

Unobtrusive JavaScript with Asp.Net & JQuery

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Before We Get Started

- DemoWare Disclaimer
- Using a Different JavaScript Library?
 - Let's not get into a Library war. If you are using a different library and you are happy with it, Good!!!
- Have Your own Custom Library
 - Just Stop!! Pick an existing library and stick with it. If it doesn't do something exactly the way you want, customize and contribute to the community.



Topics to Cover

- Unobtrusive JavaScript (UJS) & Progressive Enhancement
 - What, Why, & How
- JQuery
 - DOM Element Selectors
 - Event Handling
 - HTML Manipulation and Traversal
 - AJAX
- JQuery & UJS in a WebForm apps



What is Unobtrusive JavaScript

- Style of JavaScript Programming that allows you to add behavior to websites in a progressive fashion
- A subset of Progressive Enhancement Web Site Architecture
 - Includes UJS
 - CSS
 - Semantic HTML



Principles of Unobtrusive JavaScript

- Separation of behavior from HTML
- Make No Assumptions about the browser's capability and user preferences
- Progressive Enhancement
 - Build site for least functionality, progressively add style and functionality
- Following W3C Standards



The Bad Old Days

- Only Layout options were tables
- All formatting had to be inline with font tags or element attributes
- Behavior was inline with each element
- Html was used for style, structure, and behavior



Moving To Semantic Markup

- Use HTML to describe the semantic meaning and relationship of your content
 - Using Html to describe visual appearance

```
<br><br>  
<b><font size="2">Widget X</font></b>  
<br><br>  
<font size="1">Widget X is the greatest things  
since sliced bread.</font>
```



Semantic Style

```
<div id="widgetXContainter">
```

```
  <h3>Widget X</h3>
```

```
  <p>Widget X is the greatest things since  
    sliced bread.
```

```
  </p>
```

```
</div>
```



Progressive Enhancement

- Similar Concept to Grace Degradation except in reverse
- Start by building your page to work on the lowest common denominator and build up to more capable browsers
- No JavaScript
- No CSS



UJS allows for Progressive Enhancement

- No in-line event handlers
- All code is contained in external .js files
- The site remains usable without JavaScript
- Existing links, buttons and forms are repurposed when JavaScript is available
- JavaScript dependent elements are dynamically added to the page



Why follow UJS Principles

- Allows for the broadest possible audience
 - More and More people access web sites through mobile browsers
 - Each have different JavaScript & CSS functionality



Mobile Browsers

Default browsers used by major mobile phone and PDA vendors

- **Android** (mobile phone platform) by Google (based on WebKit)
- BlackBerry Browser by Research in Motion (proprietary)
- Blazer by Palm, installed on all newer Palm Treos and PDAs (based on NetFront).
- **Danger browser** by Danger (proprietary), installed on all Danger-designed devices including the T-Mobile Sidekick.
- **Embider** by Infraware^[4] [\[4\]](#) (proprietary).
- Internet Explorer Mobile by Microsoft Inc. (browser engine history unknown).
- **Iris Browser** by Torch Mobile Inc. for Linux/Qt and Windows Mobile (based on WebKit).
- **jB5 Mobile Browser** by Jataayu Software, available on Symbian Series 60, Windows Mobile and Linux Platforms
- Symphony on MOTOMAGX by Motorola (based on WebKit).
- NetFront by ACCESS Co., Ltd. (proprietary).
- Nokia Series 40 Browser by Nokia (proprietary).
- **Novarra nWeb** (proprietary).
- Obigo Browser by Obigo AB (Sweden), 100% owned by Teleca AB (proprietary).
- Openwave Mobile Browser by Purple Labs (newly aquired from Openwave) (proprietary).
- Opera Mobile by Opera Software ASA (Norway). - Capable of reading HTML and reformat for small screens (proprietary).
- **Picisel Browser** by Picisel Technologies (Scotland) (proprietary).
- PlayStation Portable web browser by Sony (based on NetFront).
- Safari by Apple Inc on iPhone and iPod Touch (based on WebKit).
- **Wapaka Browser** Java micro-browser by Digital Airways.
- Web Browser for S60 by Nokia (based on WebKit).

