

Locators - XPath

what is xpath?

XPath is defined as XML path.

It is a syntax or language for finding any element on the web page using XML path expression.

XPath is used to find the location of any element on a webpage using HTML DOM structure.

XPath can be used to navigate through elements and attributes in DOM.

I

DOM – Document Object Model

- DOM is an API Interface provided by browser.
- When a web page is loaded, the browser creates a Document Object Model of the page.

HTML

```
<!DOCTYPE html>
<html>
<head> </head>
<body>
  <button id="myBtn">Click Me</button>
  <input type="text" />
  <p id="demo1"> This is static text message </p>
  <p id="demo2"> Hello!</p>
</body>
</html>
```

DOM View

```
<!DOCTYPE html>
<html>
  <head>
    <#text:>
  <body>
    <#text:>
      <button id="myBtn">Click Me</button>
      <#text:>
        <input type="text" />
        <#text:>
          <p id="demo1"> This is static text message </p>
          <#text:>
            <p id="demo2"> Hello!</p>
          <#text:>
```

Rendered View

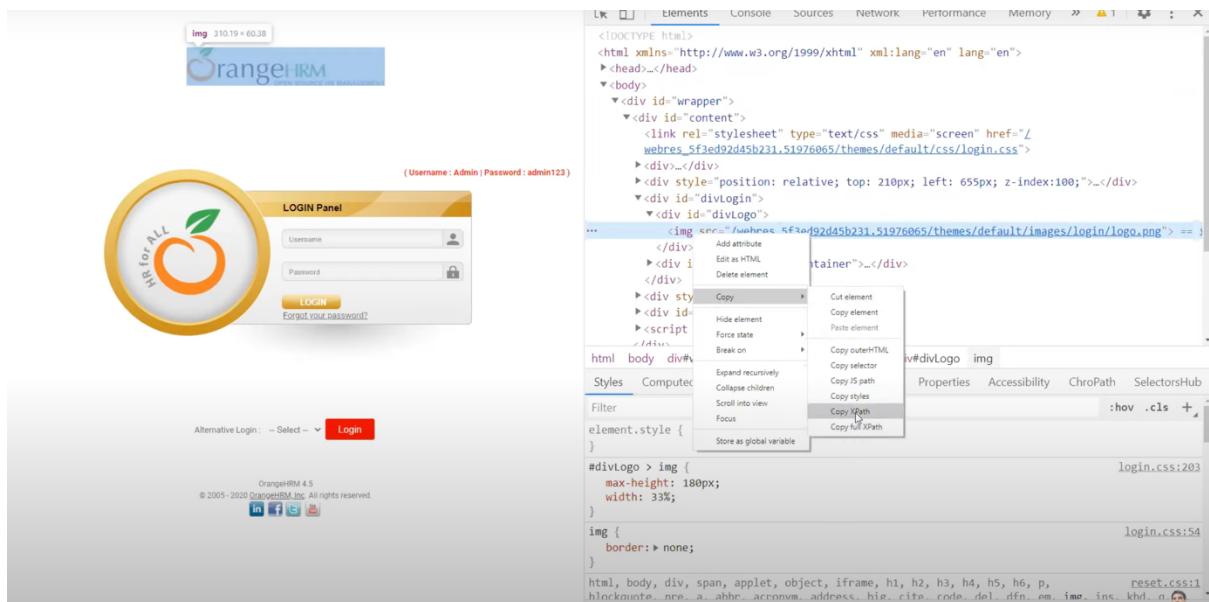
Click Me

This is static text message

Hello!

XPath works here

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Copy full xpath

/html/body/div[1]/div/div[3]/div[1]/img

Full xpath

Types of XPaths

- 1) Absolute Xpath / Full XPath
- 2) Relative Xpath / Partial XPath

/html/body/div[1]/div/div[3]/div[1]/img

//*[@id="divLogo"]/img

Full expath

Partial expath

Represents Whole dom structure

Partial expath always starts with double forward slash //

Partial xpath is shorter way to locate element

Types of XPaths

- 1) Absolute Xpath / Full XPath
/html/body/div[1]/div/div[3]/div[1]/img
- 2) Relative Xpath / Partial XPath
//*[@id="divLogo"]/img

