

XPath

in Selenium WebDriver

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.

Types of X-path

- There are two types of XPath:

1) Absolute XPath

2) Relative XPath

Absolute XPath

- It is the direct way to find the element, but the disadvantage of the absolute XPath is that if there are any changes made in the path of the element then that XPath gets failed.
- It begins with the single forward slash(/) ,which means you can select the element from the root node.
- Below is the example of an absolute xpath expression of the element shown in the below screen.
- Ex:
- `/html[1]/body[1]/div[1]/table[1]/tbody[1]/tr[1]/td[2]/table[1]/tbody[1]/tr[4]/td[1]/table[1]/tbody[1]/tr[1]/td[2]/table[1]/tbody[1]/tr[2]/td[3]/form[1]/table[1]/tbody[1]/tr[4]/td[1]/table[1]/tbody[1]/tr[2]/td[2]/input[1]`

Relative xpath

- For Relative Xpath the path starts from the middle of the HTML DOM structure.
- It starts with the double forward slash (//), which means it can search the element anywhere at the webpage.
- You can start from the middle of the HTML DOM structure and no need to write long xpath.

Ex:

```
//input[@name='userName']
```


Syntax for Relative XPath

- XPath contains the path of the element situated at the web page. Standard syntax for creating XPath is.

Xpath=//tagname[@attribute='value']

- **//** : Select current node.
- **Tagname**: Tagname of the particular node.
- **@**: Select attribute.
- **Attribute**: Attribute name of the node.
- **Value**: Value of the attribute.

Absolute & Relative XPath

elcome.php?osCsid=459b53e8a965de9b80e488932268ea9f

Summer ARUBA

STER SUPPORT CONTACT

Jan 6, 2019

Find A Flight

Registered users can sign-in here to find the lowest fare on participating airlines.

User Name:

Password:

Sign-In

Elements Console Sources Network Performance Memory Application Security Audits

Styles Computed Event Listeners DOM Breakpoints Properties

selectors type selector and press enter

1 matching node found. Find the matching node below:

rel XPath //input[@name='userName']

abs XPath /html[1]/body[1]/div[1]/table[1]/tbody[1]/tr[1]/td[2]/table[1]/tbody[1]/tr[4]/td[1]/table[1]/tbody[1]/tr[1]/td[2]/table[1]/tbody[1]/tr[2]/td[3]/form[1]/table[1]/tbody[1]/tr[4]/td[1]/table[1]/tbody[1]/tr[2]/td[2]

CSS sel... table:nth-child(1) tbody:nth-child(1) tr:nth-child(2) td:nth-child(2) > input:nth-child(1)

<input type="text" name="userName" size="10" style="" xpath="1">

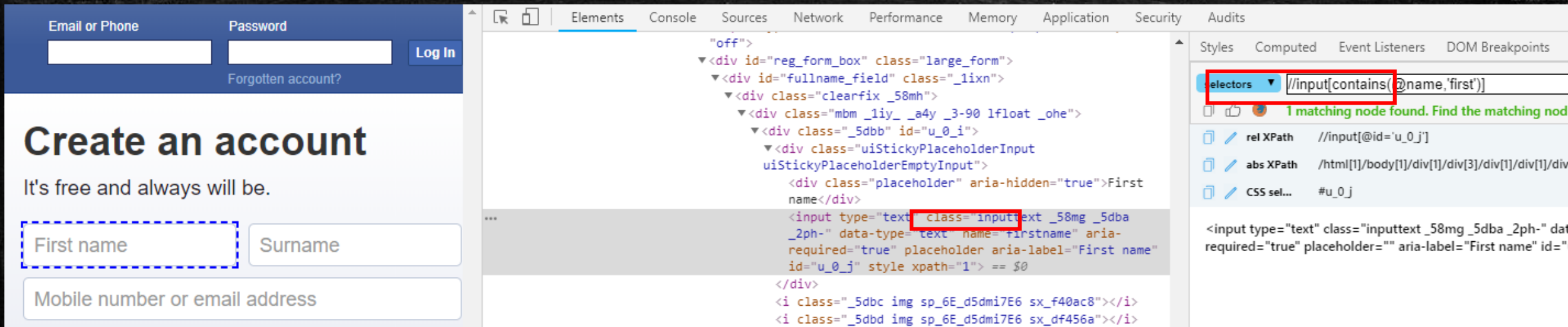
Relative XPath

Absolute XPath

Contains()