User-installable microbrowsers

[\[edit\]](#)

- **Bluelark** Bluelark bought by Handspring Inc.
- Deepfish Beta from Microsoft, proxy-rendering browser.
- Doris by Anygraaf Oy (Vantaa, Finland)
- iPanel for Palm OS.
- **jB5 Mobile Browser** Beta from Jataayu Software.
- JOCA by InteracTIV, another proxy-rendering free software.
- Minimo by Mozilla Foundation (based on Gecko).
- Opera Mini by Opera Software - supports most features of stand-alone Opera, but can run on less capable phones by offloading memory-intensive rendering to proxy server (based on Opera Mobile running on a server).
- Opera Mobile by Opera Software - supports all modern web standards supported by desktop browsers, including XHTML, CSS2 and Ajax. Has advanced Small Screen Rendering that adapts regular pages to small screen (proprietary).
- Pico by Sun Microsystems (Pico acquired by Sun July 2003)
- **PocketWeb** by tlogic.de (Heidelberg, Germany) [Official product page](#) [\[5\]](#)
- **RocketBrowser** Rocket Mobile, Inc. (Silicon Valley, CA).
- **SAS**
- Skyfire Open Beta by SkyFire Labs. Supports Flash and Ajax and allows full functionality PC web experience.
- Stanford **Power Browser** created in Stanford's InfoLab [\[5\]](#) [\[5\]](#)
- **TeaShark** - a free Java-based browser with a desktop-like layout [\[6\]](#) [\[6\]](#)
- ThunderHawk by Bitstream Inc. (Cambridge, MA)
- UCWEB by UCWEB Technology
- **Universe** by OpenMobi Systems
- **Webby Mobile** by AnOriginalIdea
- **WebViewer** - a free Java based browser by Requirless
- WinWAP by **Winwap Technologies** [Official product page](#) [\[6\]](#)
- Links2 on the Playstation Portable (requires custom firmware)

Why follow UJS Principles

- Faster Page Loads
 - Caching of CSS and JavaScript
 - Faster processing of HTML
- Easier to Maintain and Enhance Website
 - Changing behavior for large set of events
 - Changing Layout



Obtrusive JavaScript

- Have you read our
`<a href="javascript:window.open(
 'terms.html',
 'popup',
 'height=500,width=400,toolbar=no');">
terms and conditions`



Converted to Unobtrusive

- HTML
 - Have you read our[terms and conditions](terms.html)
- CSS
 - CSS class sidenote
- JavaScript
 - Event Handler for the click event in a separate



jQuery

- JavaScript library to help perform common and / or difficult client-side tasks
- Advantages
 - Cross Browser
 - Light-weight
 - Easy DOM selection & manipulation
 - Pluggable architecture keeps file size down and easily extensible



Functions

- **Named**

```
var doSomething = function(arg1,arg2){  
    //code goes here  
}
```

- **Inline or Anonymous**

```
function(){//code goes here}
```



Callbacks

- A Callback is a parameter to a function that points to another function
 - It can be a named function or an anonymous function
 - Example, click handler:

```
$( 'a' ).click(function(){//click logic goes here})  
$( 'a' ).click(clickFunction);
```



Objects

- Named

```
function UserObject(param){  
    this.param1 = param;  
}  
var userObj = new UserObject('x');
```

- Anonymous

- Open and closed with brackets, properties defined with : and separated with ,
- {property1: “value”,
 property2: 123,
 function1: function(){}}//or the name of
 //a function
}



jQuery Object

`jQuery('selector')` or `$("selector")`

- Returns a jQuery object with an array or selected elements and helper methods.
- When we perform an action on the jQuery object, it will be performed on all DOM Elements encapsulated in it.



jQuery

Anatomy of a jQuery Page

```
<head>
```

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

 — Include the jquery file

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

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

 — The "ready event" (Binds a function to be executed whenever the DOM is ready)

This part can be written in an external .js file.

```
$(".button").click(function(){  
    $("#panel").slideDown("slow");  
});
```

Where do you want to bind the function?
It can be CSS class, ID, Selectors (ie. DIV, H1, A, P, LI...)

