

CS 696 Emerging Web and Mobile Technologies
Spring Semester, 2011
Doc 4 Client Side JS & jQuery
Jan 30, 2011

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References

jQuery: Novice to Ninja, Castledine & Sharkie, SitePoint Pty. Ltd, Feb 2010

Pro JavaScript Techniques, John Resig, Apress, 2006

JavaScript Programmer's Reference, MacAuley & Jobson, Osborne/McGraw-Hill, 2001

HTML5 & CSS3 Develop with Tomorrow's Standards Today, Hogan, Pragmatic Programmers

w3schools, <http://www.w3schools.com>

jQuery Documentation, http://docs.jquery.com/Main_Page

Client-side Example

Run

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8" /><title>ClientSide</title>
  <script defer="defer" type="text/javascript">
function likeJavaScript(){
  var paragraphs = document.getElementsByTagName("p");
  alert( paragraphs.length);
  var message='Do you like JavaScript?';
  if (confirm(message))
    paragraphs[0].innerHTML="<b>JavaScript is awesome!</b>"
  else
    paragraphs[0].innerHTML="JavaScript sucks!"
  }
  </script>
</head>
<body onmouseover="likeJavaScript();">
<p>Question?</p></body>
</html>
```

Prompting User

alert – dialog window with text

confirm – dialog window with text & yes no buttons

prompt – dialog window with text and input area

Events

onblur	An element loses focus
onchange	The content of a field changes
onclick	Mouse clicks an object
ondblclick	Mouse double-clicks an object
onerror	An error occurs when loading a document or an image
onfocus	An element gets focus
onkeydown	A keyboard key is pressed
onkeypress	A keyboard key is pressed or held down
onkeyup	A keyboard key is released
onmousedown	A mouse button is pressed
onmousemove	The mouse is moved
onmouseout	The mouse is moved off an element
onmouseover	The mouse is moved over an element
onmouseup	A mouse button is released
onresize	A window or frame is resized
onselect	Text is selected
onunload	The user exits the page

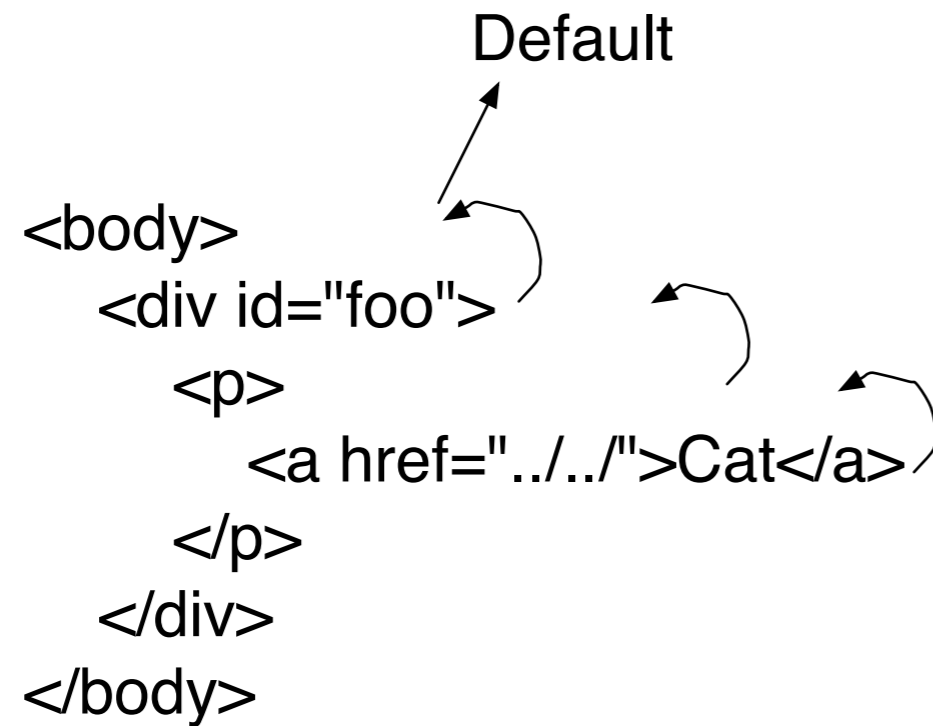
Bubbling of Events

Run

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8" />
  <title>BubbleExample</title>
</head>
<body onclick="alert('body')" >
  <p onclick="alert('p')" >
    <a onclick="alert('a')" >Hello</a>
  </p>
</body>
</html>
```

```
first    alert('a')
Second  alert('p')
Third    alert('body')
```

