

Computer Science E-75

Building Dynamic, Scalable Websites

Harvard Extension School
<http://www.cs75.net/>

Lecture 7: JavaScript

David J. Malan
malan@post.harvard.edu

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JavaScript

- Core JavaScript 1.5 Reference
http://developer.mozilla.org/en/docs/Core_JavaScript_1.5_Reference
- A re-introduction to JavaScript
http://developer.mozilla.org/en/docs/A_re-introduction_to_JavaScript
- JavaScript Reference
<http://www.w3schools.com/jsref/>
- JavaScript Tutorial
<http://www.w3schools.com/js/>

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JavaScript

```
<script type="text/javascript">
// 

    . . .

// ]]&gt;
&lt;/script&gt;</pre></div><div data-bbox="964 294 973 303" data-label="Text"><p>2</p></div><div data-bbox="38 394 129 421" data-label="Section-Header"><h2>JavaScript</h2></div><div data-bbox="39 440 187 535" data-label="Text"><pre>&lt;script language="Javascript1.5"&gt;
// <![CDATA[

    . . .

// ]]&gt;
&lt;/script&gt;</pre></div><div data-bbox="302 625 310 635" data-label="Text"><p>3</p></div><div data-bbox="367 394 458 421" data-label="Section-Header"><h2>JavaScript</h2></div><div data-bbox="367 440 606 454" data-label="Text"><pre>&lt;script src="file.js" type="text/javascript"&gt;&lt;/script&gt;</pre></div><div data-bbox="628 625 637 635" data-label="Text"><p>4</p></div><div data-bbox="691 394 766 421" data-label="Section-Header"><h2>noscript</h2></div><div data-bbox="691 440 853 588" data-label="Text"><pre>&lt;script type="text/javascript"&gt;
// <![CDATA[

    document.write("hello, world");

// ]]&gt;
&lt;/script&gt;

&lt;noscript&gt;
    goodbye, world
&lt;/noscript&gt;</pre></div><div data-bbox="964 625 973 635" data-label="Text"><p>5</p></div><div data-bbox="39 726 135 751" data-label="Section-Header"><h2>Statements</h2></div><div data-bbox="39 770 107 920" data-label="List-Group"><ul><li>■ break</li><li>■ const</li><li>■ continue</li><li>■ do ... while</li><li>■ for</li><li>■ for ... in</li><li>■ for each ... in</li><li>■ function</li><li>■ if ... else</li><li>■ return</li><li>■ switch</li><li>■ throw</li><li>■ try ... catch</li><li>■ var</li><li>■ while</li><li>■ with</li><li>■ ...</li></ul></div><div data-bbox="39 929 303 943" data-label="Text"><p><a href="http://developer.mozilla.org/en/docs/Core_JavaScript_1.5_Reference#Statements">http://developer.mozilla.org/en/docs/Core_JavaScript_1.5_Reference#Statements</a></p></div><div data-bbox="302 956 310 966" data-label="Text"><p>6</p></div><div data-bbox="367 726 426 753" data-label="Section-Header"><h2>Arrays</h2></div><div data-bbox="367 770 488 861" data-label="Text"><pre>var a = new Array();
var a = [];

a[0] = "foo";
a[1] = "bar";
a[2] = "baz";</pre></div><div data-bbox="628 956 637 966" data-label="Text"><p>7</p></div><div data-bbox="691 726 754 753" data-label="Section-Header"><h2>Arrays</h2></div><div data-bbox="691 770 817 861" data-label="Text"><pre>var a = new Array();
var a = [];

a[a.length] = "foo";
a[a.length] = "bar";
a[a.length] = "baz";</pre></div><div data-bbox="964 956 973 966" data-label="Text"><p>8</p></div>
```

