To Use XPath Expressions With Mozilla-Fire Fox:

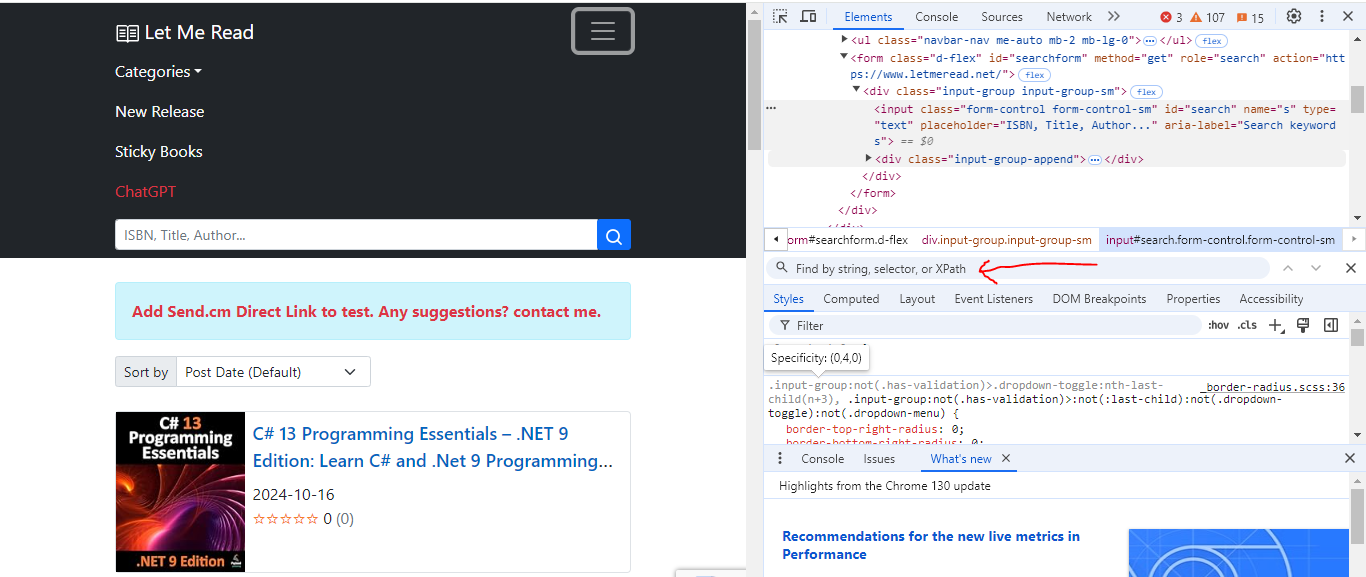
* From Terminal: $x(… Expression Will Be Here …)

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**Note**: When We Build Bots, To Automate The Web Pages Work, We Must Be Careful When Handle: iframe-Elements.

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**Note**: Using Chrome We Can Inspect Any Element, Then We Press CTRL + F:



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**Note**: For Chrome Browser, Also We Can Use $x(… Expression Will Be Here …)



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**Note**: When We Choose Elements By Link Text OR Partial Link Text We Must Be Attention To Spaces Around Any Word.

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**Note**: When We Use CSS Selectors using the Formula, e.g. input[class='class-name-here']; it is exact matching, that means if the tag has multiple Classes We Must Set Them All, Otherwise: It Will Not Selected.

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**Note 1**: With Single Slash We Look Only For Next Child Only (Immediate Child).

**Note 2**: With Double Slash We Look For All Nested Children.

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**Note**: We Must Understand The Using Of / And // To Build Effective XPATH-Expressions That Will Not Break When The Page Change Its Code.

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**Note**: We Can Use text() in XPATH For Finding Elements Depending On Their Text Content; e.g. a[text()='Text-Will-Be-Here'].

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**Note (To Remember)**: If We Want To Search In Text OR In Attribute, We Can Use Contains; e.g. a[contains(text, 'Text-Will-Be-Here')], a[contains(@href, 'Link-Will-Be-Here')].

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**Note**: We Can Use Logical Operator Inside The Formula Of Tag; e.g. a[**contains**(@id, 'Id-Will-Be-Here') **and** **contains**(@class, 'Class-Will-Be-Here')].

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**Note (To Remember)**: If We Want To Select Depending On Tag Attribute; e.g. a[@class='Class-Will-Be-Here']. OR div[@id='id-will-be-here'].

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**Note**: If We Want To Select Element Depending On The Start Value Of Its Specific Attribute; We Can Use Start-With; e.g.: div[starts-with(@class, ‘’)]

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**Note**: If We Want To Select The Parent Element Of Specific Element Using XPATH; We Can Use xpath-expression-here//parent::tag-name-here.

