

jQuery: Ajax Made Easy

Nathaniel T. Schutta

Who am I?

- Nathaniel T. Schutta
<http://www.ntschutta.com/jat/>
- @ntschutta
- Foundations of Ajax & Pro Ajax and Java Frameworks
- UI guy
- Author, speaker, teacher
- More than a couple of web apps

The Plan

- Why a library?
- Pros and cons.
- Ajax made easy.
- CSS selectors.
- Events.
- Animations and effects.
- Widgets.

Use a library.

Not using one?

Probably doing it wrong.

Ajax isn't rocket surgery.

But...doesn't mean we
should go it alone.

Several high quality
libraries to pick from.

Paradox of choice.

Most server side agnostic.

Things have improved
since the 90s!

We still have browser
issues to deal with.

<cough>IE 6.</cough>

IE 6...on the way out?

SharePoint 2010 - no IE 6.

<http://blogs.msdn.com/sharepoint/archive/2009/05/07/announcing-sharepoint-server-2010-preliminary-system-requirements.aspx>

Google Apps...sorry IE 6.

<http://googledocs.blogspot.com/2010/01/web-browser-support-for-docs-and-sites.html>

Libraries abstract some
of that away.

VM as it were.

Libraries = leverage.

Most have:

XHR wrapper.

CSS selectors.

Event handling.

Widgets, effects, animations.

JavaScript utilities.

How do you choose?

Many work well together.

Ask yourself...

What do you want?

Widgets? Complete
environment? Utilities?

Can you read the code?

May need to from
time to time.

How's the docu?

What does Google return?

What is the community like?

When was the last update?

Can you get help?

Have to play with them.

Libraries have “flavors.”

Do you like the
library's style?

Does it solve
YOUR problems?

Why jQuery?

Small.

Readable code.

Feature packed: XHR,
CSS selectors, etc.

Excellent documentation.

Active mailing list.

Widely used.

jQuery - bit of a
reaction to Prototype.

Each uses \$ differently!

Each has influenced
the other though...

Better, each has
improved the other.

Pros and Cons.

Focussed on
HTML elements.

Doesn't pollute
global namespace.

DOM manipulation a snap.

Extensive plugins.

Widely used in a
variety of projects.

Not perfect though ;)

Parameter ordering in
APIs not always intuitive.

Plugins required for a
variety of functionality.

Some functions
reassign 'this.'

This is a bit nit-picky!

Ajax made easier.

XHR isn't complicated.

But abstractions help.

ActiveX vs. JS native...

All the wrappers
are pretty similar.

URI to call, parameters,
HTTP method, callback.

jQuery's approach.

Variety of methods.

`$.ajax(options)`

Also more specific calls.


```
$.getJSON(url,  
[data], [callback])
```

Validation Example

http://localhost:8080/DesigningForAjax/validation/validationAjaxjQuery.htm Google

Gmail del.icio.us Firebug Lite Dropbox GitHub

Really Simple Address Book

Invalid zip, city, state combo.

Name:

Email:

Phone:

Street:

City: State: ☐ Zip:

Website:

IM:


```
$.get("/DesigningForAjax/validate",  
    {  
        zip: $("#zip").val(),  
        city: $("#city").val(),  
        state: $("#state").val()  
    },  
    function(message) {  
        $("#messages").html(message);  
    });
```

JavaScript lacks
namespaces - thus \$.

Readable?

Easy?

CSS selectors.

Want everything
with a given style?

CSS selectors are
very powerful.

Browser support
can be lacking...

Libraries come in and
smooth things out!

jQuery excels at
CSS selectors.

Top notch support.

Outstanding performance.

Browsers do the heavy
lifting when possible.

Hide Show Example

+

http://localhost:8080/DesigningForAjax/hideShow/hideShowAjaxjQuery.html

Q

Google

Gmail

del.icio.us

Firebug Lite

Dropbox

GitHub

Really Simple Address Book

Contact Info

Name:

Email:

Phone:

Address

Street:

City:

State:

Zip:

Web Info

Website:

IM:

Save


```
$(function(){  
    $('.header').click(function() {  
        $(this).next().toggle("blind", { direction: "vertical" }, 500);  
    });  
});
```

Not bad for a few
lines of code!