Bubbling



Unless explicitly stopped
event will be handled by

handler in originating element

handler in enclosing elements

then default (if any) action by browser

Elements may not have handler for
given event

Stopping Event from Bubbling

In IE

```
window.event.cancelBubble = true;
```

Other browsers

```
event.stopPropagation();
```


Default Browser Behavior

Event	Browser Default Action
Click on an <code><a></code> element	Load new page
Click on submit button	Submit form data to server
Mouse hover over <code></code>	Show tool tip

Stopping the Default Browser Behavior

IE

```
window.event.returnValue = false;
```

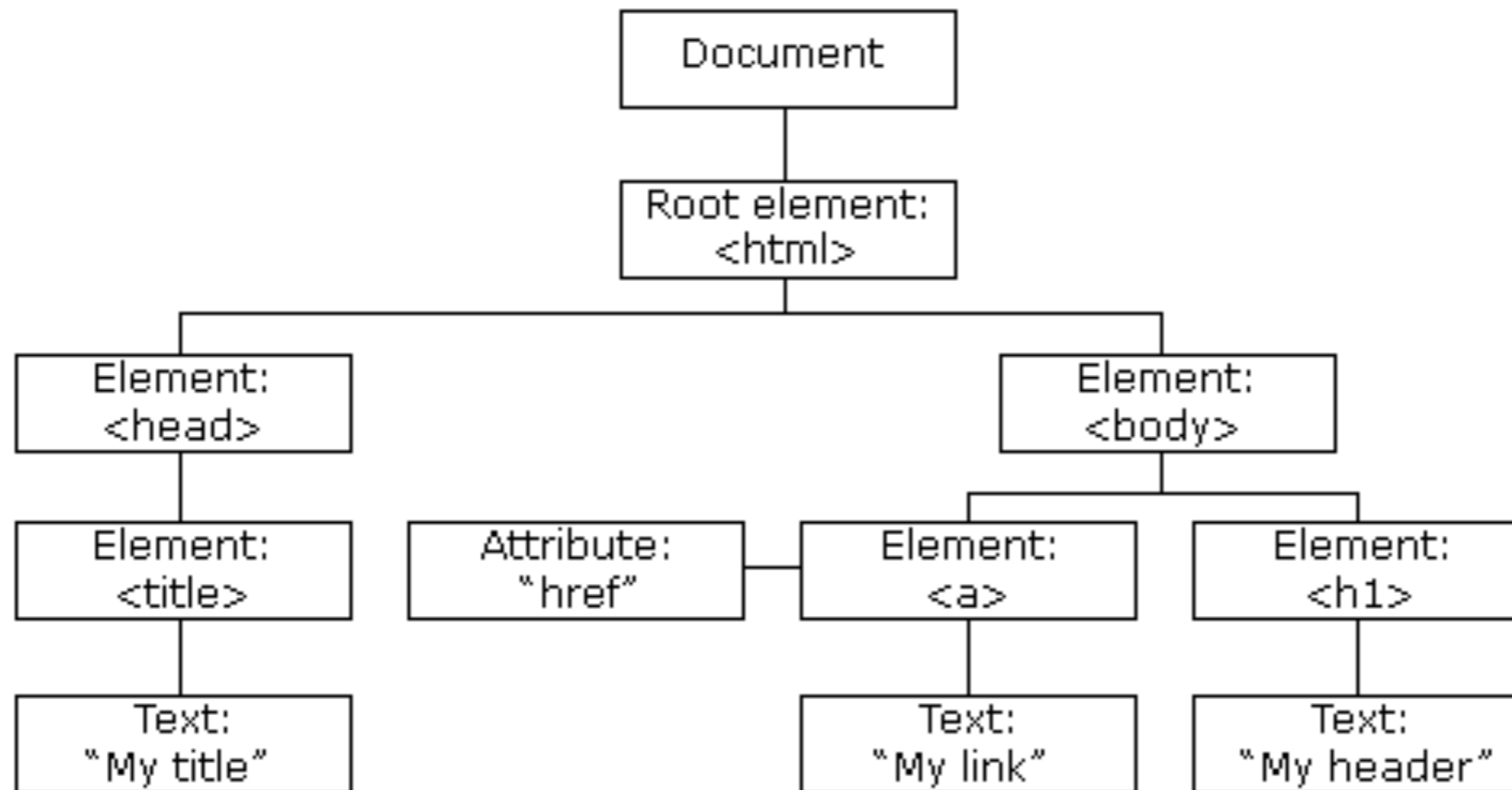
Every one else

```
event.preventDefault();
```

DOM - Document Object Model

Convention for representing and interacting with elements in HTML document

Javascript uses DOM to interact & modify HTML document



Document - Properties

anchors[]
forms[]
images[]
links[]

cookie	Name/value pairs of cookies in the document
documentMode	Mode used by the browser to render document
domain	Domain name of the server
lastModified	Date & time the document was last modified
readyState	Returns the (loading) status of the document
referrer	URL of the current document
title	Sets or returns the title of the document
URL	Full URL of the document

