




**FULL SAIL**  
UNIVERSITY

# scripting for web applications



# 2

# jQuery plugin development

# PWA-2 DUE Dates

Item	Due Dates
Branding / Logo	11/25/13 - After Lab on the First Day
Project Pitch	12/02/13 - Before Lecture 2
Creative Brief - Finished Document	12/4/13 - Before Lecture 3
Site Prototype (html/css)	12/09/13 - Before Lecture 5
Development Milestone (javascript)	12/13/13 - Due End of Lab 7
Inclusion of 5 media center items	12/20/13 - Last Day of Class After Lab
Aesthetics & Usability (finished site)	12/20/13 - Last Day of Class After Lab
Functionality (finished site)	12/20/13 - Last Day of Class After Lab
Professionalism	The duration of the course
Class Participation	The duration of the course

# things to keep in mind

- ▶ If you need a method and can't remember how it works, you have tools:
  - ▶ ***The cheat-sheet***
  - ▶ *Official documentation:* ***api.jquery.com***  
***dochub.io***
- ▶ We haven't looked at all of the *utility methods*, because we haven't needed most of them yet. Remember that they exist, and read up on them when you can.
- ▶ Today we are going to start some plugin development, and we'll see some utility methods as a result.

# Some jQuery Plugins Resources

Website	Description
<a href="http://harvesthq.github.com/chosen/">harvesthq.github.com/chosen/</a>	Dropdown selects with autocompleter
<a href="http://jamielottering.github.com/DropKick/">jamielottering.github.com/DropKick/</a>	Themed dropdown selects
<a href="http://christophercliff.github.com/sausage/">christophercliff.github.com/sausage/</a>	Page anchoring generator
<a href="http://craigsworks.com/projects/qtip2/">craigsworks.com/projects/qtip2/</a>	Advanced tooltips
<a href="http://danpalmer.me/jquery-complexify">danpalmer.me/jquery-complexify</a>	Password strength meter
<a href="http://fancybox.net/">fancybox.net/</a>	Easy modal lightboxes
<a href="http://www.zurb.com/playground/reveal-modal-plugin">www.zurb.com/playground/reveal-modal-plugin</a>	Simple modal
<a href="http://projects.nickstakenburg.com/lightview">projects.nickstakenburg.com/lightview</a>	Another modal plugin
<a href="http://needim.github.com/noty/">needim.github.com/noty/</a>	Notification popups
<a href="http://isotope.metafizzy.co/">isotope.metafizzy.co/</a>	Grid re-arranger
<a href="http://podio.github.com/jquery-mentions-input/">podio.github.com/jquery-mentions-input/</a>	Twitter Style Autocompleter
<a href="http://twitter.github.com/bootstrap/">twitter.github.com/bootstrap/</a>	HTML/CSS/JS Boilerplate by Twitter
<a href="http://nicolahibbert.com/demo/liteAccordion/">nicolahibbert.com/demo/liteAccordion/</a>	Horizontal accordion
<a href="http://github.com/mathiasbynens/jquery-placeholder">github.com/mathiasbynens/jquery-placeholder</a>	Input Placeholder Plugin
<a href="http://jamesflorentino.com/jquery.nanoscroller/">jamesflorentino.com/jquery.nanoscroller/</a>	Custom Scrollbar
<a href="http://demo.mobiscroll.com/">demo.mobiscroll.com/</a>	Date and time picker (phone styled)

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# Plugin Development

- ▶ Start building your own collection of re-usable code. Whenever you tackle a feature that could have use in other applications, try to build it more dynamically.
- ▶ Benefits of plugins:
  - ▶ Smaller application code
  - ▶ Abstraction: less clutter of variables in scopes
  - ▶ Re-usability
  - ▶ Dynamic: forces you to tackle a solution dynamically

# Naming Practices

- ▶ Best practices for plugin filenames:
  - ▶ *all lowercase*
    - ▶ *framework - first*
    - ▶ *plugin name - second*
    - ▶ *versioning - third*

jquery.jacc.l.6.js

jquery.easing.min.l.3.js



# Compatibility

- ▶ Next, we should make sure our plugin will work even if the page has multiple javascript libraries included.
  - ▶ *Keep in mind that Prototype and Mootools also use \$ dollar sign as functions.*
- ▶ (Excluding plugin development for a second...) When working on a site that is using Prototype or Mootools.. good old jQuery gives a compatibility function:

`$.noConflict( )`

jQuery backs up a save of the \$ name before installing itself. By calling this method, jQuery reverts the \$ global to whatever it was before.