**Ex**: **a[@href='/url-will-be-here']//parent::ul**

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**Note**: If We Want To Select The Preceding-sibling Of Specific Element, We Can Use preceding-sibling::tag-will-be-here.

**Ex**: **a[@href='url-will-be-here']//parent::li//preceding-sibling::li**

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**Note**: If We Want To Find All Following Sibling Of Specific Element We Can Use: following-sibling::tag-will-be-here.

**Ex**: **a[@href='url-will-be-here']//parent::li//preceding-sibling::li//following-sibling::li**

**Ex**: If We Want To Select Specific Following Sibling We Can Use Indexing Of XPATH; In XPATH Indexing Starts From 1.

**a[@href='url-will-be-here']//parent::li//preceding-sibling::li//following-sibling::li[1]**

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**Note (To Remember):** If We Want To Select Element Depending On Text, We Can Use: Tag-Name[text()='text-will-be-here']

**Ex**: **a[text()='Text-Will-Be-Here']**

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**Note**: To Get The Current Title Of Page: ***driver.title***

print("The Title Of Page is: ", driver.title);

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**Note**: To Get The Current URL Of Page: ***driver.current\_url***

print("The Current URL Of Page Is: ", driver.current\_url);

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**Note**: To Maximize The Window Of Driver: ***driver.maximize\_window();***

driver.maximize\_window();

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**Note**: To Refresh The Page Of Driver (ex: Exception Has Happened): ***driver.refresh();***

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**Note**: To Go One Step Forward In The History Of The Browser: ***driver.forward();***

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**Note**: To Go One Step Backward In The History Of The Browser: ***driver.back();***

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**Note**: To Get The Page Source Of The Page: ***driver.page\_source***

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**Note**: The Difference Between ***driver.close();*** And ***driver.quit();***

* If We Have Multiple Windows That Are Opened, Then ***driver.quit();*** Will Close All Of Them.
* If We Have Multiple Windows That Are Opened, Then ***driver.close();*** Will Close The Active One.

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**Note (To Remember)**: If We Want To Select Element With Attribute We Can use:

* Write: ***a[@href='url-will-be-here']***

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**Note**: To Type Inside The Input Elements, We Can Use:

* We Write: ***web\_driver\_element.send\_keys('Data-Will-Be-Here');***

email\_input = driver.find\_element(By.XPATH, '//input[@id="email"]');

password\_input = driver.find\_element(By.XPATH, '//input[@id="login-password"]');

email\_input.send\_keys("gaafer@loka.com");

password\_input.send\_keys("Test@1234567890");

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**Note**: If We Want To Clear The Data Of Input Field, After We Send Keys To It, We Can Use: ***web\_driver\_element.clear();***

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**Note**: If We Want Our Driver To Wait N-Time-Of-Seconds For All The Session Of Browser, Then We Can Use: driver.implicitly\_wait(30)

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**Note (From Me)**: May We Have Multiple Elements With Same Class, But In JS The Developer Make A Trick, To Save The Site, Then We Must Select All Of Them And Then Make Action.

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**Note**: In Web Driver Elements We Have:

* ***First***: **is\_displayed()**.
* ***Second***: **is\_selected()**.
* ***Third***: **is\_disabled()**.

img\_element.is\_displayed();

img\_element.is\_enabled();

img\_element.is\_selected();

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**Note (To Remember)**: If We Want To Select Depending On Multiple Conditions, We Can Use Logical Operators:

***//input[contains(@type, 'radio') and contains(@name, 'cars')]***

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To Handle Select-Element:

from selenium.webdriver.support.select import Select;

element = driver.find\_element(By.XPATH, '//select[@id="carselect"]');

select\_element = Select(element);

select\_element.select\_by\_value('honda');

# The Index Start From Zero And Index Can Be String.

# The Index Start From Zero.

select\_element.select\_by\_index(1);

select\_element.select\_by\_visible\_text('BMW');

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To Get The Text Inside The Element That We Find It:

driver.maximize\_window();

driver.get("https://www.letskodeit.com/practice");

WebDriverWait(driver=driver, timeout=15).until(

    EC.presence\_of\_element\_located((

        By.XPATH, '//table[@id="product"]'

    ))

);

text\_element = driver.find\_element(

    By.XPATH,

    "//table[@id='product']/tbody/tr[2]/td[@class='course-name']"

);

print("The Text Element Is: ", text\_element);

print("The Content Of Text Element Is: ", text\_element.text);

driver.quit();

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***Note (From Me)***: The ***Until-Method*** of Explicit Wait Return an Element, So We Don’t Need To Use ***driver.find\_element-Method*** Again.