`//input[contains(@name,'first')]`

- Contains() is a method used in XPath expression. It is used when the value of any attribute changes dynamically, for example, login information.
- The contain feature has an ability to find the element with partial text



The screenshot displays a web browser interface with a 'Create an account' form. The form includes fields for 'Email or Phone', 'Password', 'First name', 'Surname', and 'Mobile number or email address'. The 'First name' field is highlighted with a dashed blue border. To the right, the browser's developer tools are open, showing the DOM tree. The 'First name' input field is selected, and its XPath is shown as `//input[contains(@name,'first')]` in the 'Selectors' panel. The 'Styles' panel shows the CSS for the selected element, including `class="inputtext _58mg _5dba _2ph-" data-type="text" name="firstname" aria-required="true" placeholder="" aria-label="First name" id="u_0_j"`.

Contains() with text()

`//div[contains(text(),'Facebook helps')]`



The screenshot displays the Facebook homepage on the left, with the text "Facebook helps you connect and share with the people in your life." highlighted by a dashed blue box. On the right, the browser's developer tools are open, showing the DOM tree and the 'selectors' panel. The 'selectors' panel contains the XPath query `//div[contains(text(),'Facebook helps')]`, which is highlighted with a red box. Below the query, it indicates "1 matching node found. Find the matching node". The DOM tree shows the structure of the page, with the selected node highlighted in the 'Elements' panel. The selected node is a `<div class="_5iyx" style xpath="1">Facebook helps you connect and share with the people in your life.</div>` element, which is also highlighted with a red box.

Using OR

//button[@type='submit' or name='web']

Create an account

It's free and always will be.

6

Jan

1994

Why do you like this date of birth?

☐ Female ☐ Male

By clicking Sign Up, you agree to our [Terms](#), [Data Policy](#) and [Cookie Policy](#). You may receive SMS notifications from us and may opt out at any time.

Sign Up

Elements

▼<div id="fullname_field" class="_1ixn"><div class="clearfix _58mh"><div class="mbm _1iy_ _a4y _3-90 lfloat _ohe"><div class="_5dbb" id="u_0_i"><div class="uiStickyPlaceholderInput uiStickyPlaceholderEmptyInput"><div class="placeholder" aria-hidden="true">First name</div><input type="text" class="inputtext _58mg _5dba _2ph-" data-type="text" name="firstname" aria-required="true" placeholder="First name" id="u_0_j" style=></div><i class="_5dbc img sp_6E_d5dmi7E6 sx_f40ac8"></i><i class="_5dbd img sp_6E_d5dmi7E6 sx_df456a"></i><div class="_1pc_"></div></div><div class="mbm _1iy_ _a4y rfloat _ohf">...</div>::after</div><div class="_1pc_" id="fullname_error_msg"></div></div><div class="mbm _a4y" id="u_0_m">...</div><div class="hidden_elem" id="u_0_p" style="opacity: 1e-05;">...</div><div class="mbm _br- _a4y hidden_elem" id="u_0_s">...</div><div class="mbm _br- _a4y" id="password_field">...</div><div class="_58mq _5dbb" id="u_0_w">...</div><div class="mtm _5wa2 _5dbb" id="u_0_y">...</div><div class="_58mu" data-nocookies="1" id="u_0_10">...</div><div class="clearfix">...<button type="submit" class="_6j mvm _6wk _6wl _58mi _3ma _6o _6v" name="websubmit" id="u_0_11" xpath="1" style>Sign Up</button> == \$0...::after</div></div></div>

Styles

Computed

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Properties

Access

selectors

//button[@type='submit' or name='web']

2 matching nodes found. Find the list of matching nodes below :

rel XPath //button[@id='u_0_11']

abs XPath /html[1]/body[1]/div[1]/div[3]/div[1]/div[1]/div[1]/div[1]/div[2]

CSS sel... #u_0_11

<button type="submit" class="_6j mvm _6wk _6wl _58mi _3ma _6o _6v" name="websubmit" id="u_0_11" xpath="1"></button>

<button type="submit" class="_6j mvm _6wk _6wl _58me _58mi _3ma _6o _6v" id="u_0_12" xpath="2"></button>

WWW.PAYANONLINETRAININGS.COM

Using AND

```
//button[@type='submit' and @name='websubmit']
```

Create an account

It's free and always will be.

First name

Surname

Mobile number or email address

New password

6

Jan

1994

Why do I need to provide my date of birth?

