One of many approaches to build XPath for HTML element on a web page

This is very basic description of building XPath just for quick start.

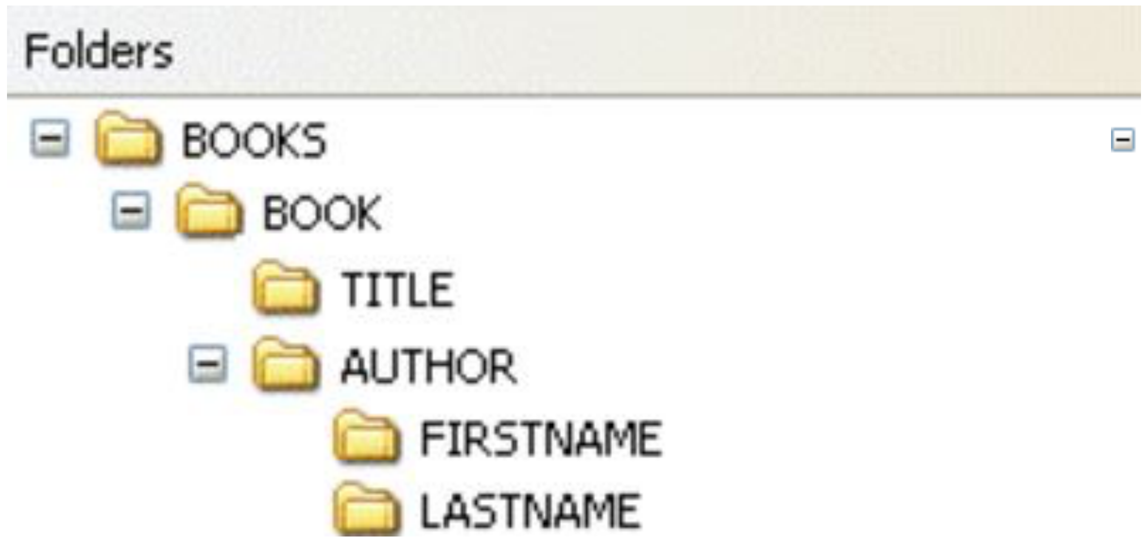
Please, find more information about locators and XPath expressions by following links:

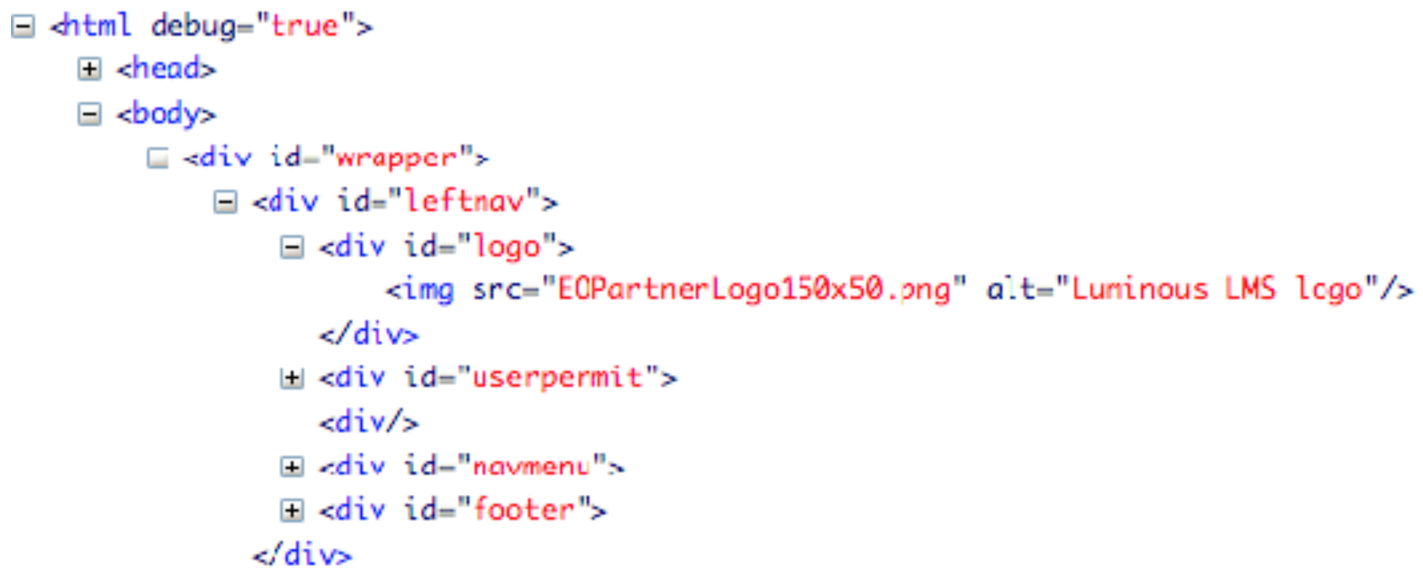
- https://www.guru99.com/xpath-selenium.html
- http://www.softwaretestingclass.com/complete-guide-on-xpath-in-selenium/
- http://www.softwaretestinghelp.com/using-selenium-xpath-and-other-locators-selenium-tutorial-5/
- http://toolsqa.com/selenium-webdriver/choosing-effective-xpath/

