

jQuery

Javascript libraries are simply js files that we
attache to our web pages

The goal behind those libraries is to enable
rapid programming as well as pre-built
controls (e.g. calendar control)

jQuery is the most popular js library.

What is JQuery

- jQuery is a fast and concise JavaScript Library that simplifies HTML document traversing, event handling, animating, and Ajax interactions for rapid web development.
- **jQuery is designed to change the way you write JavaScript.**

Advantages

- Powerful JavaScript library
 - Simplify common JavaScript tasks
 - Access parts of a page
 - Modify the appearance of a page
 - Alter the content of a page
 - Change the user's interaction with a page
 - Add animation to a page
 - Provide AJAX support
 - Abstract away browser quirks

Advantages

- Lightweight – 14kb (Minified and Gzipped)
- Cross-browser support (IE 6.0+, FF 1.5+, Safari 2.0+, Opera 9.0+, Google Chrome)
- CSS-like syntax – easy for developers/non-developers to understand
- Active developer community
- Extensible - plugins

Introductory Sample

```
<html>
<body>
<h1>Cities of the World</h1>
<dl>
<dt>Paris</dt>
<dd>Chic, fashionable,
    expensive rude</dd>
<dt>Sydney</dt>
<dd>Opera house but no
    culture, Mardi Gras,
    fireworks</dd>
</dl>
</body>
</html>
```

```
<head>
<style>
h1 {font-size: 2.5em; margin-
    bottom: 0;}
.emphasize {font-style: italic;
    color:red;}
</style>
</head>
```

Cities of the World

Paris
Chic, fashionable, expensive rude

Sydney
Opera house but no culture, Mardi Gras, fireworks

Basic JQuery

- Selecting part of document is fundamental operation
- A JQuery object is a wrapper for a selected group of **DOM** nodes
- \$("dt") is a JQuery object containing all the "dt" elements in the document

Basic JQuery

- .addClass() method changes the DOM nodes by adding a 'class' attribute
- \$("dt").addClass("emphasize") will change all occurrences of <dt> to <dt class="emphasize">
- See also .removeClass()

Basic JQuery

- To make this change, put it in a function and call it when the document has been loaded and the DOM is created

```
function doEmph(){$("dt").addClass("emphasize")}  
<body onLoad="doEmph()">
```

- We had to alter the HTML (bad)
- Structure and appearance should be separated!
- Also, onLoad waits until all images *etc* are loaded. Tedious.

Basic JQuery

- JQuery provides an independent scheduling point after DOM is created and before images are loaded
 - `$(document).ready(doEmph);`
 - No HTML mods required. All done in script.
 - Better solution:
 - `$(document).ready(function(){
 $("dt").addClass("emphasize")
});`
- Look at the structure of the `document.ready`, it accepts a **method as a parameter**.

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    culture, Mardi Gras,
    fireworks</dd>
</dl>
</body>
</html>
```

```
<head>
<script type='text/javascript'>
$(document).ready(function(){
$("dt").addClass("emphasize")
});
</script>
<style>
h1 {font-size: 2.5em; margin-bottom:
    0;}
.emphasize {font-style: italic; color:red;}
</style>
</head>
```

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JQuery Selectors

- CSS like

p element name

#id identifier

.class classname

p.class element with class

p a anchor as any descendant of p

p > a anchor direct child of p

JQuery Selectors

- More

`a[@href]`

anchor with an *href* attr

`div[ol]`

div with an *ol* inside

`a[@target='_blank']` any anchor with a specific value for the *target* attribute

jQuery Filters

<code>p:first</code>	first paragraph
<code>li:last</code>	last list item
<code>a:nth(3)</code>	fourth link
<code>a:eq(3)</code>	fourth link
<code>p:even</code> or <code>p:odd</code>	every other paragraph
<code>a:gt(3)</code> or <code>a:lt(4)</code>	every link after the 4th or up to the fourth
<code>a:contains('click')</code>	links that contain the word <i>click</i>
<code>tr:odd</code> or <code>tr:even</code>	<i>odd or even table rows</i>
<code>input:not(.required)</code>	<i>all inputs without required classname</i>

Example

- JQuery uses chaining as follows
\$(`'a:contains("click me")'`).
parent().
addClass("emphasize")

Crazy chaining

```
$('#form#login')  
  // hide all the labels inside the form with the 'optional' class  
  .find('label.optional').hide().end()  
  // add a red border to any password fields in the form  
  .find('input:password').css('border', '1px solid red').end()  
  // add a submit handler to the form  
  .submit(function(){  
    return confirm('Are you sure you want to submit?');  
  });
```

From <http://www.ibm.com/developerworks/library/x-ajaxjquery.html>

JQuery Effects

- `.css('property', 'value')`
- `.css({'prop1':'value1', 'prop2':'value2'...})`
- E.g. `$('#p.message').css('color', 'red')`
- `.hide(speed)` or `.show(speed)`
Where speed is 'slow', 'normal', 'fast' or not set.

jQuery Events

- `bind(eventname, function)` method
 - ‘click’
 - ‘change’
 - ‘resize’
 - ... (<http://docs.jquery.com/Events/bind>)

```
$('a').bind('mouseover',function() {  
    $(this).css('color','red');  
});
```

More JQuery Changes DOM

- `.attr({'name', 'value'})`
 - sets a new attribute (or many)
- `$('<i>hello</i>')`
 - Creates a new element
- `$('<i>hello</i>').insertAfter('div.chapter p');`
 - Creates element and inserts it into the document
- `.html()` or `.text()` or `.empty()` will replace matched elements with newly created elements

Considerations

- JQuery can have performance implication and as always it depends on how you write code .
- Generalization is good but excess is bad. Remember every `$()` searches the DOM for elements, and excessive use can cause the browser to hang .
 - Use ID selector as much as possible or at least use nested selector using ID as parent like. To search all input element .
 - `$("input")` will perform slower than
 - `$("#tablename input")` which will be faster.

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.

Demos: <http://jqueryui.com/demos/>

Plugins

jQuery offers a mechanism for adding in methods and functionality, bundled as plugins. Most of the methods and functions included in the default download are written using the jQuery plugin construct.

Syntax:

<http://docs.jquery.com/Plugins/Authoring>

Examples: <http://plugins.jquery.com/>

Other Javascript Libraries

- <http://www.extjs.com/>
- <http://developer.yahoo.com/yui/> - Yahoo!
- <http://code.google.com/closure/compiler/>
- <http://script.aculo.us/>
- <http://www.prototypejs.org/>