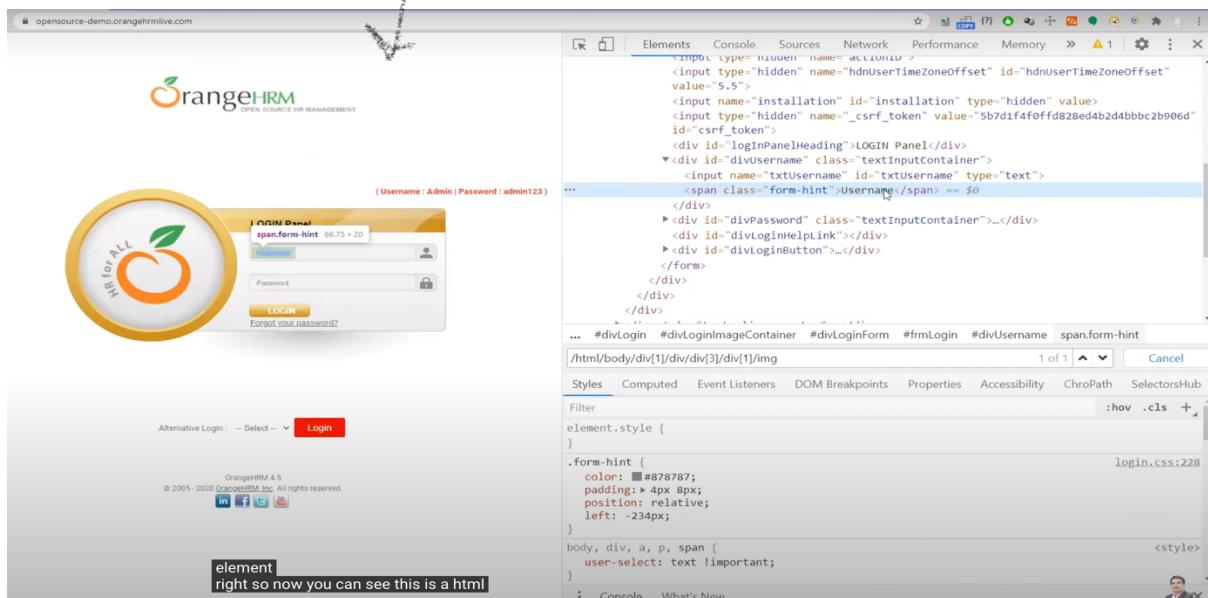
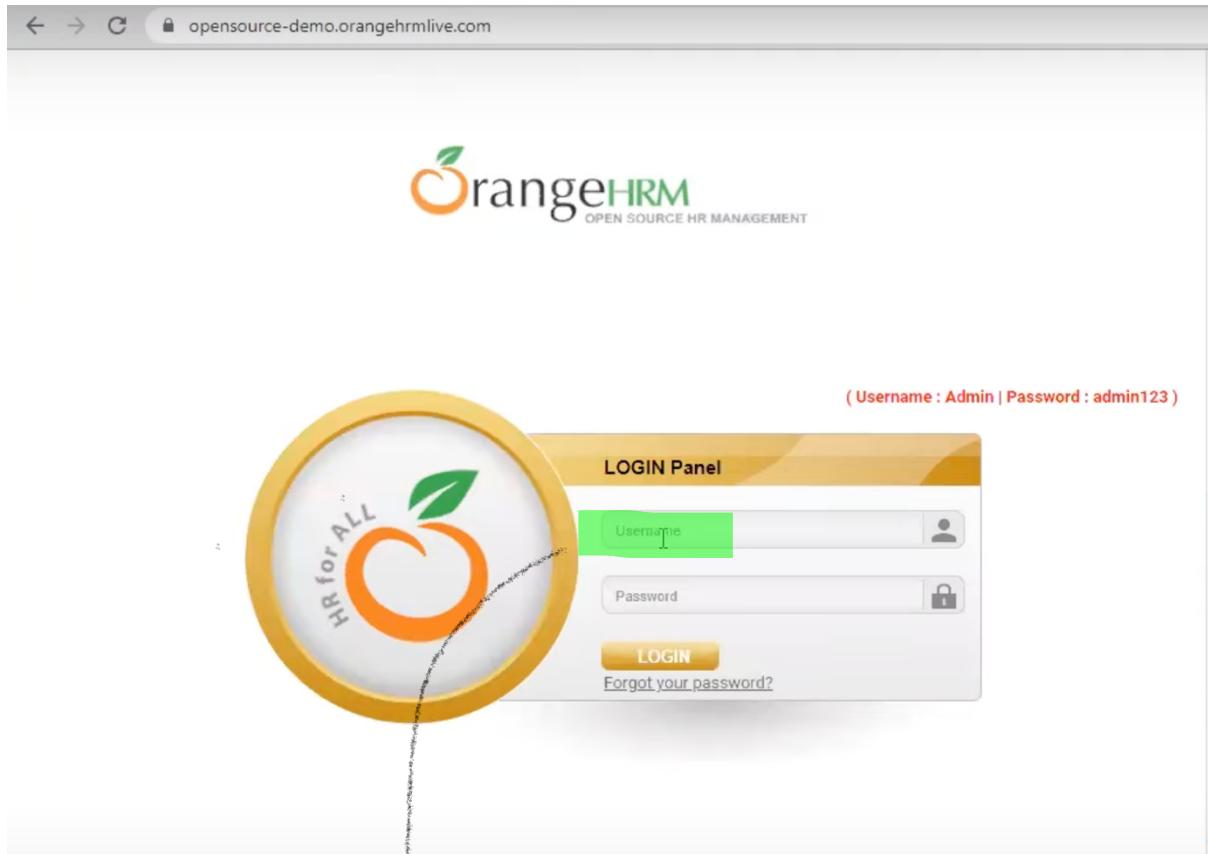
Diff between Absolute & Relative Xpaths

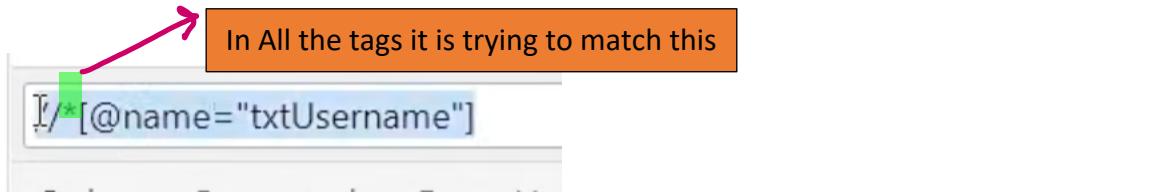
- 1) Absolute xpath starts from root node
Relative xpath directly jump to element on DOM.
- 2) Absolute xpath start WITH /
Relative xpath STARTS WITH //
- 3) in Absolute xpath we use only tags/nodes
In Relative xpath we use attributes.