Document - Methods

<code>close()</code>	Closes the output stream opened with <code>document.open()</code>
<code>getElementById()</code>	Accesses the first element with the specified id
<code>getElementsByName()</code>	Accesses all elements with a specified name
<code>getElementsByTagName()</code>	Accesses all elements with a specified tagname
<code>open()</code>	Opens an output stream to collect the output from <code>document.write()</code> or <code>document.writeln()</code>
<code>write()</code>	Writes HTML expressions or JavaScript code to a document
<code>writeln()</code>	Same as <code>write()</code> , but adds a newline

Document write/writeln

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8" />
  <title>Javascript.html</title>
</head>
<body>

<script type="text/javascript">
document.writeln( "Hello World!",<br/>');
</script>

</body>
</html>
```

Can only use write/writeln
before page has been rendered

getElementById

can only query/modify document
after page is rendered

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8" />
  <title>ClientSide</title>
  <script type="text/javascript">
function change(){
  document.getElementById("test").style.color='red';
}
  </script>
</head>
<body>
  <p id="test" onclick="change()" >Sample text</p>
</body>
</html>
```

How to tell if page is done rendering?

There are a number of ways

Easiest it to use jQuery

jQuery

jQuery

JavaScript library for
HTML document traversing/modifying
event handling
animating
Ajax

Cross-browser
Stop worrying about IE

jQuery 1.5 was released Jan 31, 2011

jQuery UI
Useful Widgets

jQuery plugins
Useful additions

jQuery Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
  <script src="http://ajax.googleapis.com/ajax/libs/jquery/1.4.4/jquery.min.js"
    type="text/javascript"></script>
  <script type="text/javascript">
    $(document).ready(function(){
      alert("The link no longer works");
      $("a").click(function(event){
        event.preventDefault();
        $(this).hide("slow");
      });
    });
  </script>
</head>
<body>
  <a href="http://jquery.com/">jQuery</a>
</body>
</html>
```

Loading jQuery - Local Copy

Download jQuery

http://docs.jquery.com/Downloading_jQuery

jquery-1.4.4.js

183KB

jquery-1.4.4.min.js

78.6KB

White space removed

```
<script src="jquery-1.4.4.min.js" type="text/javascript"></script>
```

Loading jQuery - CDN

Content Delivery Network

System of computers with copy of data

When client requests data closest machine is used

With jQuery browser may have already cached jQuery file

Google

```
<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.4.4/jquery.min.js"
type="text/javascript"></script>
```

Microsoft

```
<script src="http://ajax.microsoft.com/ajax/jquery/jquery-1.4.4.min.js"
type="text/javascript"></script>
```

jQuery 1.5 was not on Google as of 8:10 pm Jan 31, 2011

jQuery Function

jQuery exposes one function called jQuery
(which does a lot more than shown below)

`jQuery("h1")` returns array of all h1 elements

`jQuery(".nav")` returns array of all elements with class 'nav'

`jQuery("#important")` returns the element with id 'important'

`jQuery('div.nav p')` returns all p elements inside div with class 'nav'

jQuery Function alias

jQuery is aliased to \$

Shorter

Other JavaScript libraries
use same alias

jQuery("h1") \$("h1')

jQuery(".nav") \$(".nav")

jQuery("#important") \$("#important")

jQuery('div.nav p') \$('div.nav p')

Document ready

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

Shortcut version

```
<script type="text/javascript">  
  $(document).ready(function(){  
    alert("Displayed when page loaded");  
  });  
</script>
```

```
<script type="text/javascript">  
  $(function(){  
    alert("Displayed when page loaded");  
  });  
</script>
```


html, addClass, css

```
$("#p.message").html("New <b>Text</b> for paragraph")
```

set contents of paragraph(s) with class "message" to
"New Text for paragraph"

```
$('h1').addClass('realBold')
```

add the class 'readBold' to all h1 tags

```
$("#p").css("color","red");
```

Set text in all paragraphs to color red

```
$("#p").css({"color":"red", "font-size": "2em"});
```

Set text in all paragraphs to color red and font size 2em

Creating new Elements

```
<script type="text/javascript" charset="utf-8">
$(function(){
  var element = $("<p>Hello World</p>");
  element.css("color", "#f00").insertAfter("#header");
});
</script>
</head>
<body>
  <div id="header">
    <h1>Heading</h1>
  </div>
</body>
</html>
```

Heading

Hello World

jQuery Deconstructed

<http://www.keyframesandcode.com/resources/javascript/deconstructed/jquery/>

Website that helps you navigate jQuery source to see how it works