JavaScript and jQuery Class
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Week 8

Chapter 7 Get off to a fast start with jQuery
- pg 195 - 211 and the Email Application, pg 215 css() method

Chapter 9 DOM manipulation and traversal
– pg 263 html() and text() methods

Introduction to jQuery

What is jQuery?

jQuery is a JavaScript library intended to make writing JavaScript easier and fun. It was developed to help web developers write and extend JavaScript programs using using a defined set of methods based on native JavaScript functions. jQuery takes hard to understand and write JavaScript application programming interfaces (API) and makes them available through easy to understand and write jQuery syntax.

jQuery takes JavaScripts two biggest headaches - its complexity and browser differences - by incorporating this, behind the scene, into its easy to use syntax. **jQuery allows you to write just a few lines of code to achieve what would have taken many lines of code using JavaScript.** jQuery also has thousands of plugins that allow you to create nice website interactions with just a few lines of code. jQuery is used on some of the largest websites, and is built into WordPress and Drupal, two popular content management systems.

History of jQuery

jQuery was developed in 2006 by John Resig, who is still the lead developer. It is an open source platform, which means that anyone can add to its development and improvement. It is released under the MIT License or the GNU General Public License (GPL). There is great documentation for jQuery also - jquery.com.

Advantages of Using jQuery

- same JavaScript with less code
- friendly to web developers - uses the CSS knowledge which we already have
- chaining - allows you to “chain” multiple methods for the same object
- cross browser compatibility
- CSS3 compliant
- employs unobtrusive JavaScript - keeps JS code out of the HTML document’s <body>
- employs progressive enhancement - a strategy of starting with a baseline of features supported by all browsers, and then adding features that are supported by the modern browsers
- relatively small file size
- large developer community
- thousands of plug-ins

Current Version - - http://code.jquery.com/jquery-latest.min.js

jQuery is relatively stable as there have been no major version releases just minor updates

Other JavaScript Libraries

jQuery was not the first library to be developed, but is the most popular to date. The other most popular libraries are:

- Dojo - 2004
- YUI (Yahoo User Interface) - 2005
- Prototype - 2006
- MooTools - 2006

How to use the jQuery Library

http://jquery.com/download/

jQuery is simply a lot of JavaScript code in one large file. Like any external JavaScript file, you simply link to it in your HTML document. You will want to used the “minified” version.

You have two choices:

1. You can host the file yourself by downloading it from ww.jquery.com

2. You can use a hosted version from a Content Delivery Network (CDN)

Note: you must add the proper code to the <head> section of your document to link the file

What is a Minified Version?

Minification is the process of removing all unnecessary characters from source code, without changing its functionality. These unnecessary characters usually include white space characters, new line characters, comments, and sometimes block delimiters, which are used to add readability to the code but are not required for it to execute. Minified source code is especially useful for interpreted languages deployed and transmitted on the Internet (such as JavaScript), because it reduces the amount of data that needs to be transferred

What is the jQuery UI ?

jQuery UI provides abstractions for low-level interaction and animation, advanced effects and high-level, themeable widgets, built on top of the jQuery JavaScript Library, that you can use to build highly interactive web applications.

Popular CDNs

Google Hosted Library

https://developers.google.com/speed/libraries/

<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.10.2/jquery.min.js"></script>

- jQuery

Microsoft Ajax CDN

http://www.asp.net/ajaxlibrary/cdn.ashx

<script src="http://ajax.aspnetcdn.com/ajax/jquery/jquery-1.10.2.min.js" type="text/javascript"></script> - jQuery

The Official jQuery CDN - Media Temple

http://mediatemple.net/webhosting/procdn/

Also at jQuery.com

<script src="http://code.jquery.com/jquery.min.js"></script> -

Some considerations when linking to the jQuery file

- The link to the jQuery file must precede any other JavaScript in the <head> section. Don't put any other <script> tags before the <script> tag that load the jQuery file.

- Place the code after any CSS in your <head> section. jQuery often references styles from a stylesheet, so you should put the code in the bottom of the <head> section.

Getting Started - Writing jQuery

Including the jQuery Library in Your Web Page (pg 196)

Hosting the file yourself

```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8" >
<title></title>
<link rel=”stylesheet”  href=”styles.css”>
<style>
   /* CSS here */
</style>
<script src="jquery.js"></script>
<script>
  // other jQuery / JS code goes here
</script>
</head>
<body></body></html>
```

Using a CDN

```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8" >
<title></title>
<link rel=”stylesheet”  href=”styles.css”>
<style>
   /* CSS here */
</style>
<script src="http://code.jquery.com/jquery.min.js"></script>
<script>
  // other jQuery / JS code goes here
</script>
</head>
<body></body></html>
```

The ready function (pg 206-207) - $(document).ready ();

- also called a “method” or :event handler method”

The ready function is a built in jQuery function that waits until the HTML page has loaded before it runs your code. Because a lot of JavaScript programming is about manipulating the contents of the web page, JavaScript needs to select it. JavaScript can’t select an HTML element until the browser loads it, so we need to wait unit the page loads! This is similar to window.onload.