Syntax of Relative Xpath

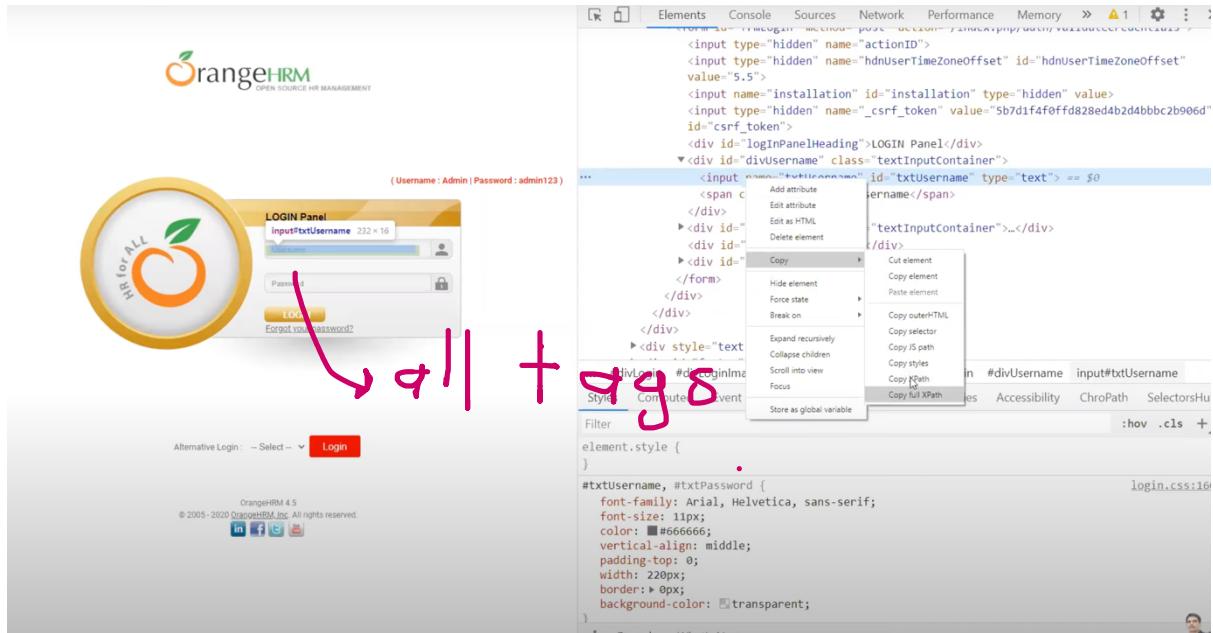
//tagname[@attribute='value']

Can be also double "





How to capture xpath

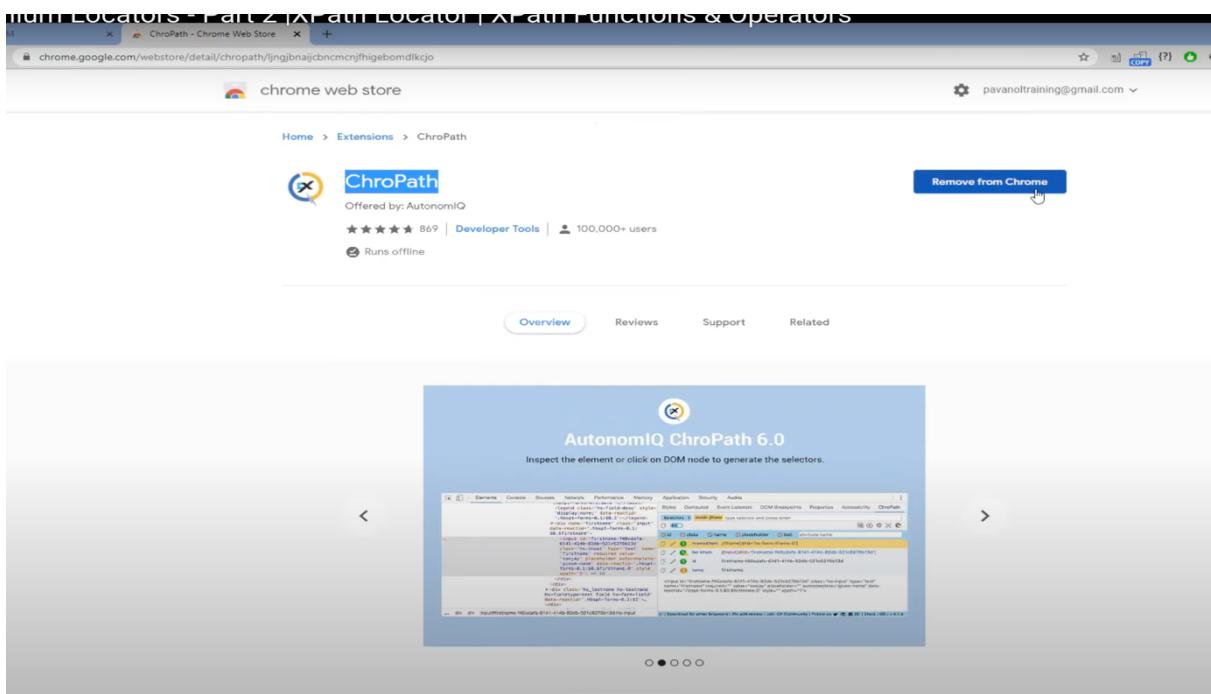


Syntax of Relative Xpath

Syntax: `//tagname[@attribute='value']`

Example: `//input[@name="txtUsername"]`
`//*[@name="txtUsername"]`

Copy xpath ---gives us partial xpath (relative xpath)
Copy full xpath – gives us absolute xpath(full xpath). – interview.



The screenshot shows the OrangeHRM login page with the developer tools open. The DOM tree on the right highlights the input field for the username. The CSS styles for the input field are shown in the bottom right panel.

```
<input type="hidden" name="actionID">
<input type="hidden" name="hdnUserTimeZoneOffset" id="hdnUserTimeZoneOffset" value="5.5">
<input name="installation" id="installation" type="hidden" value=""></input>
<input type="hidden" name="_csrf_token" value="5b7dif4f0ffd828ed4b2d4bbbc2b906d" id="csrf_token">
<div id="logInPanelHeading">LOGIN Panel</div>
... <div id="divUsername" class="textInputContainer">
    <input name="txtUsername" id="txtUsername" type="text"> == $0
    <span class="form-hint">Username</span>
</div>
▶ <div id="divPassword" class="textInputContainer">...</div>
▶ <div id="divLoginHelpLink"></div>
▶ <div id="divLoginButton">...</div>
</form>
</div>
</div>
...
#divLogin #divLoginImageContainer #divLoginForm #frmLogin #divUsername input#txtUsername
```

Styles Computed Event Listeners DOM Breakpoints Properties Accessibility ChroPath SelectorsHub

Filter

```
element.style { }
```

```
#txtUsername, #txtPassword {
    font-family: Arial, Helvetica, sans-serif;
    font-size: 11px;
    color: #666666;
    vertical-align: middle;
    padding-top: 0;
    width: 220px;
    border: 0px;
    background-color: transparent;
}
```

```
#txtUsername {
    width: 240px;
    border: 0px;
    height: 30px;
}
```

