How to use JavaScript in uPortal 3

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Jen Bourey
Java Developer
UNICON

Gary Thompson
User Experience Leader
UNICON

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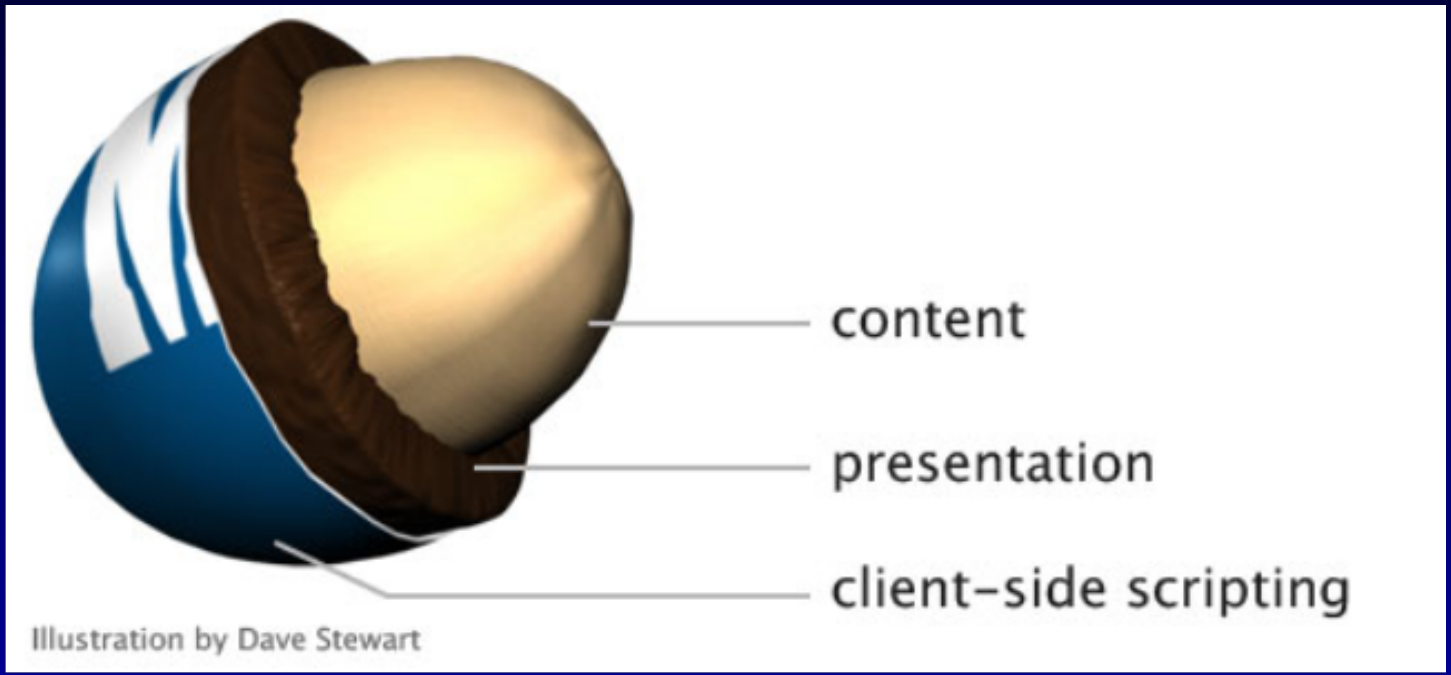
1. JavaScript
2. uPortal JavaScript
3. jQuery and Fluid
4. Writing JS as a jQuery plugin
5. Portlet-specific concerns
6. Performance Recommendations
7. Resource server