Readable?

And we add a nice effect!

Little bit of code
= big return.

Event handling.

Coding to events gives
us cleaner markup.

But browsers get in
the way...again.

Unobtrusive JavaScript.

<http://www.alistapart.com/articles/behavioralseparation>

Library designers help us!

jQuery includes a
variety of APIs.

Including some great
helper methods.

Click, focus, hover,
keys, mice, scroll...

```
$(function(){  
    $('.header').click(function() {  
        $(this).next().toggle("blind", { direction: "vertical" }, 500);  
    });  
});
```


Animations and effects.

Extensive add ons!

Want animations
and widgets?

jQuery has you covered.

jQuery relies on plugins.

jQuery UI.

Gives us widgets,
effects, draggable etc.

Let's add an effect!


```
$(function(){  
    $('.header').click(function() {  
        $(this).next().toggle("blind", { direction: "vertical" }, 500);  
    });  
});
```

Very easy to
add a little flash.

Clip, drop, fold,
highlight, puff, shake...

Easy to go too far.

Seasoning, not the entree.

Blink tag anyone?

Used right, adds that
extra bit of polish.

Date picker.

HTML lacks widgets.

Bit depressing actually.

Text box, text area, drop
down, radio button...

Pretty limited.

We have options!

Really Simple Address Book

Name:

Email:

Phone:

Street:

City: State: Zip:

Website:

IM:

Birthday:


```

<link type="text/css" href="../../themes/ui-lightness/ui.all.css" rel="stylesheet" />
<script src="../../javascript/jquery.js" type="text/javascript"></script>
<script src="../../javascript/jqueryUI/ui.core.js" type="text/javascript"></script>
<script src="../../javascript/jqueryUI/ui.datepicker.js" type="text/javascript"></script>
<script type="text/javascript">
$(function() {
    $("#datepicker").datepicker();
}); </script>
</head>
<body class="">
<h1>Really Simple Address Book</h1>
<div class="demo">
<form>
<table>
<tbody>
<tr><td>Name: </td><td><input type="text" name="name"/></td></tr>
<tr><td>Email: </td><td><input type="text" name="email"/></td></tr>
<tr><td>Phone: </td><td><input type="text" name="phone"/></td></tr>
<tr><td>Street: </td><td><input type="text" name="street"/></td></tr>
<tr>
<td>City: </td><td><input type="text" id="city"/></td>
<td>State: </td><td><input type="text" id="state" size="2" maxlength="2"/></td>
<td>Zip: </td><td><input type="text" id="zip" size="5" maxlength="5"/></td>
</tr>
<tr>
<td>Website: </td><td><input type="text" name="website"/></td>
</tr>
<tr>
<td>IM: </td><td><input type="text" name="im"/></td>
</tr>
<tr>
<td>Birthday: </td>
<td>
<input type="text" id="datepicker"/>

```



Can you say easy button?

But I want options!

No worries.

Defaults are usually good.

But plenty of options.

Constructors take
optional configuration.

For example...

What about month and
year selection?

Date Example - Ajax (jQuery)

http://localhost:8080/DesigningForAjax/date/dateAjaxjQuery.html

Google

Gmail del.icio.us Firebug Lite Dropbox GitHub

Really Simple Address Book

Name:

Email:

Phone:

Street:

City: State: Zip:

Website:

IM:

Birthday:

No problem!


```

<link type="text/css" href="../../themes/ui-lightness/ui.all.css" rel="stylesheet" />
<script src="../../javascript/jquery.js" type="text/javascript"></script>
<script src="../../javascript/jqueryUI/ui.core.js" type="text/javascript"></script>
<script src="../../javascript/jqueryUI/ui.datepicker.js" type="text/javascript"></script>
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<td>Zip: </td><td><input type="text" id="zip" size="5" maxlength="5"/></td>
</tr>
<tr>
<td>Website: </td><td><input type="text" name="website"/></td>
</tr>
<tr>
<td>IM: </td><td><input type="text" name="im"/></td>
</tr>
<tr>
<td>Birthday: </td>
<td>
<input type="text" id="datepicker"/>

```



How about that
easy button?