Rel –relative (partial) xpath demek

OrangeHRM

OPEN SOURCE HR MANAGEMENT

LOGIN Panel

(Username : Admin | Password : admin123)

HR for ALL

Alternative Login : Select Login

OrangeHRM 4.5
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Rel XPath //input[@name='txtUsername']

id CP XPath //input[@id='txtUsername']

Rel XPath //input[@id='txtUsername']

<input name="txtUsername" id="txtUsername" type="text" style=""/>

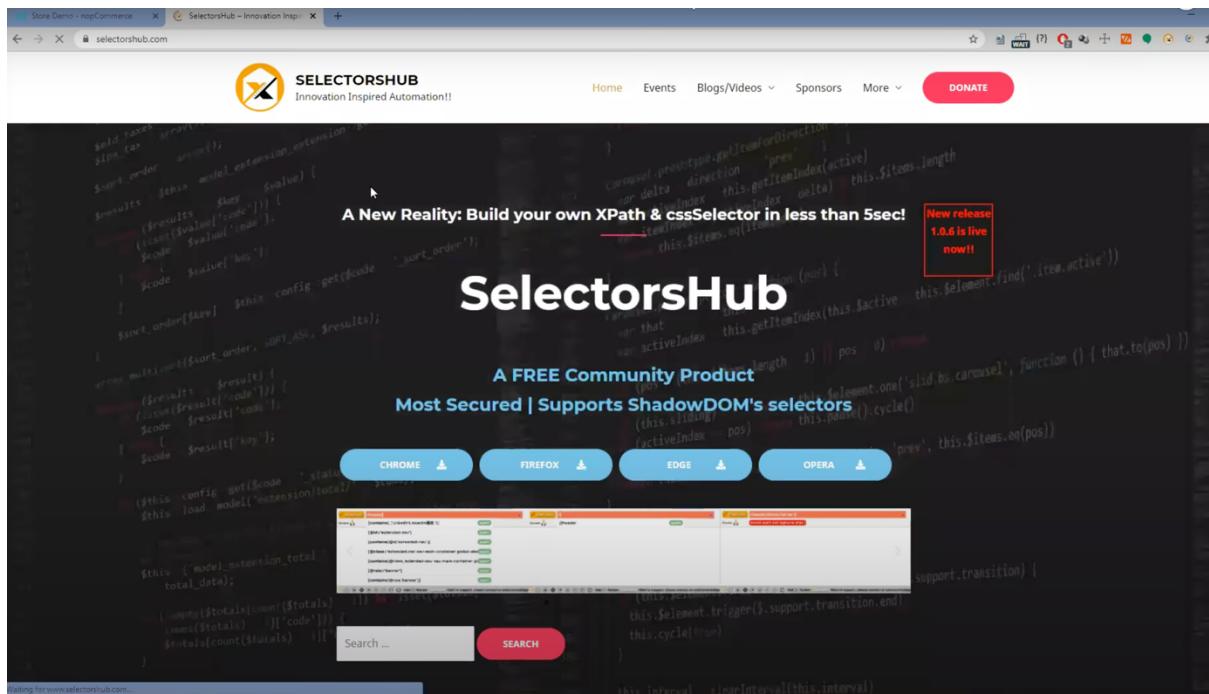
Styles Computed Event Listeners DOM Breakpoints Properties Accessibility ChroPath

Rel XPath //a[contains(text(),'Login')]

cssSelector body.page-template-default.page.page-id-313.mega-men

LinkText Login

PLinkText Login



Selector hub is another extenstion to find the locaters easily

Sadece xpath I degil , digger locator larida buluyor bu extention

How to capture Xpath?

- 1) Right click on element-->Inspect--> Highlight html-->Right click-->Copy Xpath
- 2) Chropath extension
- 3) SelectorsHub

Which XPath is prefered? Why?

Ans: Relative

/html/body/div[1]/div/div[3]/div[1]/img

//*[@id="divLogo"]/img

Technical answer : Html den baslayarak tag lar uzerinden highlighted kisma ilerlediginizi dusunun full x path de fakat developer bu yolda herhangi bir degisiklik yaparsa , locator ilerde calismaz ama relative xpath de bunun olmaz , cunku direk olarak ilgili tag a gidiyoruz—

2- kisa olusu

- interview

Path can be broken if developer makes a change

- 2) Absolute xpath start WITH /
Relative xpath STARTS WITH //
- 3) in Absolute xpath we use only tags/nodes
In Relative xpath we use attributes.

Syntax of Relative Xpath

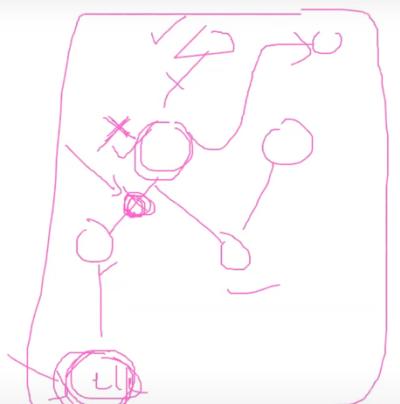
Syntax: //tagname[@attribute='value']
Example: //input[@name="txtUsername"]
//*[@name="txtUsername"]

How to capture Xpath?

- 1) Right click on element-->Inspect--> Highlight html-->Right click-->Copy Xpath
2) Chropath extension
3) SelectorsHub

Which XPath is preferred? Why?
Ans: Relative

/html/body/div[1]/div//*[@id="divLogo"]/img



copy Xpath



XPath options

or
and
contains()
starts-with()
text()
chained xpath

The screenshot shows a web browser window with a search bar and developer tools open.

Search Bar: The search bar contains the placeholder "Search" and has an "autocomplete=off" attribute.