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

- These XPath expressions look very much like the path expressions you use with traditional computer file systems:





```
⊟ <html debug="true">
    ⊞ <head>
    ⊟ <body>
        ⊟ <div id="wrapper">
            ⊟ <div id="leftnav">
                ⊟ <div id="logo">
                        <img src="EOPartnerLogo150x50.png" alt="Luminous LMS logo"/>
                  </div>
                ⊞ <div id="userpermit">
                  <div/>
                ⊞ <div id="navmenu">
                ⊞ <div id="footer">
              </div>
```

Build XPath

- Basically, each HTML element looks like

<tag attribute=“value”, attribute1=“value1”></tag>

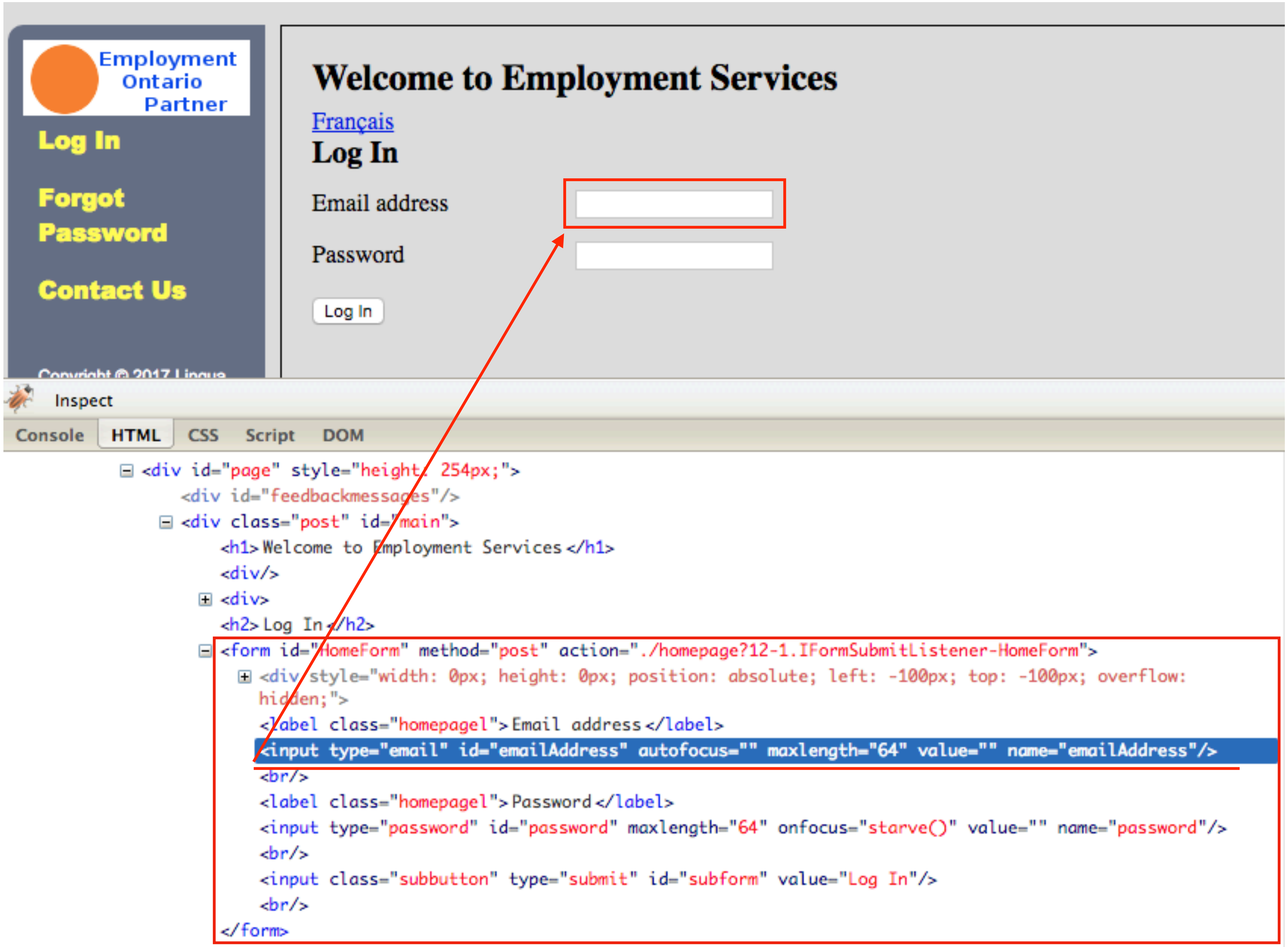
- For this element XPath will look like

//tag[contains(@attribute, ‘value’)]

where contains is a key word

For test scripts this XPath will be something like instructions: look for the element with tag ‘tag’ which contains ‘attribute’ that is equal to ‘value’

Example of element in HTML



```
<div id="page" style="height: 254px;">
    <div id="feedbackmessages"/>
    <div class="post" id="main">
        <h1>Welcome to Employment Services</h1>
        <div/>
        <div>
        <h2>Log In</h2>
        <form id="HomeForm" method="post" action="./homepage?12-1.IFormSubmitListener-HomeForm">
            <div style="width: 0px; height: 0px; position: absolute; left: -100px; top: -100px; overflow:
            hidden;">
            <label class="homepagel">Email address</label>
            <input type="email" id="emailAddress" autofocus="" maxlength="64" value="" name="emailAddress"/>
            <br/>
            <label class="homepagel">Password</label>
            <input type="password" id="password" maxlength="64" onfocus="starve()" value="" name="password"/>
            <br/>
            <input class="subbutton" type="submit" id="subform" value="Log In"/>
            <br/>
        </form>
```

Example of element in HTML

- On the previous slide the web element ‘Email address’ text field looks like

```
<input
type="email" id="emailAddress" autofocus="" maxle
ngth="64" value="" name="emailAddress"/>
```

where **input** is called tag,

type, **id**, **autofocus**, **maxlength**, **value** and **name** are called attributes,

and “**email**”, “**emailAddress**”, “**64**” are called values

XPath for ‘Email address’ text field

Using template from slide 3 for ‘Email address’ text field XPath can be

```
//input[contains(@type, 'email')]
```

or

```
//input[contains(@name, ‘emailAddress’)]
```

or

```
//input[contains(@maxlength, '64')]
```

Check XPath in console

Before using XPath in your code check if it is valid

- Open console in your browser (in Chrome it is in View=>Developer=>Developer Tools)

- Copy XPath to the console in the following format:

