CS472 WAP

jQuery Selectors

DOM, jQuery

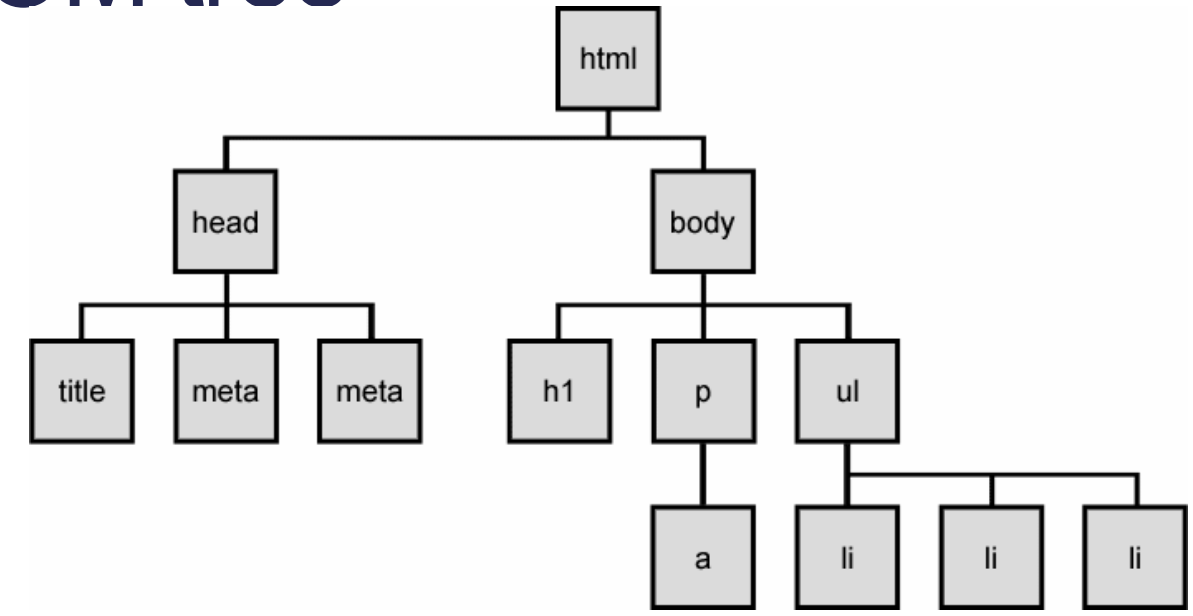
Main Point Preview

- When the argument to $() is a CSS selector the function will return a “jQuery object” that contains a group of selected DOM elements. CSS selectors are a simple, natural, and powerful tool used by jQuery to identify groups of DOM elements.
- *Science of Consciousness: A mantra is a simple, natural, and powerful tool that we use in the TM Technique.*

Aspects of the DOM and jQuery

- **Identification:**
  - how do I obtain a reference to the node that I want.
  - using css-like selectors to get target nodes
- **Traversal:**
  - Find nodes by tree traversal relations
  - using children, sibling, parent, etc links to get target nodes
- **Node Manipulation:**
  - how do I get or set aspects of a DOM node.
  - e.g., style, attributes, innerHTML
- **Tree Manipulation:**
  - how do I change the structure of the page.

The DOM tree



- The elements of a page are nested into a tree-like structure of objects
  - half of the challenge is singling out elements that you want

DOM selectors

name	description
getElementById	returns the first element with the specified id.
getElementsByTagName	returns array of all elements with the given tag, such as "div"
getElementsByName	returns array of all elements with the given name attribute (mostly useful for accessing form controls)
querySelector *	returns the first element that would be matched by the given CSS selector string
querySelectorAll *	returns an array of all elements that would be matched by the given CSS selector string

jQuery / DOM comparison

DOM method	jQuery equivalent
getElementById("id")	$("#id")
getElementsByTagName("tag")	$("tag")
getElementsByName("somename")	$("[name='somename']")
querySelector("selector")	$("selector")
querySelectorAll("selector")	$("selector")

jQuery node identification

- The $ (aka jQuery) function selects elements from the DOM using most any CSS selector.

```
// single argument selectors
const elem = $("#myid");
const elems = $('input')

// conjunction of selectors—requires both - no space
const elems = $("#input.special");

// disjunction of selector--any can match - comma
const elems = $("#myid, p");

// hierarchy selectors (descendents)
const elems = $("#myid div p"); //space for descendent selection
const elems = $("#myid > div p");  // > for child selection

// context selectors
const $elem = $("#myid");
const specials = $("li.special", $elem); //or elem.find("li.special");

// combination
const elems = $("#myid > h1.special:not(.classy)");
```

5 core single argument selectors

1. ID
   ```
   $('#age')
   ```
2. type
   ```
   $('input')
   ```
3. attribute
   ```
   $('[required]')
   $('[type=password]')
   ```
4. Class
   ```
   $('.special')
   ```
5. filter
   ```
   $('tr:first')
   ```

jQuery selector references

- jQuery has a powerful set of selectors from CSS plus several of its own. (**bold** = jQuery specific)

ID selector (#)	Descendent selector ( )	:button	**:not()**
Class selector (.)	Child selector (>)	**:text**	**:has()**
Attribute selector [name='value']	:first-child :only-child	**:input**	:lt()
Element selector (tag)	:nth-child()	:checked	:gt()
Multiple selector (,)	:even	:file	**:eq()**

jQuery selector references

- :input is pseudo selector by jQuery which includes <buttons>, <textarea>, e.t.c
- input is a tag match which strictly matches <input>.

- :**input :** *input, textarea, select and button elements.*
- *:**text** :* *input elements of type text.*
- :**file :** *elements of type file. , e.g.,* <input type="file">
- **not :** *elements that do not match the given selector.*
- **has :** *elements that contain at least one element matching specified selector.*
- **lt :** *elements at an index less than* index *within the matched set.*
- *:**eq** :* *the element at index* n *within the matched set.*

Key jQuery Concepts and Terms

- the jQuery function
  - refers to the global jQuery function that is normally aliased as $ for brevity
- a jQuery object
  - the object returned by the jQuery function that often represents a group of elements
- selected elements
  - the DOM elements that you have selected for, most likely by some CSS selector passed to the jQuery function and possibly later filtered further

A jQuery object

- $ always (even for ID selectors) returns array-like object: jQuery object
- The returned jQuery object wraps originally selected DOM objects.
- It can access actual DOM object by accessing elements of jQuery object.

```
// false
document.getElementById("id") === $("#myid");

// true
document.getElementById("id") === $("#myid")[0];
```

Using $ as a wrapper

- $ adds extra functionality to DOM elements
- passing an existing DOM object to $ will give it the jQuery upgrade

```
// convert regular DOM objects to a jQuery object
let elem = document.getElementById("myelem");
elem = $(elem);

let elems = document.querySelectorAll(".special");
elems = $(elems);
```

Main Point

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