

# JavaScript: jQuery and the DOM Tree

CISC 282

November 6, 2018

## jQuery

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- JavaScript library with useful methods
  - Helpful with the DOM, events, animation and AJAX
- Created by John Resig
  - Announced at “Barcamp NYC” in 2006
- Very popular
  - Used just about everywhere
- Include it like any other JavaScript file
  - Can download or refer to a Content Delivery Networks (CDN)
  - For the latter, use a URL as the **src** in the **script** tag

```
<script src="https://code.jquery.com/jquery-3.3.1.js"
integrity="sha256-2Kok7MbOyxpqUVvAk/HJ2jigOSYS2auK4Pfz7uH60="
crossorigin="anonymous"></script>
```

# Using jQuery

- Centered around the jQuery class
  - Identified in several ways

jQuery	window.jQuery
\$	window.\$

- Based around *selectors*
  - Usually strings used to identify elements in the DOM
  - Several varieties
    - "**tag**" selects the elements with the given tag
    - "**#id**" selects the element with the given id
    - "**.class**" selects elements with the given class
    - ... and more

# Using jQuery

- Pass selectors to a jQuery constructor

```
$ (selector)
```

- Returns a jQuery object
- Contains all the elements that match the selector
- Call methods on the jQuery object to alter the elements
  - Full API listing on the jQuery website

```
$ (document) .ready (function) ;
```

- Alternative to `$ (window) .load (function) ;`
- Called once entire page is loaded (not just DOM)

# Some Useful Methods

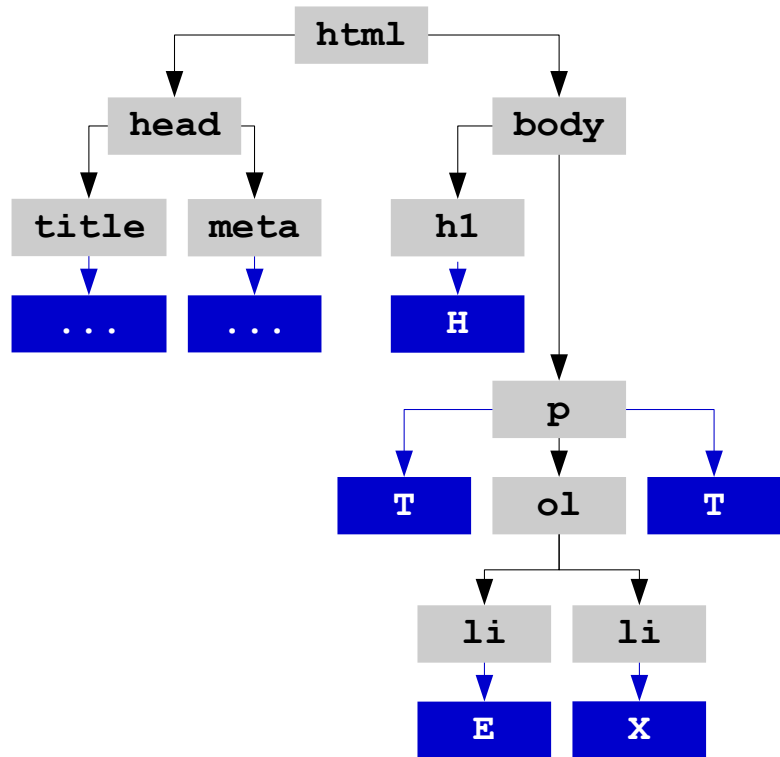
Method	Description
<code>addClass(className)</code> , <code>removeClass(className)</code>	Adds/removes the CSS class(es) from the elements
<code>prepend(content)</code> , <code>append(content)</code>	Adds content to the beginning/end of an element
<code>text()</code> , <code>text(newText)</code>	Returns/sets the text within the element
<code>height()</code> , <code>width()</code>	Returns the height/width of the element
<code>css(propertyName)</code> , <code>css(propertyName, value)</code>	Gets/sets the CSS value for the given property

## The DOM Tree

- A tree representation of the HTML document
  - All nodes are **HTMLElement**
  - Root is the **html** tag
  - Child nodes represent one of three items
    - An HTML element
    - An attribute and associated value of an element
    - Some text within an element
  - All internal nodes represent HTML elements
    - Attributes and text form the leaf nodes
- Parent nodes mirror containing elements
  - Child nodes mirror sub-elements

# The DOM Tree

```
<html>
  <head>
    <title>...</title>
    <meta>...</meta>
  </head>
  <body>
    <h1>H</h1>
    <p>T
      <ol>
        <li>E</li>
        <li>X</li>
      </ol>
    </p>
  </body>
</html>
```



## Tree Traversal With JavaScript

Property	Type	Description
<code>parentNode</code>	Element	The parent node of this node
<code>childNodes []</code>	Array	An array of the node's children
<code>nextSibling,</code> <code>previousSibling</code>	Element	The next and previous nodes with the same parent node
<code>firstChild,</code> <code>lastChild</code>	Element	The first and last child nodes of this node

# Tree Manipulation With jQuery

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Method	Description
<code>prepend(...)</code> , <code>append(...)</code>	Adds parameter to the beginning/end of an element
<code>before(...)</code> , <code>after(...)</code>	Adds parameter before/after an element
<code>remove()</code>	Removes all elements on which this is called
<code>remove(...)</code>	Removes all descendants with the given selector(s)