Not the only options...

Supports localization.

Date range restrictions,
multi months, date formats.

Dialog.

Modality.

Web isn't very
conducive to wizards...

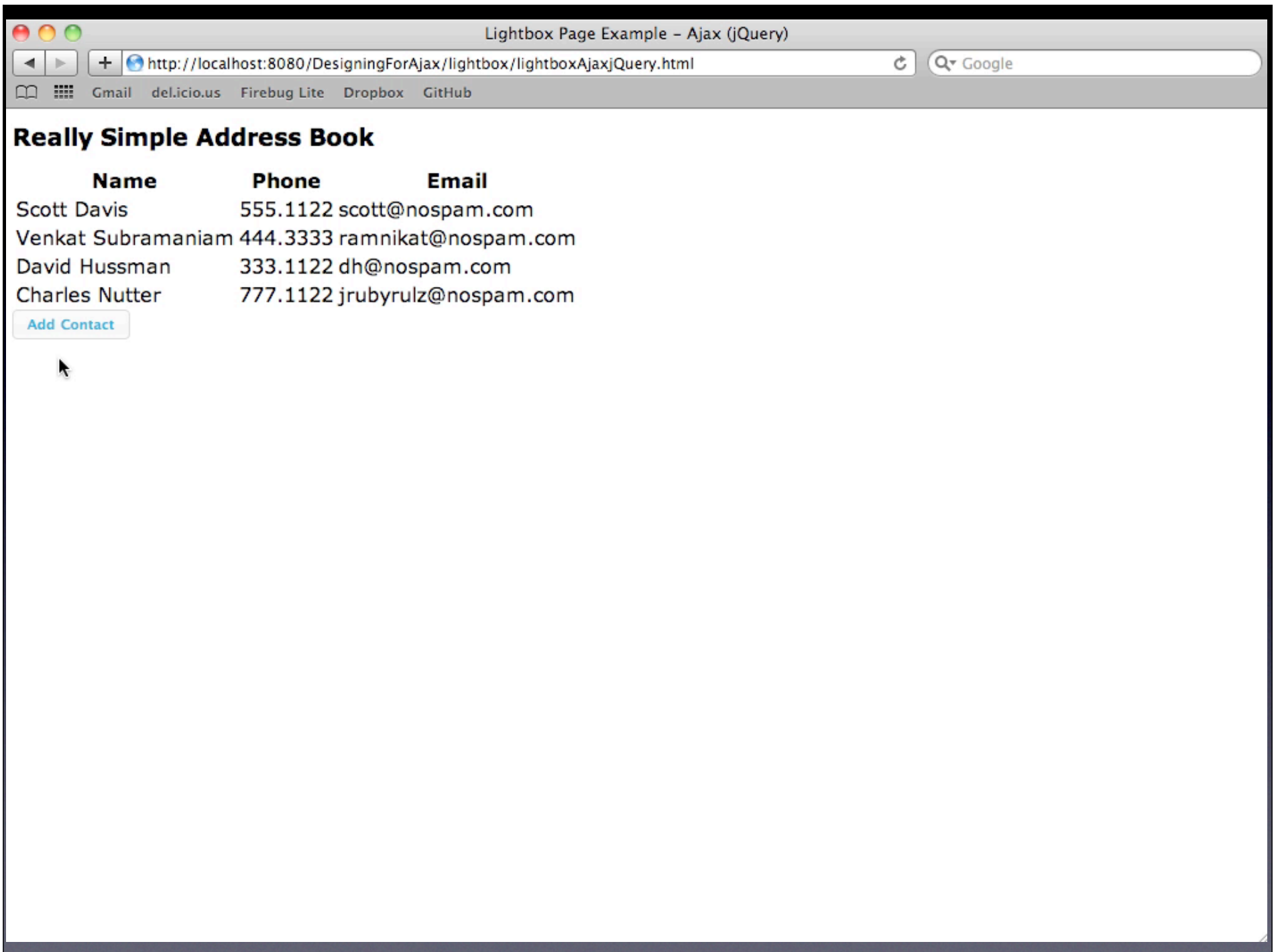
Do you like pop-ups?