focus()

```
<script type="text/javascript">
// 
    // put cursor in username field if empty
    if (document.forms.login.username.value == "")
    {
        document.forms.login.username.focus();
        document.forms.login.username.value = document.forms.login.username.value;
    }

    // else put cursor in password field
    else
    {
        document.forms.login.password.focus();
        document.forms.login.password.value = document.forms.login.password.value;
    }
}
// ]]&gt;</pre></div><div data-bbox="301 293 310 302" data-label="Text"><p>9</p></div><div data-bbox="367 61 452 86" data-label="Section-Header"><h2>Validation</h2></div><div data-bbox="439 128 549 204" data-label="Form"><img alt="A screenshot of a web form with fields for Email, Password, and Password (again), a checkbox for 'I agree to the terms and conditions', and a Submit button." data-bbox="439 128 549 204"/></div><div data-bbox="625 293 639 302" data-label="Text"><p>10</p></div><div data-bbox="691 61 868 89" data-label="Section-Header"><h2>Regular Expressions</h2></div><div data-bbox="691 109 748 128" data-label="Section-Header"><h3>■ RegEx</h3></div><div data-bbox="702 125 959 138" data-label="Text"><p><a href="http://developer.mozilla.org/en/docs/Core_JavaScript_1.5_Reference/Global_Functions/RegExp">http://developer.mozilla.org/en/docs/Core_JavaScript_1.5_Reference/Global_Functions/RegExp</a></p></div><div data-bbox="691 140 743 158" data-label="Section-Header"><h3>■ String</h3></div><div data-bbox="702 155 953 167" data-label="Text"><p><a href="http://developer.mozilla.org/en/docs/Core_JavaScript_1.5_Reference/Global_Functions/String">http://developer.mozilla.org/en/docs/Core_JavaScript_1.5_Reference/Global_Functions/String</a></p></div><div data-bbox="691 187 937 205" data-label="Text"><p><a href="http://www.w3schools.com/jsref/jsref_obj_regexp.asp">http://www.w3schools.com/jsref/jsref_obj_regexp.asp</a></p></div><div data-bbox="960 293 974 302" data-label="Text"><p>11</p></div><div data-bbox="38 393 161 420" data-label="Section-Header"><h2>Global Objects</h2></div><div data-bbox="39 439 87 564" data-label="List-Group"><ul><li>■ Array</li><li>■ Boolean</li><li>■ Date</li><li>■ Function</li><li>■ Math</li><li>■ Number</li><li>■ Object</li><li>■ RegExp</li><li>■ String</li><li>■ ...</li></ul></div><div data-bbox="39 574 287 587" data-label="Text"><p><a href="http://developer.mozilla.org/en/docs/Core_JavaScript_1.5_Reference#Global_Objects">http://developer.mozilla.org/en/docs/Core_JavaScript_1.5_Reference#Global_Objects</a></p></div><div data-bbox="297 625 310 635" data-label="Text"><p>12</p></div><div data-bbox="367 393 434 420" data-label="Section-Header"><h2>Objects</h2></div><div data-bbox="367 438 516 544" data-label="Text"><pre>var obj = new Object();
var obj = {};

obj.key = value;
obj["key"] = value;

var obj = { key: value };</pre></div><div data-bbox="625 625 639 635" data-label="Text"><p>13</p></div><div data-bbox="691 393 825 418" data-label="Section-Header"><h2>Event Handlers</h2></div><div data-bbox="691 438 756 600" data-label="List-Group"><ul><li>■ onblur</li><li>■ onchange</li><li>■ onclick</li><li>■ onfocus</li><li>■ onkeydown</li><li>■ onkeyup</li><li>■ onload</li><li>■ onmousedown</li><li>■ onmouseup</li><li>■ onmouseout</li><li>■ onmouseover</li><li>■ onmouseup</li><li>■ onresize</li><li>■ onselect</li><li>■ onsubmit</li><li>■ ...</li></ul></div><div data-bbox="691 607 842 621" data-label="Text"><p><a href="http://www.w3schools.com/jsref/jsref_events.asp">http://www.w3schools.com/jsref/jsref_events.asp</a></p></div><div data-bbox="960 625 974 635" data-label="Text"><p>14</p></div><div data-bbox="38 725 167 752" data-label="Section-Header"><h2>CSS Properties</h2></div><div data-bbox="39 771 108 801" data-label="List-Group"><ul><li>■ className</li><li>■ style</li></ul></div><div data-bbox="39 820 226 838" data-label="Text"><p><a href="http://codepunk.hardwar.org.uk/css2js.htm">http://codepunk.hardwar.org.uk/css2js.htm</a></p></div><div data-bbox="297 955 310 967" data-label="Text"><p>15</p></div><div data-bbox="367 725 411 750" data-label="Section-Header"><h2>blink</h2></div><div data-bbox="367 771 600 920" data-label="Text"><pre>function blinker()
{
    var blinks = document.getElementsByName("blink");
    for (var i = 0; i &lt; blinks.length; i++)
    {
        if (blinks[i].style.visibility == "visible")
            blinks[i].style.visibility = "hidden";
        else
            blinks[i].style.visibility = "visible";
    }
}</pre></div><div data-bbox="625 955 639 967" data-label="Text"><p>16</p></div><div data-bbox="691 725 832 752" data-label="Section-Header"><h2>YUI Event Utility</h2></div><div data-bbox="691 771 956 812" data-label="Text"><pre>YAHOO.util.Event.addListener(window, "load", function() {
    window.setInterval("blinker()", 500);
});</pre></div><div data-bbox="691 840 865 858" data-label="Text"><p><a href="http://developer.yahoo.com/yui/event/">http://developer.yahoo.com/yui/event/</a></p></div><div data-bbox="960 955 974 967" data-label="Text"><p>17</p></div>
```

Libraries

- Dojo
<http://dojotoolkit.org/>
- Ext JS
<http://extjs.com/>
- jQuery
<http://jquery.com/>
- MooTools
<http://mootools.net/>
- Prototype
<http://www.prototypejs.org/>
- script.aculo.us
<http://script.aculo.us/>
- YUI
<http://developer.yahoo.com/yui/>
- ...

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Quirks

<http://www.quirksmode.org/js/contents.html>

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Static Code Analysis

<http://www.jshint.com/>

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Debuggers

- FireBug
<https://addons.mozilla.org/en-US/firefox/addon/1843>
- JavaScript Debugger
<https://addons.mozilla.org/en-US/firefox/addon/216>

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Compressors

- JSMIn
<http://javascript.crockford.com/jsmin.html>
- packer
<http://dean.edwards.name/packer/>
- ShrinkSafe
<http://dojotoolkit.org/docs/shrinksafe>
- YUI Compressor
<http://developer.yahoo.com/yui/compressor/>

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