JavaScript

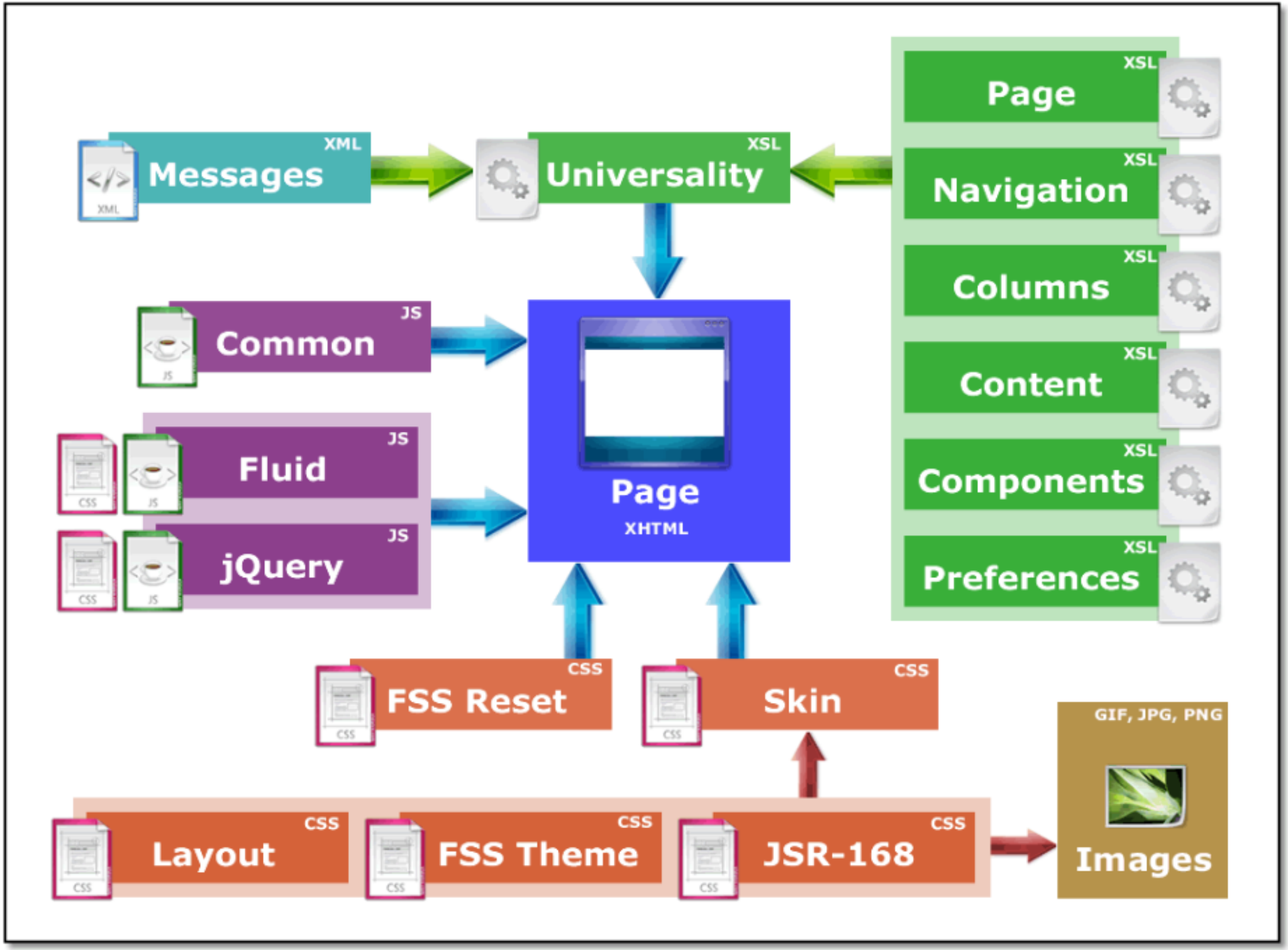
A brief definition.

Client-side Goodness



uPortal JavaScript

Scripts native to uPortal.


XML
Messages
XML
XSL
Universality
XSL
Page
XSL
Navigation
XSL
Columns
XSL
Content
XSL
Components
XSL
Preferences
JS
Common
JS
Fluid
JS
jQuery
Page
XHTML
CSS
FSS Reset
CSS
Skin
GIF, JPG, PNG
Images
CSS
Layout
CSS
FSS Theme
CSS
JSR-168

jQuery and Fluid

JavaScript libraries available to uPortal and portlets.

jQuery

jQuery is a fast and concise JavaScript Library that simplifies HTML document traversing, event handling, animating, and Ajax interactions for rapid web development.

Home | Site Map | Help | Sign Out

uPortal

Welcome Admin User. Sign out

Google Search

Welcome | Admin Tools | Development | Testing

Welcome | Google Search | Bookmarks | Calend

- Person Attributes
- CSS Viewer
- Snooper
- uPortal Data Dictionary

Welcome

Welcome

Maximize

Lorem Ipsum 1 | Lorem Ipsum 2 | Lorem Ipsum 3

Lorem Ipsum 1

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed eget neque consequat sapien commodo ultricies. Mauris commodo lobortis elit. Mauris euismod. Fusce ac dui. Nullam in arcu. Morbi pulvinar. Vivamus lacinia ligula et dolor. Phasellus hendrerit nulla. Aliquam feugiat eleifend tellus. Nullam tristique nisi et est. Sed luctus magna ut dui. Nam aliquet metus laoreet tortor.

Duis erat mi, placerat vel, vulputate ac, commodo vel, mauris. Duis molestie. Sed urna erat, viverra sit amet, aliquam ut, facilisis a, magna. Nullam suscipit posuere justo. Curabitur ac augue. Maecenas eget orci. Aenean et purus. Curabitur non nulla sed metus convallis ornare.