Do your users?

We have options now!

“Looks” like a
popup...but it's not.

Can actually be modal.



```

<html>
  <head>
    <title>Lightbox Page Example - Ajax (jQuery)</title>
    <link type="text/css" href="../../themes/ui-lightness/ui.all.css" rel="stylesheet" />

    <script src="../../javascript/jquery.js" type="text/javascript"></script>
    <script src="../../javascript/jqueryUI/ui.core.js" type="text/javascript"></script>
    <script src="../../javascript/jqueryUI/ui.draggable.js" type="text/javascript" ></script>
    <script src="../../javascript/jqueryUI/ui.resizable.js" type="text/javascript" ></script>
    <script src="../../javascript/jqueryUI/ui.dialog.js" type="text/javascript" ></script>
    <script src="../../javascript/jqueryUI/effects.core.js" type="text/javascript" ></script>
    <script src="../../javascript/jqueryUI/effects.highlight.js" type="text/javascript" ></script>
    <style type="text/css">
      body div { font-size: 62.5%; }
      label, input { display: block; }
      input.text { margin-bottom: 12px; width: 95%; padding: .4em; }
      fieldset { padding: 0; border: 0; margin-top: 25px; }
      h1 { font-size: 1.2em; margin: .6em 0; }
      div#users-contain { width: 350px; margin: 20px 0; }
      div#users-contain table { margin: 1em 0; border-collapse: collapse; width: 100%; }
      div#users-contain table td, div#users-contain table th { border: 1px solid #eee;
        padding: .6em 10px; text-align: left; }
      .ui-button { outline: 0; margin: 0; padding: .4em 1em .5em; text-decoration: none;
        !important; cursor: pointer; position: relative; text-align: center; }
      .ui-dialog .ui-state-highlight, .ui-dialog .ui-state-error { padding: .3em; }
    </style>
    <script type="text/javascript">

      $(function() {

        var name = $("#name"),
            email = $("#email"),
            phone = $("#phone"),
            allFields = $([]).add(name).add(email).add(phone).

```



```

<html>
  <head>
    <title>Lightbox Page Example - Ajax (jQuery)</title>
    <link type="text/css" href="../../themes/ui-lightness/ui.all.css" rel="stylesheet" />

    <script src="../../javascript/jquery.js" type="text/javascript"></script>
    <script src="../../javascript/jqueryUI/ui.core.js" type="text/javascript"></script>
    <script src="../../javascript/jqueryUI/ui.draggable.js" type="text/javascript"></script>
    <script src="../../javascript/jqueryUI/ui.resizable.js" type="text/javascript"></script>
    <script src="../../javascript/jqueryUI/ui.dialog.js" type="text/javascript"></script>
    <script src="../../javascript/jqueryUI/effects.core.js" type="text/javascript"></script>
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    <script type="text/javascript">

      $(function() {

        var name = $("#name"),
            email = $("#email"),
            phone = $("#phone"),
            allFields = $([]).add(name).add(email).add(phone),

```

```

function updateTips(t) {
    tips.text(t).effect("highlight", {}, 1500);
}

function checkLength(o, n, min, max) {

    if ( o.val().length > max || o.val().length < min ) {
        o.addClass('ui-state-error');
        updateTips("Length of " + n + " must be between "+min+" and "+max+".");
        return false;
    } else {
        return true;
    }

}

$("#dialog").dialog({
    bgiframe: true,
    autoOpen: false,
    height: 300,
    modal: true,
    buttons: {
        'Add a Contact': function() {
            var bValid = true;
            allFields.removeClass('ui-state-error');

            bValid = bValid && checkLength(name, "username", 3, 16);
            bValid = bValid && checkLength(email, "email", 6, 80);
            bValid = bValid && checkLength(phone, "phone", 7, 12);

            if (bValid) {
                $('#contacts tbody').append('<tr>' +
                    '<td>' + name.val() + '</td>' +
                    '<td>' + phone.val() + '</td>' +
                    '<td>' + email.val() + '</td>' +