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***Note (From Me)***: The **driver.find\_element** Also Return An Element That Can Use ***find\_element()*** && ***find\_elements().***

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*Note (From Testing)*: The File Name Of Image Must Be End With **.png**

dest\_file\_name = str(time.time()) + "\_j-l-screen-shot.png";

try:

    driver.save\_screenshot(dest\_file\_name);

except Exception as e:

    print("The Error Is: ", e.\_\_str\_\_());

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In This Way, We Can Execute The Script That We Want.

*Note*: Also; We Have Method To Execute Async Scripts, Like: setTimeout, setInterval.

title = driver.execute\_script("return document.title");

print("The Title Of Document Is: ", title);

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To Get The Size Of Window That We Use It For Run Tests, We May Use JS.

height = driver.execute\_script("return window.innerHeight;");

width  = driver.execute\_script("return window.innerWidth");

print("The Height Of Window Is: " + str(height));

print("The Width Of Window Is: " + str(width));

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Note: To Scroll Down Using JS: **window.scrollBy(x, y);**

* **Ex**: *window.scrollBy(0, 800)*;
  + This Will Scroll Down By **800 pixels**.
  + **X** is For Horizontal Scrolling, **Y** is For Vertical Scrolling.
* **Note**: If We Set Negative Value For Scrolling, It Will Scroll Up.

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To Pass Arguments To execute\_script():

* Run The Command: *driver.execute\_script("arguments[0].scrollIntoView(true)", argument\_here);*
  + **Note**: The argument Can Be: ***element*** of ***driver.find\_element()***;

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t1 = driver.find\_element(By.LINK\_TEXT, "Cookie Policy");

location = t1.location\_once\_scrolled\_into\_view;

for key, value in location.items():

print("The Key Is: ", key, ", The Value Is: ", value);

time.sleep(2);

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The Best Way To Handle The Element Not Intractable Is Using XPATH:

t2 = WebDriverWait(driver=driver, timeout=25, poll\_frequency=1).until(

    EC.presence\_of\_element\_located((By.XPATH, '//input[@id="search"]'))

)

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To Get The Current Window Handle:

w1 = driver.current\_window\_handle;

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To Get List Of Window Handles, When Open Multiple Windows:

w2 = driver.window\_handles;

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To Switch From Window Handle To Window Handle:

for w in w2:

    if w not in w1:

        driver.switch\_to.window(w);

        print("Switch To Window: ", w);

        break;

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To Switch To iFrame By ID:

driver.switch\_to.frame(driver.find\_element(By.ID, 'courses-iframe'));

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To Return To iFrame Parent:

driver.switch\_to.parent\_frame();

OR:

driver.switch\_to.default\_content();

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*Note 1*: We Can Also Switch To iFrame Using *name-Attribute*.

*Note 2*: We Can Also Switch To iFrame Using Numbers, Where The First iFrame Is **0**.

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***Note***: Also For Alert We Can Authenticate The User, Using: username, and password.

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In This Way We Can Switch To Alert And Confirm Pop-Up:

t4 = driver.switch\_to.alert;

And In This Way We Confirm The Pop-Up:

t4.accept();

And In This Way We Can Cancel The Confirm:

t5.dismiss();

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To Perform Mouse Hover, Drag And Drop, Click The Element …etc. We Need To Use ActionChains:

from selenium import webdriver;

from selenium.webdriver import ActionChains;

from selenium.webdriver.chrome.service import Service;

from selenium.webdriver.common.by import By;

import time;

service = Service(executable\_path='chromedriver.exe');

driver = webdriver.Chrome(service=service);

driver.maximize\_window();

driver.get("https://www.letskodeit.com/practice");

driver.execute\_script("window.scrollBy(0, 700)");

time.sleep(1);

t1 = driver.find\_element(By.XPATH, '//div[@class="mouse-hover"]');

try:

    actionChains = ActionChains(driver=driver);

    actionChains.move\_to\_element(to\_element=t1).perform();

    time.sleep(3);

    t2 = driver.find\_element(By.XPATH, '//div[@class="mouse-hover"]//a[text()="Top"]');

    t3 = driver.find\_element(By.XPATH, '//div[@class="mouse-hover"]//a[text()="Reload"]');

    # t2.click();

    # Second Way

    actionChains.move\_to\_element(to\_element=t2).click().perform();

    time.sleep(3);

except Exception as e:

    print("The Exception Is: ", e.\_\_str\_\_());

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