Developer Tools - Elements Tab:

```
<form id="searchbox" method="get" action="http://automationpractice.com/index.php?controller=search">
    <input type="hidden" name="controller" value="search">
    <input type="hidden" name="orderby" value="position">
    <input type="hidden" name="orderway" value="desc">
    <input class="search_query form-control ac_input" type="text" id="search_query_top" name="search_query" placeholder="Search" value="Search" autocomplete="off">
    <button type="submit" name="submit_search" class="btn btn-default button-search">Search</button>
</form>
```

Developer Tools - Styles Tab:

```
#search_block_top {
    display: inline;
    padding: 0 13px;
    height: 45px;
    line-height: 45px;
    background: #f9f9f9;
    margin-right: 1px;
}
```

Developer Tools - ChroPath Tab:

Selectors dropdown: type selector and press enter

Filter: 6.0

Selected filters: id, class, name, placeholder, text

Attribute name: attribute name

Results:

- 1 Rel XPath: //input[@id='search_query_top']
- 1 id: search_query_top
- 1 name: search_query
- 1 className: search_query form-control ac_input

Preview code:

```
<input class="search_query form-control ac_input" type="text" id="search_query_top" name="search_query" placeholder="Search" value="" autocomplete="off" xpath="1">
```

```

public static void main(String[] args) {
    System.setProperty("webdriver.chrome.driver","C://Drivers//chromedriver_win32//chromedriver.exe");
    WebDriver driver=new ChromeDriver();
    driver.get("http://automationpractice.com/index.php");
    driver.manage().window().maximize();

    //Absolute xpath
    //driver.findElement(By.xpath("//html[1]/body[1]/div[1]/header[1]/div[3]/div[1]/div[2]/form[1]/
    //driver.findElement(By.xpath("//html[1]/body[1]/div[1]/div[1]/header[1]/div[3]/div[1]/div[1]/div[2]/form[1]/
    //Relative xpath
    driver.findElement(By.xpath("//input[@id='search_query_top']"));
}

```

 Single quotation koydu cunku java da “ ” ik tane quotation ic ice olamaz.

//Relative xpath
`driver.findElement(By.xpath("//input[@id="search_query_top"]"))`
 error verir

//Relative xpath
`driver.findElement(By.xpath("//input[@id='search_query_top']"))`

Böyük soñur kalkaw

.

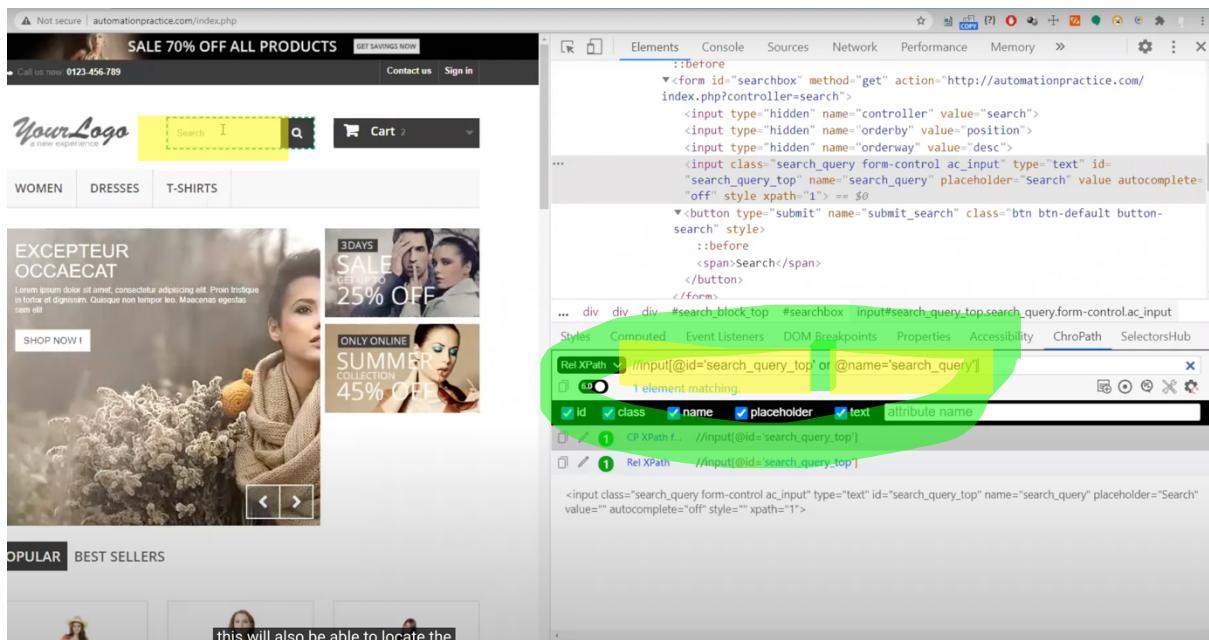
//Relative xpath
`driver.findElement(By.xpath("//input[@id=\"search_query_top\"]"))`

Best way
with single
quote

XPath options

- or
- and
- contains()
- starts-with()
- text()
- chained xpath

Or



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Contact us Sign in

Call us now: 0123-456-789

Your Logo a new experience

Search

Cart 2

WOMEN DRESSES T-SHIRTS

EXCEPTEUR OCCAECAT

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pron tristique in tortor et dignissim. Quisque non tempor leo. Maecenas egestas sem sit.

SHOP NOW!