```



```

    },
    Cancel: function() {
        $(this).dialog('close');
    }
},
close: function() {
    allFields.val('').removeClass('ui-state-error');
}
});

```

```

$('#create-user').click(function() {
    $('#dialog').dialog('open');
})
.hover(
function(){
    $(this).addClass("ui-state-hover");
},
function(){
    $(this).removeClass("ui-state-hover");
}
).mousedown(function(){
    $(this).addClass("ui-state-active");
})
.mouseup(function(){
    $(this).removeClass("ui-state-active");
});

```

```

});

```

```

</script>

```

```

</head>

```

```

<body>

```

```

<h1>Really Simple Address Book</h1>

```

```

<table id="contacts">

```

What about a minified file?

Download builder!

Pick your components.

Handles dependencies.

Gives you a custom
minified file.

Can also pick and
tweak themes.

Themes.

Default theme is fine.

But it's not your
only option.

ThemeRoller.

<http://jqueryui.com/themeroller/>

Pick a prebuilt theme.



Download

Demos & Documentation

Themes

Development

Support

ThemeRoller

Roll Your Own

Gallery

Help

December 2008

Su	Mo	Tu	We	Th	Fr	Sa
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21	22	23	24	25	26	27
28	29	30	31			

UI lightness

Download

UI darkness

Download

Edit

December 2008

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Smoothness

Download

Start

Download

Edit

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Redmond

Download

Sunny

Download

Edit

April 2009

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1	2	3	4			
5	6	7	8	9	10	11
12	13	14	15	16	17	18

April 2009

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4			
5	6	7	8	9	10	11
12	13	14	15	16	17	18

Accordion

Section 1

Mauris mauris ante, blandit et, ultrices a, suscipit eget, quam. Integer ut neque. Vivamus nisi metus, molestie vel, gravida in, condimentum sit amet, nunc. Nam a nibh. Donec suscipit eros. Nam mi. Proin viverra leo ut odio. Curabitur malesuada. Vestibulum a velit eu ante scelerisque vulputate.

Section 2

Section 3

Tabs

First

Second

Third

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Dialog

Open Dialog

Slider

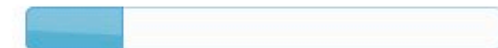


Datepicker

February 2010

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

Progressbar



Highlight / Error

Hey! Sample ui-state-highlight style.

Alert: Sample ui-state-error style.

Don't like those options?

★ New! Bring ThemeRoller into any page: [Get the ThemeRoller Firefox Bookmarklet!](#)

ThemeRoller

Roll Your Own Gallery Help

Download theme

Font Settings

Corner Radius

Corners: 5px

Note: ThemeRoller uses CSS3 border-radius for corner rounding, which is not currently supported by Internet Explorer.

Header/Toolbar

Background color & texture

#2191c1 75 %

Border Text Icon
#4297d1 #eaf5f7 #d8e7f3

Content

Clickable: default state

Clickable: hover state

Clickable: active state

Highlight

Error

Background color & texture

#e14f1c 45 %

Border Text Icon
#cd0a0e #ffffff #fcd113

Accordion

Section 1

Mauris mauris ante, blandit et, ultrices a, suscipit eget, quam. Integer ut neque. Vivamus nisi metus, molestie vel, gravida in, condimentum sit amet, nunc. Nam a nibh. Donec suscipit eros. Nam mi. Proin viverra leo ut odio. Curabitur malesuada. Vestibulum a velit eu ante scelerisque vulputate.

Section 2

Section 3

Tabs

First Second Third

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Dialog

Open Dialog

Overlay and Shadow Classes

Lorem ipsum dolor sit amet, Nulla nec tortor. Donec id elit quis purus consectetur.

Nam congue ornare. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor enim id nonummy posuere. Ut enim tamen natus.

