

DOM: Document Object Model



AND A SPRINKLING OF JQUERY

How To Structure Webpages?



How to Structure Webpages:



- Markup Language
 - HTML, XML, LaTeX

HTML



```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN"
"http://www.w3.org/TR/html4/strict.dtd">
<html>
  > <head>
    > > <title>Playing with the DOM</title>
    > </head>
    > <body>
    > </body>
  </html>
```

Notice :

- Indentation & tree-like structure
- Symantically rich tag names

Layout Engine



- Popular Layout Engines: WebKit (Chrome, Safari), Gecko (Firefox).
- Layout Engines parse an HTML text document into the Document Object Model.

DOM: Document Object Model



- Once the DOM is created, it has methods you can use to manipulate it.
- It is like a tree. There is one trunk, then branches that branch off of other branches and end in leaves.
- We call the branches *nodes*. A node that is closer to the trunk is a parent of the node directly after it, which is called the child of its parent.
- Text in between tags is also a node and cannot have any children

DOM Objects are Documented Here



- <http://www.w3schools.com/jsref/>

DOM Properties vs. DOM Methods



- **Properties** are often referred to as something that *is* (i.e. the name of a node).
- **Methods** are often referred to as something that *is done* (i.e. remove a node).

DOM Property Examples



- **Document Object**

- `document.title`
- `document.domain`
- `document.URL`

- **Anchor Object**

- `href: document.getElementsByTagName('a')[4].href`
- `href: document.getElementsByTagName('a')[4].target`

- **HTMLElement**

- `firstChild: document.getElementsByTagName('a')[4].firstChild`
- `innerHTML: document.getElementsByTagName('a')[4].innerHTML`
- `className: document.getElementsByTagName('a')[4].className`

DOM Method Examples



- **Document Object**

- getElementById()
- write()

- **HTMLElement**

- focus()
- blur()
- appendChild()
- removeChild()
- setAttribute()

Get to Know These Methods & Properties:



- `getElementById()`
- `write()`
- `innerHTML`

Exercise: Fly in My Soup!



- Ask the user “How did you like your soup”
- No matter what they say, assume that they said “There was a fly in my soup”
- Apologize profusely, including writing a thoughtful apology letter to the page using the `write()` method.

Exercise: Soup Was AMAZING!



- Ask the user “How did you like your soup”
- No matter what they say, assume that they said “That was the most AMAZING soup I’ve EVER eaten!”
- Tell them all about how you are the best chef ever to grace the Earth and how your recipe is full of secret ingredients that no one will ever discover. This time, use innerHTML to change the contents of the `div#bragging-rights`.

jQuery



A CRASH COURSE



Getting jQuery



- First you'll need to download jQuery. It is just a text file and is updated frequently, so overtime you'll want to get the latest version.
- http://docs.jquery.com/Downloading_jQuery
 - Look for the heading "Current Release"
 - You'll probably want the minified version

Including jQuery



- Add this between the `<head></head>` tags in your HTML document:
 - `<script type="text/javascript" src="jquery.js"></script>`
 - Note: make sure that the `src="jquery.js"` points to the path to your `jquery.js` file in your directory.

Waiting for the Document to Load



- Your browser takes time to load the DOM. The jQuery *ready* method makes sure that the document is loaded before running the code between the curly braces.
 - Note: the *load* event could also be used (historically it was used before jQuery), but *load* waits for all images and other assets to load. Your script really only needs to wait for the DOM hierarchy to be created, which is what *ready* does.

```
$(document).ready(function() {  
    // do stuff when DOM is ready  
});
```

Time to Write jQuery Code!



jQuery in Firebug



- You can test that jQuery is available to you in Firebug like this:

```
>>> jQuery  
function()
```

- Open up

Selectors



- jQuery makes it especially easy to select particular parts of the DOM.
 - Selectors are similar to CSS selectors
 - Much shorter than Javascript selectors
 - ✦ Javascript: `getElementByID("my-id")`
 - ✦ jQuery: `$("#my-id")`

Fun Methods to Play With



- `addClass()`, `removeClass()`, `.html()`, `.val()`
- `hasClass()`, `blur()`, `focus()`, `change()`, `append()`
- ...and many more...

Testing jQuery



- **Fixtures**

Jasmine Documentation



- <http://pivotal.github.com/jasmine/jsdoc/index.html>

Exercises



- materials/dom/jqueryDomSpecRunner.html
- Make a table in HTML that you will modify using jQuery to display the results of the math you did in your homework.
- Go here: <http://api.jquery.com/category/effects/>
 - Use the following methods to manipulate an HTML document you create:
 - ✦ .fadeIn(), .fadeOut(), .hide(), .show(), .slideDown(), .toggle()

Homework



- Read Chapters
 - 2 (Data Types & Variables)
 - 11 (DOM)
- Pick at least one jQuery tutorial to complete. Be ready to tell us one thing you learned from the tutorial next class.
 - <http://docs.jquery.com/Tutorials>
- Go through this tutorial:
 - <http://www.w3schools.com/dom/default.asp>