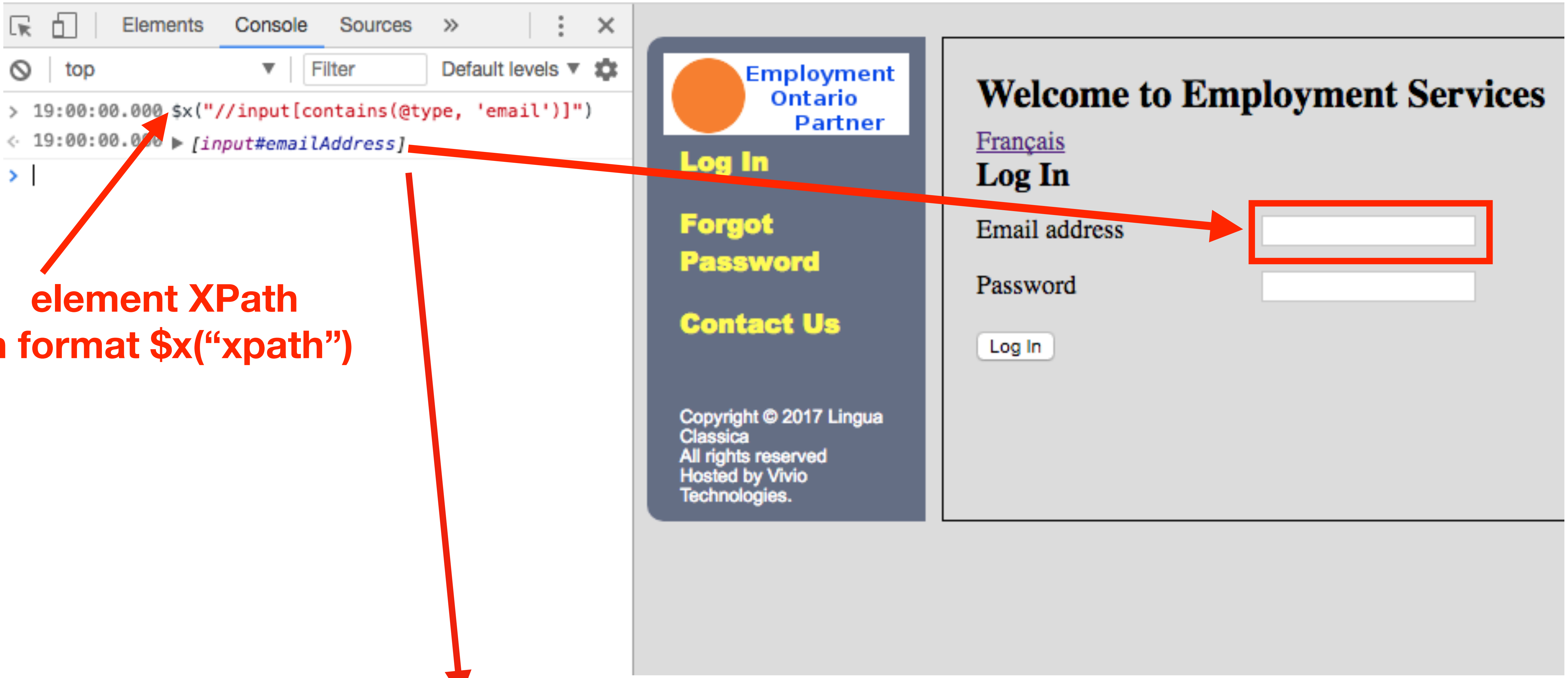
$x(“your XPath”)

Example: $x("//input[contains(@type, 'email')]")

and hit ‘Enter’

