing Secrets Revealed	https://www.amazon.com/gp/product/17-29432379/
Part3-Software Automation Testing Secrets Revealed	https://www.amazon.com/Advanced-Sele-nium-Web-Accessibility-Testing/dp/19-49449432/
Udemy Course-Se-lenium	https://engineers-hub.teachable.com/
Udemy Course-ISTQB Test Automation Engineering	https://engineers-hub.teachable.com/

Materials (cont)

Useful Commands (Credits: Madhan K)	https://medium.com/@madhankumaravelu93/sel-enium-cheat-sheet-a-comprehensive-list-of-seleni-um-commands-fa4c5c9d11ab
Useful Commands (Credits: Bijan Patel)	https://qascript.com/selenium-webdriver-comma-nds-cheat-sheet/

Get methods in Selenium

getTitle()	used to retrieve the current title of the webpage
getCurrentUrl()	used to retrieve the current URL of the webpage
getPageSo-urce()	used to retrieve the current page source of the webpage
getText()	used to retrieve the text of the specified web element
getAttribute()	used to retrieve the value specified in the attribute

Navigation

Refresh Page	**driver.navigate().refresh()**
Navigate forwards in the browser history	**driver.navigate().for-ward()**
Navigate backward in the browser history	**driver.navigate().back()**

Desired Capabilities-Chrome

DesiredCapabilities caps = new DesiredCapabilities(); caps.setCapa-bility(“browserName”, “chrome”); caps.setCapability(“browserVer-sion”, “80.0””); caps.setCapability(“platformName”, “win10”); WebDriver driver = new ChromeDriver(caps); // Pass the capabilities as an argument to the driver object

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Desired Capabilities-Firefox

DesiredCapabilities caps = new DesiredCapabilities(); caps.setCapability(“browserName”, “firefox”); caps.setCapability(“browserVersion”, “81.0””); caps.setCapability(“platformName”, “win10”);
WebDriver driver = new FirefoxDriver(caps); // Pass the capabilities as an argument to the driver object

Practice Scripts

Launch Webpage Refer Part2-Page60	driver.get("www.webdriverinselenium.com");
Click Button Refer Part2-Page60	driver.findElement(By.id("submit")).click();
Store Text Refer Part2-Page60	String txtDropdown = driver.findElement(By.ID-("select")).getText();
Enter Text Refer Part2-Page61	driver.findElement(By.xpath("//input[@name='FirstName034']")).sendKeys("NarayananPalani");
Handle Alert Refer Part2--Page62	Alert Alertpopup = driver.switchTo().alert();
(Mouse)Click Refer Part2-Page62	driver.findElement(By.xpath("//input[@value='OBJECT NAME']")).click();
Compare Text Refer Part2--Page64	Assert.assertTrue(chkbox12.isSelected());
Disable a Field Refer Part2--Page64	driver.getElementsByName('<ObjectID>')[0].setAttribute('disabled', '');
Enable a Field Refer Part2--Page64	driver.getElementsByName('<ObjectID>')[0].removeAttribute('disabled';
Screenshot Refer Part2-Page64	File snapshot = ((TakesScreenshot)driver).getScreenshotAs(OutputType.FILE);

Practice Scripts (cont)

	FileUtils.copyFile(snapshot, new File("C:\\screenshot.jpg"));
Print the Title of the Page Refer Part2-Page68	String pagetitle = driver.getTitle();
	System.out.print(pagetitle);
Implicit Wait Refer Part2-Page69	driver.manage().timeouts().implicitlyWait(10, TimeUnit.SECONDS);
Explicit Wait Refer Part2-Page70	WebDriverWait wait = new WebDriverWait(driver, 20);
	wait.until(ExpectedConditions.textToBePresentInElementLocated(By.xpath("//div[@id='<Object ID>']"), "Enter Your Personal Details"));
Fluent Wait Refer Part2-Page70	Wait wait = new FluentWait(driver)
	.withTimeout(20, SECONDS)
Sleep Refer Part2-Page70	Thread.Sleep(10);

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