### XPath cheat sheet

#### Types of XPath

1. **Absolute XPath**
   
   `/html/body/div/div/section/section/div/div/input`

2. **Relative XPath**
   
   `//*[@@id=row1]/input`

#### XPath formula

- **//tag[@attribute='value']**

**Example:**

`//div[@class='round-button']`

#### SYNTAX

**EXPLANATION:**

- **Absolute XPath** - Starts at the top of the DOM, or a direct descendant (child)
- **Relative XPath** - Looks anywhere on the page. Starts at any element on the page with this tag, or an indirect descendant

**div**

**Example of an element tag**

**Predicates** - Used to find a specific node or a node with a specific value

- **Attribute**
- **Specific attribute value to search for**
- Uses the node that is in context
- Selects the parent of the current node

#### XPath Operators

- **Using ‘OR’**
  
  `/button[@name='Add' or @name='Remove']`

- **Using ‘AND’**
  
  `/button[@id='btn' and @class='btn' and @style='none'] or @name='Add']`

**XPath wildcards**

`//*[@@class]` - Element with any tag that has ‘class’ attribute

`/button[@@=’btn’]` - Any button element where any attribute has value ‘btn’

`/div[@]` - Div element that has any attribute

#### XPath axes

**Formula:**

- **axissname:nodetag[predicate]**

**XPath axes:**

- **ancestor:** ancestor
- **selects all ancestors of the current nodes**
- **descendant:** descendant
- **selects all children, grand-children etc.**
- **of the current node**
- **parent:** parent
- **Only the parent of the current node**
- **following-sibling:** Siblings after the current node
- **preceding-sibling:** Siblings before the current node

**Examples:**

`/button[@id='btn']/parent::div`

Find div parent of button element with id "btn"

`/button[@id='btn']/following-sibling::label`

Find label sibling that is located after button element with id "btn"

`/button[@id='btn']/preceding-sibling::label`

Find label sibling that is located before button element with id "btn"

`/button[@id='btn']/parent::div/following-sibling::div/div/div/div combination of few axes in the same expression`

#### Position functions

- **position()**

  - `position()=2` works same way as index `2`
  
  `- div[@id='row1']/input`

  The same as `div[@id='row2']/input`

  Operators we can use with position

  - `position()` - Equal
  - `position()-2` - Not equal
  - `position()=2` - Greater than
  - `position()=2` - Greater than or equal to
  - `position()-2` - Less than
  - `position()=2` - Less than or equal to

  `last()` - Get last element from the list

  We can use subtraction with the last function

  `//h5[last()-1]`

#### SVG elements

To get to SVG element, use wildcard in place of tag name, and use name function (or the SVG element tag)

`//@name='svg[@name='rect' and @transform]'

`//@name='rect' and contains(@transform, 'rotate 45 0 0')`

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To learn more about XPath or test automation with Selenium visit [https://practicetestautomation.com/](https://practicetestautomation.com/)