Female

Male

By clicking Sign Up, you agree to our [Terms](#), [Data Policy](#) and [Cookie Policy](#). You may receive SMS notifications from us and can opt out at any time.

Sign Up

Elements

Console

Network

Performance

Memory

Application

Security

Audits

<div id="fullname_field" class="_linx">

<div class="clearfix _58mh">

<div class="mbm _1iy_ _a4y_ _3-90 lfloat _ohe">

<div class="_5dbb" id="u_0_i">

<div class="uiStickyPlaceholderInput uiStickyPlaceholderEmptyInput">

<div class="placeholder" aria-hidden="true">First name</div>

<input type="text" class="inputtext _58mg _5dba _2ph-" data-type="text" name="firstname" aria-required="true" placeholder aria-label="First name" id="u_0_j" style=>

</div>

<i class="_5dbc img sp_6E_d5dmi7E6 sx_f40ac8"></i>

<i class="_5dbd img sp_6E_d5dmi7E6 sx_df456a"></i>

<div class="_1pc_"></div>

</div>

</div>

<div class="mbm _1iy_ _a4y_ rfloat _ohf">...</div>

::after

</div>

<div class="_1pc_" id="fullname_error_msg"></div>

</div>

<div class="mbm _a4y" id="u_0_m">...</div>

<div class="hidden_elem" id="u_0_p" style="opacity: 1e-05;">...</div>

<div class="mbm _br- _a4y hidden_elem" id="u_0_s">...</div>

<div class="mbm _br- _a4y" id="password_field">...</div>

<div class="_58mq _5dbb" id="u_0_w">...</div>

<div class="mtm _5wa2 _5dbb" id="u_0_y">...</div>

<div class="_58mu" data-nocookies="1" id="u_0_10">...</div>

<div class="clearfix">

<button type="submit" class="_6j mvm _6wk _6wl _58mi _3ma _6o _6v" name="websubmit" id="u_0_11" style xpath="1">Sign Up</button> == \$0

</div>

...

::after

</div>

</div>

Styles

Computed

Event Listeners

DOM Breakpoints

Properties

selectors

//button[@type='submit' and @name='websubmit']

1 matching node found. Find the matching node below :

rel XPath

//button[@id='u_0_11']

abs XPath

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

CSS sel...

#u_0_11

> <button type="submit" class="_6j mvm _6wk _6wl _58mi _3ma _6o _6v" id="u_0_11" style="" xpath="1"></button>

Start-with()

//span[starts-with(text(),'Message')]

Text Labels

Message_12
Message-123
Message \$ 1234
Message **** 12345
Message &&&123456
Message#### 1234567

```
<div class="widget-content">  
  <span style="font-family:Georgia, serif;" xpath=  
    "1">Message_12</span>  
  <div>  
    <span style="font-family: Georgia, serif;"  
      xpath="2">Message-123</span>  
  </div>  
  <div>  
    <span style="font-family: Georgia, serif;"  
      xpath="3">Message $ 1234</span>  
  </div>  
  <div>  
    <span style="font-family: Georgia, serif;"  
      xpath="4">Message **** 12345</span>  
  </div>  
  <div>  
    <span style="font-family: Georgia, serif;"  
      xpath="5">Message &&&123456</span>  
  </div>  
  <div>  
    <span style="font-family: Georgia, serif;"  
      xpath="6">Message#### 1234567</span>  
  </div>  
</div>
```

Styles Computed Event Listeners DOM Breakpoints Pr

selectors //span[starts-with(text(),'Message')]

6 matching nodes found. Find the list of matching

rel XPath //div[@class='column-left-inner']/aside

abs XPath /html[1]/body[1]/div[4]/div[2]/div[2]/div[2]

CSS sel... body.variant-wide:nth-child(2) div.content:nth-ch

- >
- >
- >
- >
- >
- >

text()

//span[text()='Message-123']

Text Labels

Message_12

Message-123

Message \$ 1234

Message ***** 12345

Message &&&123456

Message#### 1234567

```
</div>
▶ <div class="widget HTML" data-version="1" id="HTML9">...</div>
▶ <div class="widget HTML" data-version="1" id="HTML5">...</div>
▶ <div class="widget HTML" data-version="1" id="HTML6">...</div>
▼ <div class="widget Text" data-version="1" id="Text1">
  <h2 class="title">Text Labels</h2>
  ▼ <div class="widget-content">
    <span style="font-family: Georgia, serif;">Message_12</span>
    ▼ <div>
      <span style="font-family: Georgia, serif;" xpath="1">
        Message-123</span>
      </div>
    ▼ <div>
      <span style="font-family: Georgia, serif;">Message $ 1234
      </span>
```

selectors ▾ //span[text()='Message-123']