- ▶ So, make sure jQuery is included after any other libraries, and then call this method.

# Compatibility

- ▶ noConflict is not a magic wand, we can no longer use \$, we'd have to use the jQuery global instead.

`jQuery.ajax( )`

*instead of*

`$.ajax( )`

- ▶ This is the same problem with plugins, we can't assume that \$ means jQuery.
- ▶ So, we need to create a privatized version of \$. And how can we create private scopes? **A closure.**



# Compatibility

- ▶ Here's a reminder of the self-executing function closure:

```
( function(){} )();
```

- ▶ And here's how we can use it to privatize the \$ name

```
(function($){  
    // privatized $ scope  
})(jQuery);
```

# Plugin Type

- ▶ Next we need to consider what type of plugin we want to build.

## *Utility Methods*

```
$.plugin( options )
```

- ▶ These are called directly from the jQuery object, and usually do not involve any targeting of DOM elements.

## *Factory Methods*

```
$(target).plugin( options )
```

- ▶ These allow us to use the factory to make a DOM selection, and then manipulate them.

# Utility Plugins

- These methods are assigned directly to the jQuery namespace

## *Template*

```
(function($) {  
    $.myplugin = function(options) {  
        // plugin code  
    };  
})(jQuery);
```

# Factory Plugins

- ▶ In order to gain access to the factory, these are created on a **fn** object of the jQuery namespace.
- ▶ Inside our plugin function, the context **this** becomes the jQuery factory of DOM elements.

*Template*

```
(function($) {  
    $.fn.myplugin = function(options) {  
        // plugin code  
        console.log(this);  
    };  
})(jQuery);
```

```
$("div").myplugin();
```

# .each()

- ▶ This utility method allows us to loop through the elements in a factory set, using a function.

`$(target).each( fn )`

*function:* is run once per element in the set (like a loop)

- ▶ The provided function will receive 2 arguments, and it will also gain **context** to each element in the set

```
$( ".myclass" ).each( function(i, elem) {  
    console.log(this);  
} );
```

# Factory Plugins

- ▶ Since our context **this** is the factory set, we can loop through those elements using jQuery's `.each` method.
- ▶ Finally, to make our plugin *chainable*, it needs to return jQuery, so let's combine...

## *Template*

```
(function($) {  
    $.fn.plugin = function(options) {  
        return this.each(function() {  
            // plugin code  
        });  
    };  
})(jQuery);
```



# Plugin Options

- ▶ The last thing our plugin need is to define a set of default options.
- ▶ For example, let's say our plugin has 5 options, but the user only passes in 2

```
$( "div" ).plugin({  
    opt1: true,  
    opt4: true  
});
```

```
opt1: boolean  
opt2: boolean  
opt3: boolean  
opt4: boolean  
opt5: boolean
```

- ▶ We need a way to set up default values for opt2, opt3, & opt5

# Plugin Options

`$.extend({}, injector, original )`

*injector*: object of new properties

*original*: object to inject into

- ▶ Extend allows us to provide an object and add properties into it. Any properties that the original object already has are not added. A new object is then returned.

```
var obj = {opt1: true, opt2: true};
```

```
obj = $.extend({  
  opt1: false,  
  opt2: false,  
  opt3: false,  
  opt4: false  
, obj);
```

=

```
{  
  opt1: true,  
  opt2: true,  
  opt3: false,  
  opt4: false  
}
```

# Factory Plugin Template

- ▶ Here's our general starting template for any factory plugin

```
(function($) {  
    $.fn.myplugin = function(options) {  
        options = $.extend({  
            // default properties here  
        }, options);  
        return this.each(function() {  
            // plugin code  
        });  
    };  
})(jQuery);
```



## Lab 7 *(DUE today, after Lab)* *lab begins 1 hr after lecture ends*

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### ❖ **Next Milestone:** Developement Milestone

- ❖ Login / Logout should both work
- ❖ Logging in changes the page to the App UI
- ❖ Logging out changes the page to the Landing UI
- ❖ App UI loads all necessary content to ***fill the page*** (a list of projects or tasks)
- ❖ New user registration should be working (*and should log the user in automatically*)
- ❖ ***lastname\_firstname\_development.zip***