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ONLY ONLINE SUMMER COLLECTION 45% OFF

OPULAR BEST SELLERS

this will also be able to locate the

Elements Console Sources Network Performance Memory

:before

<form id="searchbox" method="get" action="http://automationpractice.com/index.php?controller=search">

<input type="hidden" name="controller" value="search">

<input type="hidden" name="orderby" value="position">

<input type="hidden" name="orderway" value="desc">

<input class="search_query form-control ac_input" type="text" id="search_query_top" name="search_query" placeholder="Search" value="Search" autocomplete="off" style="xpath=1" = \$0>

<button type="submit" name="submit_search" class="btn btn-default button-search">

:before

Search

</button>

</form>

div div div #search_block_top #searchbox input#search_query_top.search_query.form-control.ac_input

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Rel XPath //input[@id='search_query_top' or @name='search_query'] 1 element matching.

id class name placeholder text attribute name

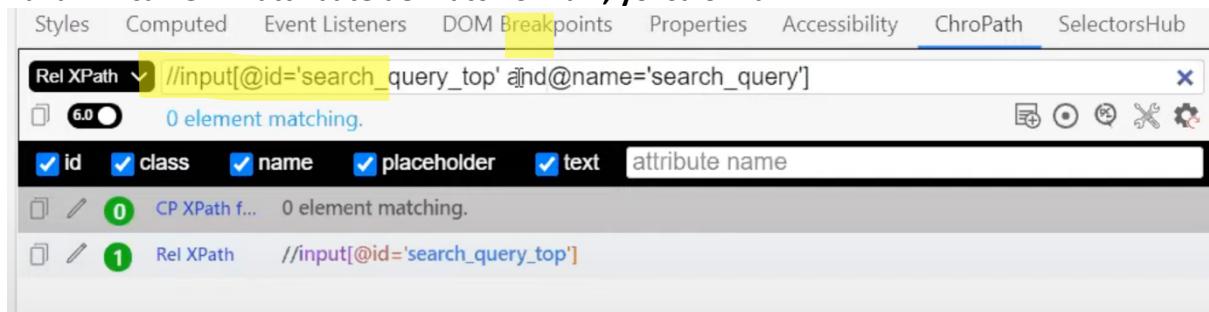
CP XPath f... //input[@id='search_query_top']

Rel XPath //input[@id='search_query_top']

<input class="search_query form-control ac_input" type="text" id="search_query_top" name="search_query" placeholder="Search" value="" autocomplete="off" style="" xpath="1">

Or ->One of them matches , it works as a locator

Diyelimki bir attribute de degisiklik yaptik ama digeri hala calisyor@'searchquery1' And kullanilinca her iki attribute de match olmali , yoksa olmaz



Styles Computed Event Listeners DOM Breakpoints Properties Accessibility ChroPath SelectorsHub

Rel XPath //input[@id='search_query_top' and '@name='search_query'] 0 element matching.

id class name placeholder text attribute name

CP XPath f... 0 element matching.

Rel XPath //input[@id='search_query_top'] 1 element matching.

```
and  
contains()  
starts-with()  
text()  
chained xpath
```

```
//input[@id='search_query_top' or @name='search_query1']
```

A	B	Result
False	False	No Element
True	False	Returns A
False	True	Returns B
True	True	Returns Both

```
//input[@id='search_query_top' and @name='search_query1']
```

A	B	Result
False	False	No Element
True	False	No Element
False	True	No Element
True	True	Returns Both

```
contains()
```

```
-----  
id="firstname"
```

```
//tagname[contains(@attribute, 'value')]
```

```
//input[@id='firstname']
```

```
//input[contains(@, Attribute and ist value)]
```

```

Session-16.txt - Notepad
File Edit Format View Help
True True Returns Both
//input[@id='search_query_top' and @name='search_query1']
    A     B      Result
    False  False  No Element
    True   False  No Element
    False  True   No Element
    True   True   Returns Both

contains()
-----
id="firstname"
//tagname[contains(@attribute,'value')]

//input[@id='firstname'] --> Basic xpath
//input[contains(@id,'first')] --> using contains()

//input[@id='start']
//input[@id='stop']

//input[contains(@id,'st')] --> it matches for both start and stop button

```

Start and stop buttonleri pesi ardina surekli tiklandigini dusun , ikisinede uyan bir locator isi kolaylastirir. Yani dynamic bir yapı olusturma onemli

```

//input[@id='start']
//input[@id='stop']

//input[contains(@id,'st')] --> Dynamic xpath

```

attribute

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Sale 70% off all products | GET SAVINGS NOW

Call us now: 0123-456-789 | Contact us | Sign in

Your Logo | a new experience

Search Cart 2

WOMEN DRESSES T-SHIRTS

EXCEPTEUR OCCAECAT
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin fringilla
in tortor et dignissim. Quisque non tempor leo. Maecenas eget
sem ell.

SHOP NOW!

3 DAYS SALE GETTING 25% OFF

ONLY ONLINE SUMMER COLLECTION 45% OFF

POPULAR BEST SELLERS

//Absolute xpath
`//driver.findElement(By.xpath("//html[1]/body[1]/div[1]/header[1]/div[3]/div[1]/div[2]/form[1]/input[4]"))
//driver.findElement(By.xpath("//html[1]/body[1]/div[1]/header[1]/div[3]/div[1]/div[1]/div[2]/form[1]/button[1]"))`

//Relative xpath
`//driver.findElement(By.xpath("//input[@id='search_query_top']")).sendKeys("T-shirts");
//driver.findElement(By.xpath("//button[@name='submit_search']")).click();`

//xpath with 'or'
`//driver.findElement(By.xpath("//input[@id='search_query_top' or @name='search_queryX']")).sendKeys("T-shirts");
//driver.findElement(By.xpath("//button[@name='submit_searchX' or @class='btn btn-default button-search']")).click()`

//xpath with 'and'
`//driver.findElement(By.xpath("//input[@id='search_query_top' and @name='search_query']")).sendKeys("T-shirts");
//driver.findElement(By.xpath("//button[@name='submit_search' and @class='btn btn-default button-search']")).click()`

//xpath with contains()
`driver.findElement(By.xpath("//input[contains(@id, 'query_top')]")).sendKeys("T-shirts");`

index.php?controller=search
<input type="hidden" name="controller" value="search">
<input type="hidden" name="orderby" value="position">
<input type="hidden" name="orderway" value="desc">
<input class="search_query form-control ac_input" type="text" id="search_query_top" name="search_query" placeholder="Search" value autocomplete="off" style="xpath='1'> == \$0
<button type="submit" name="submit_search" class="btn btn-default button-search" style="<:before
Search</button></form><:after>">

... div div div #search_block_top #searchbox input#search_query_top.search_query.form-control.ac_input