📄 👍 🔍 1 matching node found. Find the matching node

📄 ✎ rel XPath //div[@class='column-left-inner']//asie

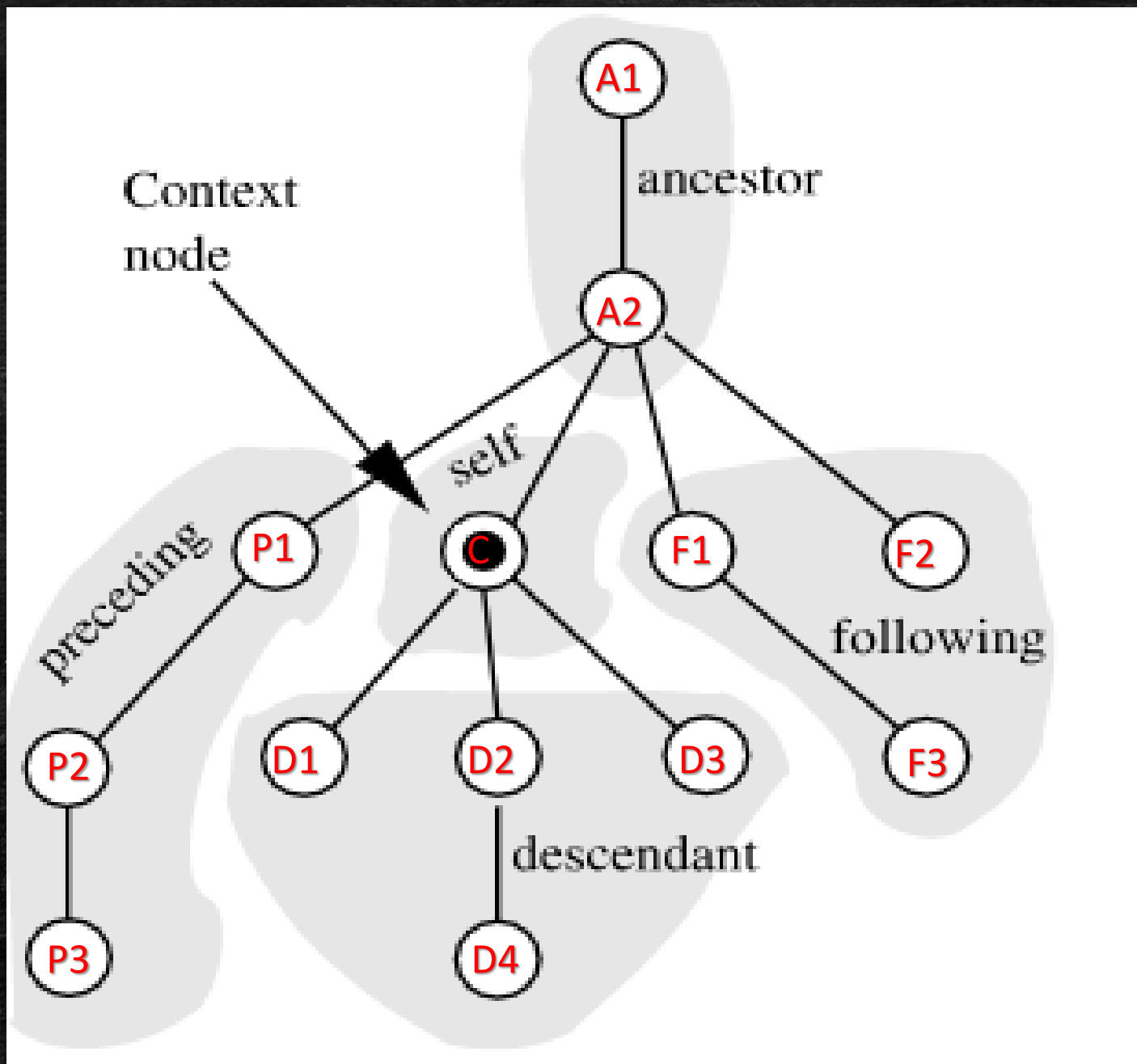
📄 ✎ abs XPath /html[1]/body[1]/div[4]/div[2]/div[2]/d

📄 ✎ CSS sel... body.variant-wide:nth-child(2) div.cont

▶

XPath axes methods

- XPath methods are used to find the complex or dynamic elements.
 - Ancestor
 - Child
 - Parent
 - Preceding
 - Following
 - Self
 - Descendant



Ancestor

- selects all ancestors element (grandparent, parent, etc.) of the current node

<code>//employee/ancestor::*</code>	Select all ancestor node of the employee node.
<code>//ancestor::name</code>	Select all ancestor of the name node in context node.

