

New Media Production

Lecture 7

- Javascript

Javascript

Javascript and Java have almost nothing in common.

Netscape developed a scripting language called LiveScript. When Sun developed Java, and wanted Netscape to support it in Netscape Navigator. Netscape then took advantage of all the press that Java was receiving, and called there client-side scripting JavaScript.

Microsoft saw the popularity of Javascript, and then created there own version for Internet Explorer called Jscript. It works much the same way, but not exactly the same.

What Javascript Can Do

Can create a more interactive web experience.

Highlight buttons when the user moves the mouse over a button.

Can make sure users enter valid information in a web form.

Javascript can do calculations on the client-side, such as dates, numbers, and conversions.

Has the ability to create custom HTML pages on the fly, based on the actions a user takes.

Javascript can detect which web browser is being used.

What Javascript Can Not Do

JavaScript does not allow the reading or writing of files on the client machine. Prevents dangerous code from interacting with your hard disk, or from writing viruses on to your computer, or from manipulating your personal file.

JavaScript does not allow the reading or writing of files on a server machine. (such as a page counts) That would need to be done with a CGI script.

JavaScript can not close a window it has not opened.

JavaScript cannot read information from an opened Web page that came from another server. It can not get information about where you have been surfing.

Object-Oriented

JavaScript is an **Object-Oriented** language.

Objects:

An object is a thing. A cat, a computer and a bicycle are objects in the world. To JavaScript, there are objects it deals with in web browsers, such as windows, and forms, and the elements of the form, such as buttons and checkboxes.

Because you can have more than one cat, or more than one window, it makes sense to give them names.

Properties

Objects have **properties**.

A cat has fur, the computer a keyboard, and the bicycle has wheels.

In JavaScript, a window has a title, and a form can have a checkbox.

Changing a property of an object can modify the object, and the same property can apply to completely different objects.

Example: a property called empty. You can use empty where ever it applies. A cat's stomach is empty, and the cat's bowl is empty.

Note that the computer's keyboard is not only properties, but also objects in their own right, which can have their own properties.

Methods

Things that objects can do are called **methods**.

Cats purr, computers crash, and bicycles roll.

JavaScript objects also have methods:

buttons `click()`,

windows `open()`, and text can be `selected()`.

* Think of objects and properties as nouns, and methods as verbs. The nouns are things, and methods are actions that those things can do, or have done to them.

Dot Syntax

Putting together objects, properties, and methods to get a better description of an object, or to describe a process.

In JavaScript these are separated by periods. (also known as dots) - **Dot Syntax**

Examples:

bicycle.wheels

cat.paws.front.left

document.images.name

window.status

Examples of objects and methods in dot syntax:

cat.purr()

document.write()

forms.elements.radio.click()

Handling Events

Events are actions that the user performs while visiting your page. Submitting a form and moving a mouse over an image are two examples.

JavaScript deals with events using commands called **event handlers**.

For example: our cat handles the event **onPetting** by performing the actions **purr** and **stretch**.

If the user clicks on a button, the `onClick` event handler will take note of the action and perform whatever duties it was assigned.

Event Handlers

Event

onAbort

onBlur

onChange

onClick

onError

onFocus

onLoad

onmouseover

onmouseout

onSelect

onSubmit

onUnload

What It Handles

The user aborted loading the page

The user left the object

The user changed the object

The user clicked on an object

The script encountered an error

The user made an object active

The object finished loading

The cursor moved over an object

The cursor moved off an object

The user selected the contents of an object

The user submitted a form

The user left the window

```
<html>
  <head>
    <title>JavaScript Hello World</title>
  </head>
<body>

  <h1>

    <script langauge="Javascript" type="text/javascript">

      /* this is a comment in javascript - automatic script*/

      document.write("Hello, world!")

    </script>

  </h1>

</body>
</html>
```

```
<html>
  <head>
    <title>JavaScript Date</title>
  </head>
<body>

<h1>
<script language="Javascript" type="text/javascript">

/* this is a comment in javascript - automatic script*/

    document.write(Date())
</script>

</h1>

</body>
</html>
```

```
<html>
  <head>
    <title>JavaScript OnClick Time</title>
  </head>
<body>

<!--triggering a script -->

<p>What
<a href="time.html" onClick="alert('Today is
'+Date())">
time</a> is it?</a></p>

</body>
</html>
```

- Javascript

- Rollovers - cached images
- Pop Up Windows
- Browser detection
- Slide Show
- Random Images
- Email Validation

Linking to an External Script

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

Placed in the head of the document.