- If XPath is valid, console returns an element

Check XPath in console



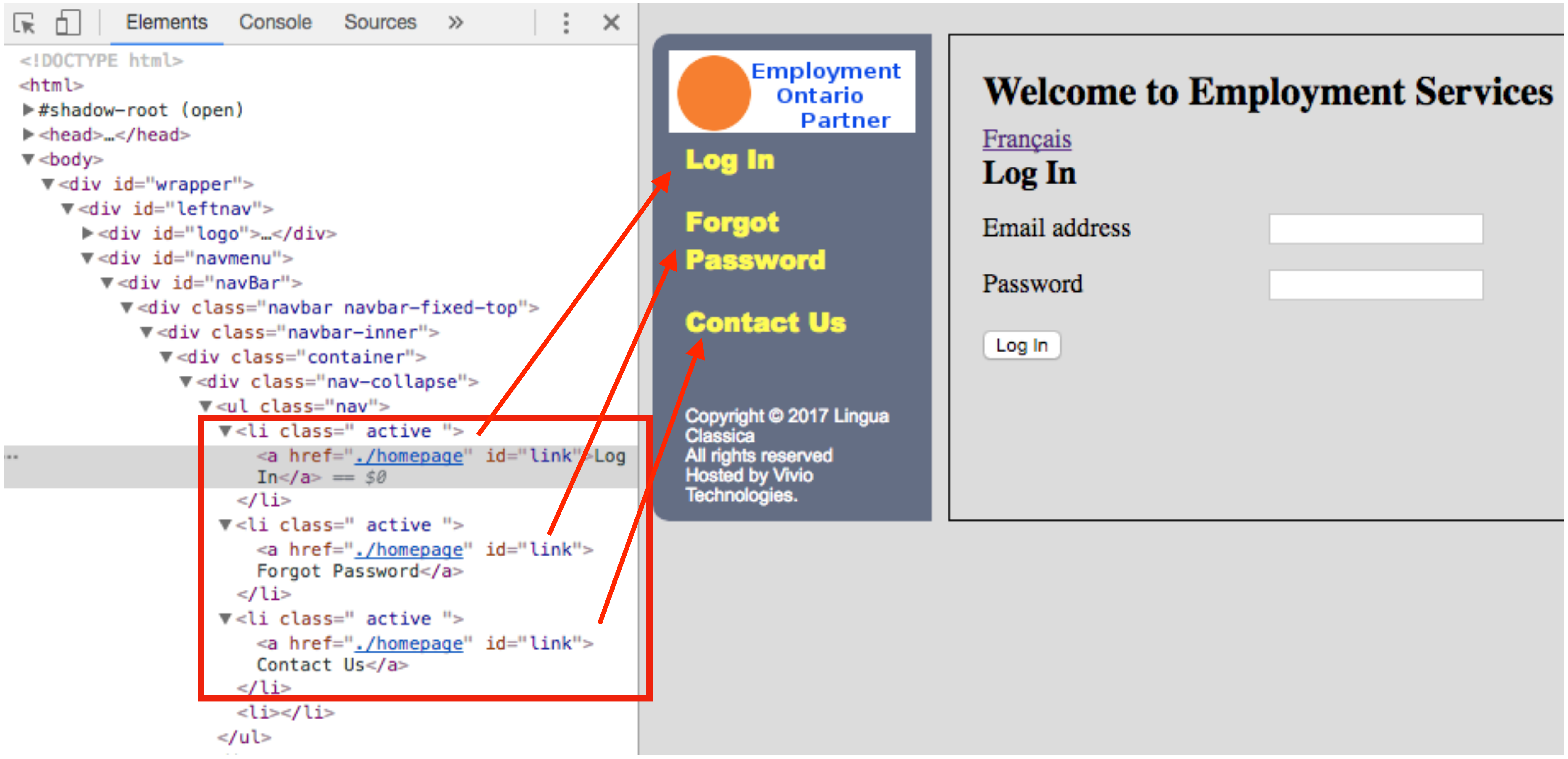
```
> 19:00:00.000 $x("//input[contains(@type, 'email')]")
<· 19:00:00.000 ▶ [input#emailAddress]
```

element XPath in format $x(“xpath”)

console returns ‘Email address’ test field

List of elements with the same XPath

Sometimes a few elements may have the same XPath. For example, on Home Page there are three elements with XPath **//a[contains(@id, ‘link')]** because there are three html elements that have ‘a’ tag with attribute ‘id’ and value ‘link’



```
<!DOCTYPE html>
<html>
▶#shadow-root (open)
▶<head>…</head>
▼<body>
  ▼<div id="wrapper">
    ▼<div id="leftnav">
      ▶<div id="logo">…</div>
      ▼<div id="navmenu">
        ▼<div id="navBar">
          ▼<div class="navbar navbar-fixed-top">
            ▼<div class="navbar-inner">
              ▼<div class="container">
                ▼<div class="nav-collapse">
                  ▼<ul class="nav">
                    ▼<li class=" active ">
                        <a href="./homepage" id="link">Log
                        In</a> == $0
                      </li>
                    ▼<li class=" active ">
                        <a href="./homepage" id="link">
                        Forgot Password</a>
                      </li>
                    ▼<li class=" active ">
                        <a href="./homepage" id="link">
                        Contact Us</a>
                      </li>
                      <li></li>
                    </ul>
```

