

Computer Science 50
Introduction to Computer Science I
Harvard College

Week 9

David J. Malan
malan@post.harvard.edu

0



Image from <http://members.memlane.com/gromboug/P16MvSig.htm>.

1



Image from <http://members.memlane.com/gromboug/P16MvSig.htm>.

2

Mispellings

```
$dictionary[$word] = TRUE;
```

3

RSS

```
http://cyber.law.harvard.edu/rss/rss.html
```



Image from wikipedia.org.

4

RSS

```
<?xml version="1.0" encoding="UTF-8"?>  
<rss version="2.0">  
  <channel>  
    <title></title>  
    <description></description>  
    <link></link>  
    <item>  
      <guid></guid>  
      <title></title>  
      <link></link>  
      <description></description>  
      <category></category>  
      <pubDate></pubDate>  
    </item>  
    [...]   
  </channel>  
</rss>
```

5

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/>

6

JavaScript

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

7

JavaScript

```
<script src="file.js" type="text/javascript"></script>
```

8

Statements

```
:: break
:: const
:: continue
:: do ... while
:: for
:: for ... in
:: for each ... in
:: function
:: if ... else
:: return
:: switch
:: throw
:: try ... catch
:: var
:: while
:: with
:: ...
```

http://developer.mozilla.org/en/docs/Core_JavaScript_1.5_Reference#Statements

9

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="625 284 642 296" data-label="Text"><p>10</p></div><div data-bbox="783 49 866 73" data-label="Section-Header"><h2>focus ()</h2></div><div data-bbox="691 107 863 274" data-label="Text"><pre>&lt;script type="text/javascript"&gt;
// <![CDATA[
// get fields
var username = document.getElementById("username");
var password = document.getElementById("password");

// put cursor in username field if empty
if (username.value == "")
{
    username.focus();
    username.value = username.value;
}

// else put cursor in password field
else
{
    password.focus();
    password.value = password.value;
}
// ]]&gt;</pre></div><div data-bbox="960 284 977 296" data-label="Text"><p>11</p></div><div data-bbox="127 382 211 406" data-label="Section-Header"><h2>Validation</h2></div><div data-bbox="113 448 223 536" 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="113 448 223 536"/></div><div data-bbox="298 615 314 628" data-label="Text"><p>12</p></div><div data-bbox="412 382 583 409" data-label="Section-Header"><h2>Regular Expressions</h2></div><div data-bbox="367 442 623 530" data-label="Text"><pre>:: RegExp
<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>
:: String
<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>

<a href="http://www.w3schools.com/jsref/jsref_obj_regexp.asp">http://www.w3schools.com/jsref/jsref_obj_regexp.asp</a></pre></div><div data-bbox="625 615 642 628" data-label="Text"><p>13</p></div><div data-bbox="761 382 892 409" data-label="Section-Header"><h2>Global Objects</h2></div><div data-bbox="691 440 946 586" data-label="Text"><pre>:: Array
:: Boolean
:: Date
:: Function
:: Math
:: Number
:: Object
:: RegExp
:: String
:: ...

<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></pre></div><div data-bbox="960 615 977 628" data-label="Text"><p>14</p></div><div data-bbox="136 714 203 740" data-label="Section-Header"><h2>Objects</h2></div><div data-bbox="39 771 188 877" 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="298 946 314 961" data-label="Text"><p>15</p></div><div data-bbox="467 714 527 740" data-label="Section-Header"><h2>Arrays</h2></div><div data-bbox="367 771 487 861" data-label="Text"><pre>var a = new Array();
var a = [];

a[0] = "foo";
a[1] = "bar";
a[2] = "baz";</pre></div><div data-bbox="625 946 642 961" data-label="Text"><p>16</p></div><div data-bbox="793 714 858 740" data-label="Section-Header"><h2>Arrays</h2></div><div data-bbox="691 771 817 861" 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="960 946 977 961" data-label="Text"><p>17</p></div>
```

Event Handlers

```

:: onblur
:: onchange
:: onclick
:: onfocus
:: onkeydown
:: onkeyup
:: onload
:: onmousedown
:: onmouseup
:: onmouseover
:: onmouseout
:: onmouseover
:: onmouseover
:: onresize
:: onselect
:: onsubmit
:: ...

http://www.w3schools.com/jsref/jsref_events.asp

```

18

CSS Properties

```

:: className
:: style

http://codepunk.hardwar.org.uk/css2js.htm

```

19

blink

```

function blinker()
{
    var blinks = document.getElementsByName("blink");
    for (var i = 0; i < blinks.length; i++)
    {
        if (blinks[i].style.visibility == "visible")
            blinks[i].style.visibility = "hidden";
        else
            blinks[i].style.visibility = "visible";
    }
}

```

20

Debuggers

```

:: FireBug
https://addons.mozilla.org/en-US/firefox/addon/1843

:: Firefox plus DOM Inspector
http://www.mozilla.com/firefox/

:: JavaScript Debugger
https://addons.mozilla.org/en-US/firefox/addon/216

```

21

DOM

```

<!DOCTYPE html PUBLIC
"-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>My title</title>
</head>
<body>
<a href="">My link</a>
<h1>My header</h1>
</html>

```

22

DOM

```

<!DOCTYPE html PUBLIC
"-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>My title</title>
</head>
<body>
<a href="">My link</a>
<h1>My header</h1>
</html>

```

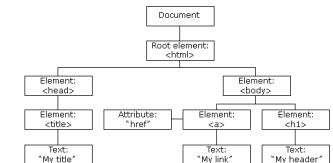


Image from <http://www.w3schools.com/html/dom/>

23

XMLHttpRequest

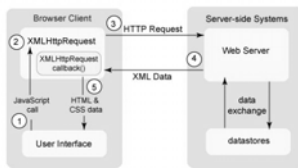


Image from <http://java.sun.com/javase/6/javase/tutorial/xml/ajaxSequence.jsp>

24

Methods

```

:: abort()
:: getAllResponseHeaders()
:: getResponseHeader(header)
:: open(method, url)
:: open(method, url, async)
:: open(method, url, async, user)
:: open(method, url, async, user, password)
:: send()
:: send(data)
:: setRequestHeader(header, value)

```

25

Properties

```

:: onreadystatechange
:: readyState
:: 0 (uninitialized)
:: 1 (open)
:: 2 (sent)
:: 3 (receiving)
:: 4 (loaded)
:: responseBody
:: responseText
:: responseXML
:: status
:: 200 (OK)
:: 404 (Not Found)
:: 500 (Internal Server Error)
:: ...
:: statusText

```

26

Computer Science 50

Introduction to Computer Science I

Harvard College

Week 9

David J. Malan
malan@post.harvard.edu