Syntax

All of your JavaScript / jQuery code will go inside the ready function. There is a semicolon at the end of this statement!

```
<head>
<meta charset="utf-8" >
<title></title>
<script src="http://code.jquery.com/jquery.min.js"></script>
<script>
 $(document).ready(function() {

      //      code here
  });

</script>
</head>
```

Anonymous Function

The above code shows the syntax for an “anonymous” function. This syntax is commonly used instead of writing a function with a name.

$ - The dollar sign is commonly used in jQuery to indicate a selection

Shorthand for the Ready Function

```
 $(function() {
    // code here
});
```

Selectors (pg 202-203)

jQuery is based upon CSS selectors. Selectors are the core building blocks of jQuery. Before we can do anything we need to identify what we are doing and where. We do this by using jQuery selectors.

What Can We do with jQuery?

- change a property of an element
- add new content
- remove / manipulate / change content
- extract information
- add / remove CSS
- but first we need to select it!

Selecting Page Elements using the DOM

document.getElementById(‘some_id”);
document.getElementsByTagName(‘some_tag”);

Selecting Page Elements using jQuery (pg 202-203)

jQuery offers a very powerful technique for working with the HTML element - CSS selectors. We can select an element based on its CSS selector. Basic CSS selectors such as id. class, and element selectors make up the heart of jQuery.

If you need to brush up on HTML or CSS selectors see:
- http://css.maxdesign.com.au/selectutorial/
- http://htmldog.com/guides/
-http://456bereastreet.com/archive/200601/css_3_selectors_explained

Basic Selector Syntax

$(‘selector’).method();   or $(“selector”).method();

Select an element by using the id selector

<h1 id=”firstHeading”></h1> >>> $(“#firstHeading”).method();

Select an element by using the class selector

<h1 class=”red”></h1> >>> $(‘.red”).method(); >>> selects all element with class=”red”

Select an element by using the element selector

<h1></h1> >>> $(‘h1”).method(); >>> selects all <h1> elements

Basic jQuery Methods

Writing to the Page (pg 262-263)

html() method

>>> $(‘selector’).html(“Hello World”);

Setting CSS properties (pg 272-275)

css() method

>>> $(‘selector’).css(“property”, “value”);

>>> $(‘selector’).css({“property” : “value”, “property” : “value”});

Chaining

$(‘selector’).**html**(“Hello World”).**css**(“color”, “red”);

$(selector) - pg 203

All type of selectors in jQuery, start with the dollar sign and parentheses: $(). This expression creates an “object” that can have properties, methods, and events. This is actually a shortcut for using the DOM, which makes jQuery very popular. You can instantiate the jQuery object simply by writing **jQuery( )** or even shorter using the jQuery shortcut name: **$( )**.

Element Selector - example: $(“p”) - pg 203

The element selector will make a selection based on the tag or element name. In the above example all of the <p> elements will be selected.

-- This is the same as document.GetElementsByTagName(“p”).

id Selector - example: $(“#xyz”) - pg 203

The id selector will make a selection based on the id attribute in the tag or element. In the above example ONLY the element with - **id=”xyz”** will be selected.
-- This is the same as document.GetElementById(“#xyz”).

class Selector - example: $(“.abc”) - pg 203

The class selector will make a selection based on the class attribute in the tag or element. In the above example ALL of the element with - **class=”abc”** will be selected.
-- This is the same as document.GetElementsByClassName(“.abc”).

multiple class Selector - example: $(“.abc.xyz”) - pg 203

This selector will make a selection based on the multiple class attributes in the tag or element. In the above example ALL of the element with - **class=”abc xyz”** will be selected.

Advanced / Parent - Child Selectors

descendant Selector - example: $(“ul b”) - pg 203

This selection is based on the descendant relationship between the elements. It matches any element that is a descendant of the specified element. Remember, when using element selectors, it selects all of the elements!

<ul>
  <li>**<b>**   </**b**></li>

direct descendant Selector - example: $(“li > b”) - pg 203

This selection is based on the direct parent / child relationship between the elements. It matches any element that is a direct descendant of the specified element. Remember, when using element selectors, it selects all of the elements!

<ul>
  <li><b> </b> </li>

adjacent sibling Selector - example: $(“div + ul”) - pg 203

This selection is based on the direct adjacent positional relationship between the elements. It matches any element that appears directly after the specified element.