Child

- select child of the context node.

child::*	Select All child nodes of the context node.
child::employee	Select all child elements of employee node.

Parent

- select the parent node of the context node.

<code>//name/parent::*</code>	Select parent node of the 'name' context node.
<code>//email/parent::employee</code>	Return result node if employee node is parent node of the context node, otherwise no node found.

Preceding

- select all nodes before the context node, excluding attributes node or namespace

`//employee[@id=3]/preceding::employee`

Select all nodes (with child nodes) before the context node.

The screenshot displays the 'XPath Axes' tool interface. On the left, a list of three employees is shown, each enclosed in a dashed blue box:

- 101 David Senior Engineer david@myemail.com
- 102 John DBA Engineer john@email.com
- 103 Marry Application Developer marry@email.com

On the right, the XML snippet is visible:

```
<employee id="1" style="" xpath="1"></employee>
<employee id="2" style="" xpath="2"></employee>
```

An orange arrow points from the 'preceding::employee' part of the XPath expression in the top bar to the first two employees (David and John) in the list, indicating that the preceding axis selects nodes that appear before the context node in the document order.

Preceding...

```
//input[@id='u_0_v']//preceding::input[3]
```

The image shows a web form titled "Create an account" with a blue header. The header contains fields for "Email or Phone" and "Password", a "Log In" button, and a link for "Forgotten account?". Below the header, the form has fields for "First name", "Surname", "Mobile number or email address", and "New password". The "New password" field is highlighted with a red border and contains a red exclamation mark icon. To the right, the browser's developer tools are open, showing the "Elements" panel. The selected element is an input field with the XPath expression `//input[@id='u_0_v']//preceding::input[3]` highlighted in a red box. Below the XPath, it says "1 matching node found. Find the matching node". The DOM tree shows the input field's attributes: `<input type="text" class="inputtext_58mg_5dba_2ph-" data-number="or email address" id="u_0_o" style="" xpath="1">`. A red arrow points from the "New password" field in the form to the XPath expression in the developer tools.

Following

- select all nodes after the context node, excluding attributes node or namespaces node.

`//employee[@id=1]/following::employee`

Select all nodes (with child nodes) after the context node.

XPath Axes

101 ← David
Senior Engineer
david@myemail.com

102 John
DBA Engineer
john@email.com

103 Marry
Application Developer
marry@email.com

2 matching nodes found. Find the list of matching nodes...

rel XPath //email[contains(text(), 'john@email.com')]
abs XPath /html[1]/body[1]/div[4]/div[2]/div[2]/div[2]/div[2]/div[2]
CSS sel... body.variant-wide:nth-child(2) div.content:nth-child(4) div

<employee id="2" style="" xpath="1"></employee>
<employee id="3" style="" xpath="2"></employee>

Following..

`//input[@id='u_0_j']//following::input[2]`

The screenshot displays a web browser interface with a 'Create an account' form. The form includes fields for 'Email or Phone', 'Password', 'First name', 'Surname', 'Mobile number or email address', and 'New password'. The 'Mobile number or email address' field is highlighted with a red dashed box. The browser's developer tools are open, showing the 'rel XPath' tab with the XPath expression `//input[@id='u_0_j']//following::input[2]` highlighted in a red box. A red arrow points from this XPath expression to the highlighted field in the form. The developer tools also show a message: '1 matching node found. Find the matching node below :'. Below this message, the HTML structure of the field is displayed: `<input type="text" class="inputtext_58mg_5dba_2ph-" data-type="text" name="reg_email_" aria-label="number or email address" id="u_0_o" xpath="1">`.

Self

- Selects the current node 'name'

`//name/self::*`

Descendant

- Selects all descendants (children, grandchildren, etc.) of the current node

`//descendant::employee`

Select all descendant of the employee node in context node.