References

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

Pro JavaScript Techniques, John Resig, Apress, 2006


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

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

<!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

<table>
<thead>
<tr>
<th>Event</th>
<th>Browser Default Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Click on an <code>&lt;a&gt;</code> element</td>
<td>Load new page</td>
</tr>
<tr>
<td>Click on submit button</td>
<td>Submit form data to server</td>
</tr>
<tr>
<td>Mouse hover over <code>&lt;img&gt;</code></td>
<td>Show tool tip</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>anchors[]</td>
<td></td>
</tr>
<tr>
<td>forms[]</td>
<td></td>
</tr>
<tr>
<td>images[]</td>
<td></td>
</tr>
<tr>
<td>links[]</td>
<td></td>
</tr>
<tr>
<td>cookie</td>
<td>Name/value pairs of cookies in the document</td>
</tr>
<tr>
<td>documentMode</td>
<td>Mode used by the browser to render document</td>
</tr>
<tr>
<td>domain</td>
<td>Domain name of the server</td>
</tr>
<tr>
<td>lastModified</td>
<td>Date &amp; time the document was last modified</td>
</tr>
<tr>
<td>readyState</td>
<td>Returns the (loading) status of the document</td>
</tr>
<tr>
<td>referrer</td>
<td>URL of the current document</td>
</tr>
<tr>
<td>title</td>
<td>Sets or returns the title of the document</td>
</tr>
<tr>
<td>URL</td>
<td>Full URL of the document</td>
</tr>
</tbody>
</table>
# Document - Methods

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

```html
<!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>
```
can only query/modify document after page is rendered
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

jQuery UI
   Useful Widgets

jQuery plugins
   Useful additions

Cross-browser
   Stop worrying about IE

jQuery 1.5 was released Jan 31, 2011
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

Plus they pay for the bandwidth
jQuery Function

jQuery exposes one function called \( \text{jQuery} \)
(which does a lot more that shown below)

\( \text{jQuery("h1")} \) \quad \text{returns array of all h1 elements}

\( \text{jQuery(".nav")} \) \quad \text{returns array of all elements with class 'nav'}

\( \text{jQuery("#important")} \) \quad \text{returns the element with id 'important'}

\( \text{jQuery('div.nav p')} \) \quad \text{returns all p elements inside div with class 'nav'}

jQuery uses the same selector syntax as CSS
jQuery Function alias

jQuery is aliased to $

jQuery("h1")  $("h1")

jQuery(“.nav”)  $(“.nav”)

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

jQuery(‘div.nav p’)  $('div.nav p')

Shorter

Other JavaScript libraries use same alias
Document ready

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

Shortcut version

<script type="text/javascript">
  $(function()
    $(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 <b>Text</b> 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

it is better to change the class of elements rather than to change the css.
Creating new Elements

```html
<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>
        <p>Hello World</p>
    </div>
</body>
</html>
```
jQuery Deconstructed

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

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