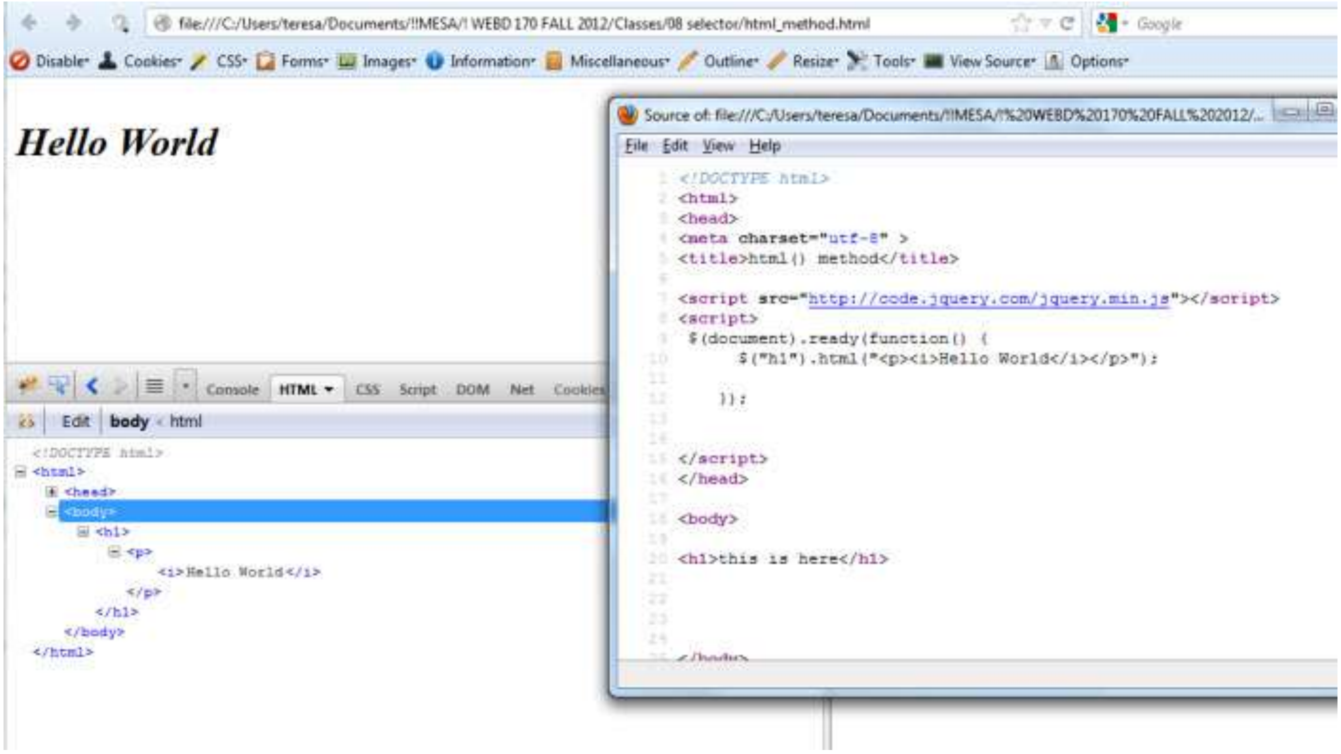
<div>
<ul>
  <li><b> </b> </li>
</ul>

<ol>
  <li><b> </b> </li>
</ul>
</div>

Looking at the rendered code

Once you have a selection, you can manipulate it. Below are some commonly used jQuery methods to do this.

Note: When we look at the source code of a web page, we see the raw code, not the “rendered” code - how the page would look after the code was applied. You are able to do this using the Firebug plugin - http://getfirebug.com/wiki/index.php/HTML_Panel


file:///C:/Users/teresa/Documents/!!MESA/! WEBD 170 FALL 2012/Classes/08 selector/html_method.html
Google
Disable
Cookies
CSS
Forms
Images
Information
Miscellaneous
Outline
Resize
Tools
View Source
Options
Hello World
Console
HTML
CSS
Script
DOM
Net
Cookies
Edit
body
html
Source of: file:///C:/Users/teresa/Documents/!!MESA/!%20WEBD%20170%20FALL%202012/...
File
Edit
View
Help

```
<!DOCTYPE html>
<html>
   <head>
   <body>
      <h1>
         <p>
               <i>Hello World</i>
         </p>
      </h1>
   </body>
</html>
```

```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8" >
<title>html() method</title>

<script src="http://code.jquery.com/jquery.min.js"></script>
<script>
 $(document).ready(function() {
       $("h1").html("<p><i>Hello World</i></p>");

     });


</script>
</head>

<body>

<h1>this is here</h1>




</body>
```

About jQuery Methods

Some methods can be used to both **set** and **get (or “read” or “return”)** a value(s).
Common methods can be found at http://www.w3schools.com/jquery/jquery_ref_html.asp

html() method

This method is the same as the .innerHTML property. It allows us to write both text and HTML to the page. Note that this will replace any existing content that is already there! It can also be used to retrieve the HTML contents. It can also be used to return a value.

text() method

This method is the same as the .innerText property. It allows us to write only text to the page. Note that this will replace any existing content that is already there! It can also be used to retrieve the text contents. It can also be used to return a value.

The Click Event - pg 207

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

  $("#btn").click(function(){

      // code to be executed here

   });  //end function

});  // end ready
```

```
<body>
<form>
<input type="button" id="btn" value="Click me to do something">
</form>
</body>
```