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Rel XPath //input[contains(@id,'search_query')]

id class name placeholder text attribute name

CP XPath f... //input[@id='search_query_top']
Rei XPath //input[@id='search_query_top']

<input class="search_query form-control ac_input" type="text" id="search_query_top" name="search_query" placeholder="Search" value="" autocomplete="off" style="xpath='1'>

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```
//xpath with contains()
driver.findElement(By.xpath("//input[contains(@id,'query_top')]")).sendKeys("T-shirts"); // id=search_query_top
driver.findElement(By.xpath("//button[contains(@name,'search')]")).click(); // name=submit_search
```

The screenshot shows a web page with a search bar and a dropdown menu. The search bar has the placeholder 'Search' and a magnifying glass icon. Below the search bar is a dropdown menu with items like 'Cart', 'Contact us', and 'Sign in'. The page header includes a logo, a phone number '0123-456-789', and navigation links. On the left side, there's a sidebar with a banner for 'EXCEPTEUR OCCAECAT' and another for 'SALE 25% OFF'. The main content area features a large image of a person in a red dress, a 'SHOP NOW!' button, and a 'ONLY ONLINE SUMMER COLLECTION 45% OFF' offer.

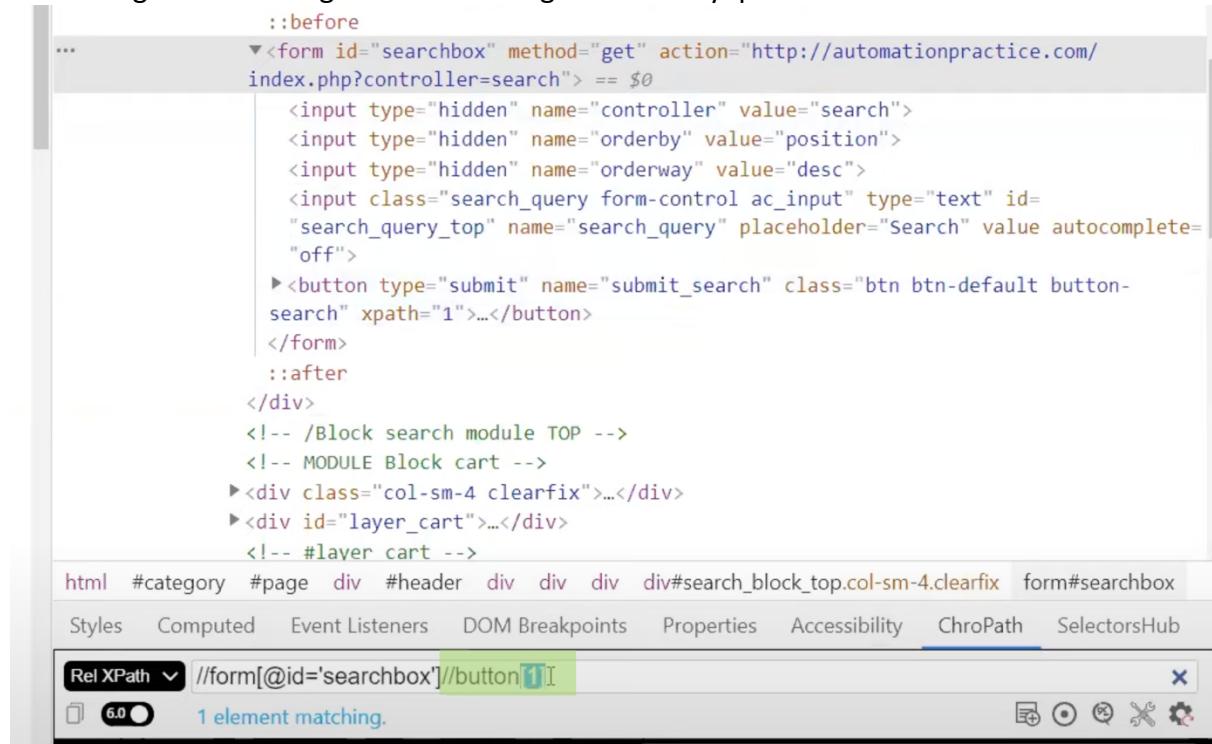
Chained xpath. Form tag inda 4 tane tag var onlarla bir chain yapti

The screenshot shows a web page with a search bar and a dropdown menu. The search bar has the placeholder 'Search' and a magnifying glass icon. Below the search bar is a dropdown menu with items like 'Cart', 'Contact us', and 'Sign in'. The page header includes a logo, a phone number '0123-456-789', and navigation links. The main content area features a large image of a woman in a top, a 'Women' category section, and a sidebar with filters for categories, size, and color.

Yada boyle yapti

The screenshot shows a web page with a search bar and a dropdown menu. The search bar has the placeholder 'Search' and a magnifying glass icon. Below the search bar is a dropdown menu with items like 'Cart', 'Contact us', and 'Sign in'. The page header includes a logo, a phone number '0123-456-789', and navigation links. The main content area features a large image of a woman in a top, a 'Women' category section, and a sidebar with filters for categories, size, and color.

Button tag I da. Form taginin icinde oldugu icin chain yapabiliriz

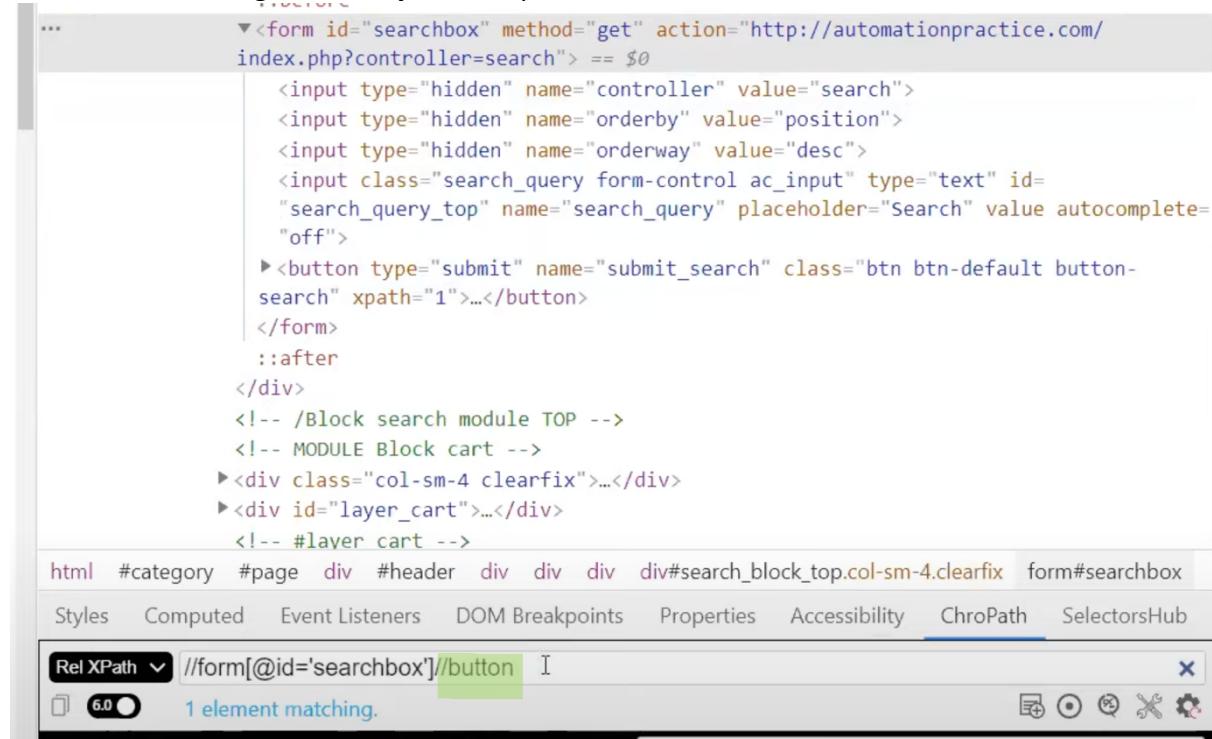