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Welcome to Employment Services

Français

Log In

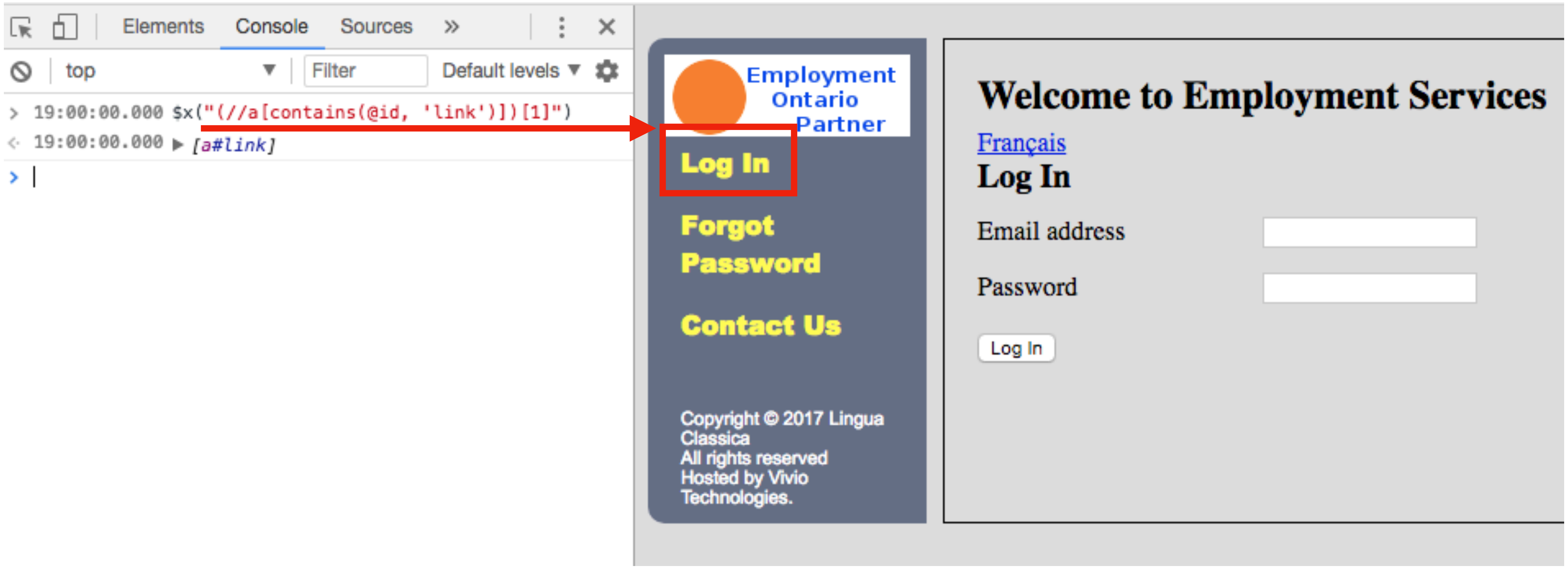
Email address

Password

List of elements with the same XPath

- To select the exact element from the list you may use index of this element
- For previous example ‘Log In’ link has index 1, ‘Forgot Password’ link - index 2, and ‘Contact Us’ link - index 3
- To select ‘Log In’ link put XPath in between parentheses and add index 1 at the end:

(//a[contains(@id, ‘link’)])[1]



```
> 19:00:00.000 $x("(//a[contains(@id, 'link')])[1]")
<· 19:00:00.000 ▶ [a#link]
> |
```