Rollovers - Images Cached (Place this code in the head)

```
<script type="text/javascript" language="javascript">  
off1 = new Image(206,300)  
    off1.src = "images/a1off.jpg"  
on1 = new Image(206,300)  
    on1.src = "images/a1on.jpg"  
</script>
```


Rollovers - Images Cached (Place this code in the body)

```
<a href="http://www.robertspahr.com"  
onmouseover="document.robpic.src=on1.src"  
onmouseout="document.robpic.src=off1.src">
```

```
  
</a>
```

Lab Exercise

Creating a rollover image using javascript

Create a second rollover image using CSS

- view the example linked off the syllabus

Pop Up Windows

```
<a href="javascript:location='popup.html';  
window.open('pop1.html', 'popUp',  
'height=300, width=400, scrollbars=yes,  
status=yes,')">Pop Up window</a>
```

Back and Close Window

Back:

```
<a href="javascript: history.go(-1)">&lt;&lt; Back</a>
```

Close Window:

```
<a href=javascript>window.close(1)>Close Window</a>
```

Lab Exercise

Creating a Pop Up Window

Browser Detection

```
<script type="text/javascript" language="javascript">  
<!-- Hide script from old browsers
```

```
if (navigator.appName == "Netscape") {  
    document.write("You're running a Netscape browser")  
  
}  
else {  
    if (navigator.appName == "Microsoft Internet Explorer") {  
        document.write("You're running Internet Explorer")  
  
    }  
    else {  
        document.write("Not running Netscape or I.E.,  
thanks for thinking different!")  
    }  
}
```

```
// End hiding script from old browsers -->  
</script>
```

Slide Show - part 1

```
<script language="Javascript" type="text/javascript">  
<!-- Hide script from old browsers
```

```
    myPix = new  
Array("images/cruft1.jpg","images/cruft2.jpg","images/cruft3.jpg","images/cruft4.jpg","i  
images/cruft5.jpg","images/cruft6.jpg")
```

```
    thisPic = 0  
    imgCt = myPix.length - 1
```

```
function chgSlide(direction) {  
    if (document.images) {  
        thisPic = thisPic + direction  
        if (thisPic > imgCt) {  
            thisPic = 0  
        }  
        if (thisPic < 0) {  
            thisPic = imgCt  
        }  
        document.myPicture.src=myPix[thisPic]  
    }  
}
```

```
}  
// End hiding script from old browsers -->  
</script>
```


Lab Exercise

Creating a Slide Show

Random Images

```
<script language="JavaScript">
//Random Images and Links
function random_imglink(){
var randomImages=new Array()

//specify random images You can have as many as you wish
randomImages[1]="images/cruft1_thumb.jpg"
randomImages[2]="images/cruft2_thumb.jpg"

//specify corresponding links below
var imagelinks=new Array()
imagelinks[1]="cruft1.html"
imagelinks[2]="cruft2.html"

var num=Math.floor(Math.random()*randomImages.length)
if (num==0)
num=1
document.write('<a href='+'''+imagelinks[num]+'''+'><img
src='''+randomImages[num]+''' border=0></a>')
}
random_imglink()
</script>
```

Lab Exercise

Creating a Random Images

Email Validation - 1 of 3

```
<script language="Javascript" type="text/javascript">
    function validEmail(email) {
        invalidChars = " /:;";

        if (email == "") {
            return false
        }
        for (i=0; i<invalidChars.length; i++) {
            badChar = invalidChars.charAt(i)
            if (email.indexOf(badChar,0) > -1) {
                return false
            }
        }
        atPos = email.indexOf("@",1)
        if (atPos == -1) {
            return false
        }
        if (email.indexOf("@",atPos+1) > -1) {
            return false
        }
        periodPos = email.indexOf(".",atPos)
        if (periodPos == -1) {
            return false
        }
        if (periodPos+3 > email.length) {
            return false
        }
        return true
    }
}
```

Email Validation - 2 of 3

```
function submitIt(carForm) {  
    if (!  
validEmail(carForm.emailAddr.value)) {  
        alert("Invalid email address")  
        carForm.emailAddr.focus()  
        carForm.emailAddr.select()  
        return false  
    }  
    return true  
}  
  
// End hiding script -->  
</script>
```