```
...<form id="searchbox" method="get" action="http://automationpractice.com/index.php?controller=search">> == $0
    <input type="hidden" name="controller" value="search">
    <input type="hidden" name="orderby" value="position">
    <input type="hidden" name="orderway" value="desc">
    <input class="search_query form-control ac_input" type="text" id="search_query_top" name="search_query" placeholder="Search" value autocomplete="off">
    ▶<button type="submit" name="submit_search" class="btn btn-default button-search" xpath="1">...</button>
</form>
::after
</div>
<!-- /Block search module TOP -->
<!-- MODULE Block cart -->
▶<div class="col-sm-4 clearfix">...</div>
▶<div id="layer_cart">...</div>
<!-- #layer cart -->
html #category #page div #header div div div#search_block_top.col-sm-4.clearfix form#searchbox
```

Styles Computed Event Listeners DOM Breakpoints Properties Accessibility ChroPath SelectorsHub

Rel XPath 1 1 element matching.

1 tane button oldugu icin [1] yazmak optional



```
...<form id="searchbox" method="get" action="http://automationpractice.com/index.php?controller=search">> == $0
    <input type="hidden" name="controller" value="search">
    <input type="hidden" name="orderby" value="position">
    <input type="hidden" name="orderway" value="desc">
    <input class="search_query form-control ac_input" type="text" id="search_query_top" name="search_query" placeholder="Search" value autocomplete="off">
    ▶<button type="submit" name="submit_search" class="btn btn-default button-search" xpath="1">...</button>
</form>
::after
</div>
<!-- /Block search module TOP -->
<!-- MODULE Block cart -->
▶<div class="col-sm-4 clearfix">...</div>
▶<div id="layer_cart">...</div>
<!-- #layer cart -->
html #category #page div #header div div div#search_block_top.col-sm-4.clearfix form#searchbox
```

Styles Computed Event Listeners DOM Breakpoints Properties Accessibility ChroPath SelectorsHub

Rel XPath 1 1 element matching.

Boylede yapılabılır chain – attribute ve değerini kullan

The screenshot shows a web page for a women's fashion store. At the top, there is a header with a search bar, a cart icon, and navigation links for 'HOME', 'ABOUT US', 'CONTACT US', and 'SITEMAP'. Below the header, there are categories like 'WOMEN', 'T-SHIRTS', 'TOPS', and 'DRESSES'. A search bar is present with placeholder text 'Search...'. To the right of the search bar is a button with a magnifying glass icon. The main content area shows a banner for 'Women' with the text 'You will find here all woman fashion collections. This category includes all the basics of your wardrobe and much more: shoes, accessories, printed t-shirts, feminine dresses, women's jeans!'. Below the banner, there is a message 'There are 7 products.' and two subcategory links: 'TOPS' and 'DRESSES'. On the right side of the page, the DOM structure is displayed in a tree view, showing the HTML code for the search module. A ChroPath tool is open, highlighting the search button with the XPath expression //button[@name='submit_search']. The ChroPath interface includes tabs for Styles, Computed, Event Listeners, DOM Breakpoints, Properties, Accessibility, ChroPath, and SelectorsHub. It also shows filtering options for id, class, name, placeholder, and text.

The screenshot shows a Microsoft Notepad window titled 'Session-1.txt - Notepad' containing several examples of XPath locators. The examples are categorized into sections: 'id="firstname"', '//tagname[contains(@attribute,'value')]', '//input[@id='firstname'] --> Basic xpath', '//input[contains(@id,'first')]] --> using contains()', 'chained xpath', and 'chained xpath'. The 'chained xpath' section contains examples like '//form[@id='searchbox']//input[4]' and '//form[@id='searchbox']]//input[@id='search_query_top']'. Below these examples, there are two lines: '//form[@id='searchbox']]//button' and '//form[@id='searchbox']]//button[@name='submit_search']'. The Notepad window has a standard Windows interface with a menu bar (File, Edit, Format, View, Help), status bar (Ln 102, Col 55, 100%, Windows (CRLF), UTF-8, AM), and a toolbar at the bottom.