Slider



Datepicker



Progressbar



Highlight / Error

Hey! Sample ui-state-highlight style.

Alert: Sample ui-state-error style.

Tweak away!

WYSIWYG.



Download

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ThemeRoller

Roll Your Own

Gallery

Help

Download theme

Font Settings

Corner Radius

Header/Toolbar

abc

Background color & texture

#476f8c

75 %



Error

Modal Screen for Overlays

Drop Shadows

Accordion

Section 1

Mauris mauris ante, blandit et, ultrices a, suscipit eget, quam. Integer ut neque. Vivamus nisi metus, molestie vel, gravida in, condimentum sit amet, nunc. Nam a nibh. Donec suscipit eros. Nam mi. Proin viverra leo ut odio. Curabitur malesuada. Vestibulum a velit eu ante scelerisque vulputate.

Section 2

Section 3

Tabs

First

Second

Third

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Dialog

Open Dialog

Slider



Datepicker



Progressbar





Highlight / Error

Hey! Sample ui-state-highlight style.


Alert: Sample ui-state-error style.

jQuery UI - ThemeRoller


← → +  http://jqueryui.com/themeroller/#ffDefault=Verdana%2CArial%2Csans-serif&fwDefault Loading... X  Google

[Gmail](#) [del.icio.us](#) [Firebug Lite](#) [Dropbox](#) [GitHub](#)

jQuery Plugins UI Blog About Donate

 **jQuery**
user interface

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ThemeRoller 


[Roll Your Own](#) [Gallery](#) [Help](#)


[Download theme](#)


▶ Font Settings


▶ Corner Radius


▶ Header/Toolbar 


▶ Content 

▶ Clickable: default state 

▶ Clickable: hover state 

▶ Clickable: active state 

▶ Highlight 

▶ Error 

▶ Modal Screen for Overlays

▶ Drop Shadows

★ New! Bring ThemeRoller into any page: [Get the ThemeRoller Firefox Bookmarklet!](#)

Accordion

▼ Section 1

Mauris mauris ante, blandit et, ultrices a, suscipit eget, quam. Integer ut neque. Vivamus nisi metus, molestie vel, gravida in, condimentum sit amet, nunc. Nam a nibh. Donec suscipit eros. Nam mi. Proin viverra leo ut odio. Curabitur malesuada. Vestibulum a velit eu ante scelerisque vulputate.

▶ Section 2

▶ Section 3

Tabs

First Second Third

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Dialog

[Open Dialog](#)

Button

A button element

Choice 1 Choice 2 Choice 3

Autocomplete

Slider

Datepicker

March 2010

Su	Mo	Tu	We	Th	Fr	Sa
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28	29	30	31			

Progressbar

Better than hand
rolled CSS?

You can also modify
the CSS directly.

Or write it all yourself!

Plugins.

We've looked at a
couple of widgets.

But you've got
other options.

Hundreds of extensions.

Divided into categories.

Ajax, animation, events,
menus, navigation, etc.

Searchable.

User ratings.

Paradox of choice?

Variable quality...

Compatibility issues.

“playing the “which JQuery version” will make all of these different plugins work! Arrggghhh! #jquery”

Brian Sam-Bodden

<http://twitter.com/bsbodden/status/9155328185>

Very extensible.

Help!

http://docs.jquery.com/Main_Page

Good tutorials.

Plenty of books.

Google friendly ;)

Code is well written.

Easy to read.

Mailing list is vibrant.

<http://docs.jquery.com/Discussion>

What about Prototype?

Great library.

Which one is better?

It depends!

Honestly, both are great.

Can't go wrong either way.



Passion on both sides...

Pros and cons.

[http://blog.thinkrelevance.com/2009/1/12/
why-i-still-prefer-prototype-to-jquery](http://blog.thinkrelevance.com/2009/1/12/why-i-still-prefer-prototype-to-jquery)

Play with them.

Which one solves
your problems?

Don't like either?

Luckily, you've got
plenty of choices!

Questions?!?

Thanks!

Please complete your surveys.