This function will be triggered when an element with class="button" is clicked

What would like to do with #panel?
In this case, slide it down with "slow" speed.

Where do you want to apply this function?
In this case, it is the element with id="panel"

```
});
```

```
</script>
```

```
</head>
```

```
$("#panel")
```

The quotation marks can be either single or double.
ie. ("class") or ('.class')

Starting Code When the Page is loaded

- Standard approach
 - `document.onload`
 - Does Not fire until entire page is loaded, including images
- With jQuery
 - `$(document).ready(function);`
 - shortcut method:
 - `$(function);`
 - Function parameter can be either a named function or a anonymous function

```
$(document).ready(function(){  
    //Your Code Goes Here  
});
```



Selectors

- Supports most CSS 1-3 selectors and xquery selectors
 - Simple Examples:
 - Select all elements: `$('*')`
 - Select all div elements: `$('div')`
 - Select element by id: `$('#id')`
 - Select all elements with class: `$('.class')`
 - Select a List of elements: `$('h1,h2,h3')` //there is an easier way



Hierarchy Selectors

- Ancestor Descendant Selectors
 - Select all paragraphs inside and element
`$('#wrapper p')`
 - Select all input elements on a form
 - `$('#myform input')`
- Parent Child Selectors
 - Find all child elements of a selector
 - `$('#element > *')`
- Previous / Next Selectors
 - Find all inputs that are next to a label
 - `$('label + input')`



Pseudo Class Filters

- Convenience selectors modeled after CSS pseudo selectors
 - :first
 - :even
 - :eq(index)
 - :header
 - :last
 - :odd
 - :gt(index)
 - :hidden
 - :lt(index)
 - :visible



Attribute Filters

- Filtering elements based on values of their attributes
 - find input with name attribute = value
 - `$('input[name=??]')` –
 - Find anchor tags that start with mailto:
 - `$('a[href^=mailto]')`
 - Find anchor tags that end with 'pdf'
 - `$('a[href$=pdf]')`



Traversing

- The jQuery object has a list of dom elements,
- Several helper methods are available when you need to find or modify the elements selected.
 - find(selector)
 - filter(selector)
 - children(selector)
 - `$('div').children().addClass('class');`



Manipulation

- Changing Contents
 - All manipulation methods have an overload that sets the value
 - `Html()`
 - `Text()`
 - `Val()` – form fields
- Insert Inside, Outside, and Around selected elements
- Replace and Remove Contents of selected elements



CSS

- **Get the Style Property**
 - `$('abc').css('style-name');`
 - `$('abc').css('style-name', value);`
 - `$('abc').css({ backgroundColor: 'green', color: 'blue' });`
- **Positioning, Height & Width**
 - `$('abc').offset()`
 - Returns object with left & top properties
- **Adding and Removing css classes**
 - `$('abc').addClass('class-name');`
 - `$('abc').removeClass('class-name');`
 - `$('abc').toggleClass('class-name');`



Events

- Can attach events and trigger events
- Use bind() method to bind to any event
- Helper methods
 - Click(function) change(function)
 - Mouse events
- Interaction event handlers
 - Hover(mouseover, mouseout)
 - Toggle(fn1,fn2,...)



Effects

- Simple methods to show, hide and simple visual effects
 - `show()`, `show('fast' | 'slow')`
 - `hide()`, `hide('fast' | 'slow')`
 - `toggle()`;
- Similar functions to fade in/out, slide in/out
- Custom animations
- More effects in the jQuery.UI library



Ajax

- Provides a base ajax method and several specialized methods
 - `$.ajax(options)`
 - `$.ajax({type:'post',url:'remote.aspx'})`
 - `$.get(url,data,callback);`
 - `$.post(url,data,callback);`
 - `$.load(url,data,callback);` //loads html
 - `$.getJSON(url,data,callback);`