Bookmarks Portlet

Maximize Remove

You have no bookmarks. Add folders Options and bookmarks to this portlet to keep useful links handy.

Add Bookmark Add Folder

Calendar

Maximize Remove

February 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	19	20	21
22	23	24	25	26	27	28

Customize My Portal

- Add Content
- Page Layout
- Select Skin
- Add tab

Administration

- Portlet Manager
- Customize

Fragment Administration

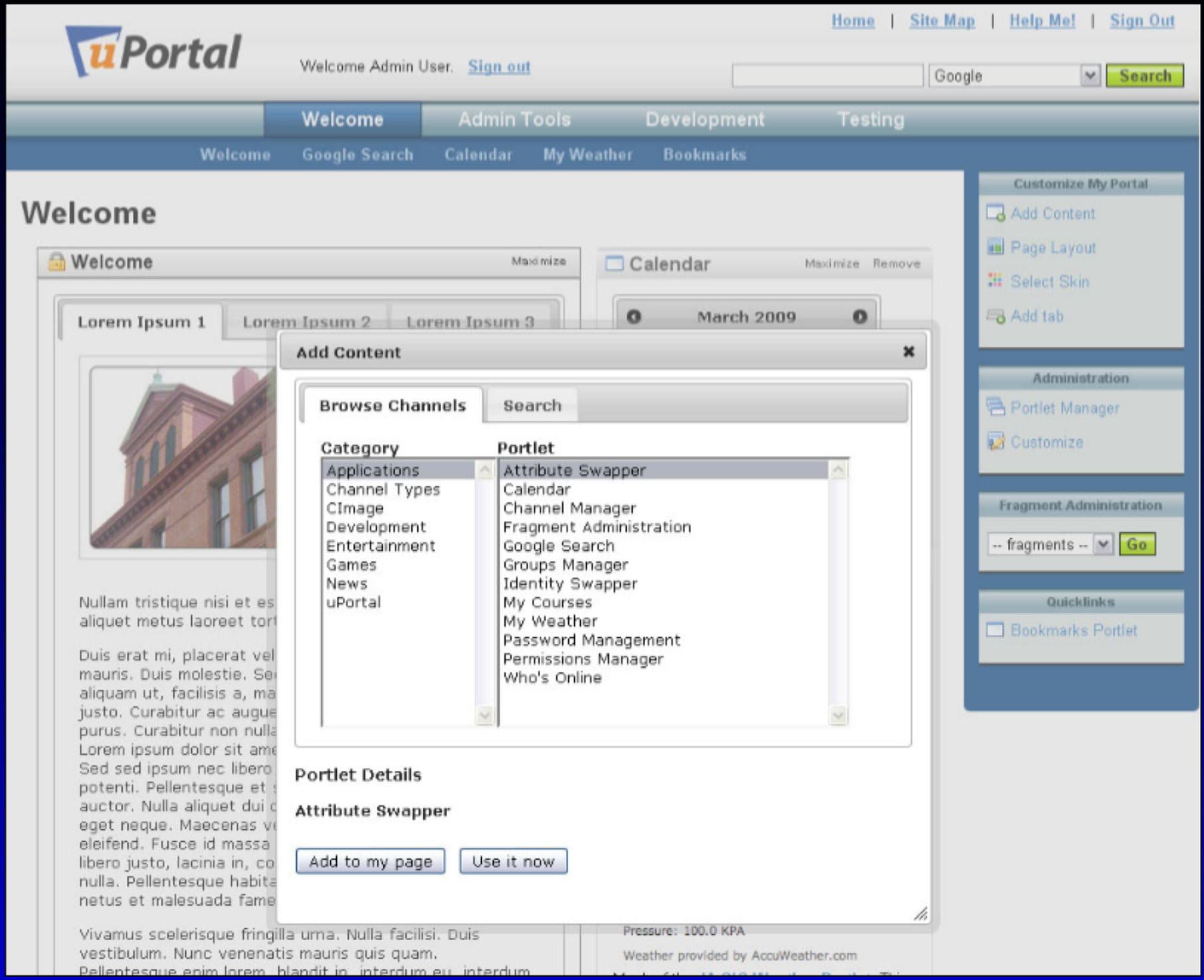
-- fragments -- Go

Quicklinks

- Bookmarks Portlet

uPortal is licensed under the New BSD License as approved by the Open Source Initiative (OSI), an OSI-certified ("open") and Gnu/FSF-recognized ("free") license.

Silk icon set 1.3 courtesy of Mark James.


uPortal
Home | Site Map | Help Me! | Sign Out
Welcome Admin User. Sign out
Google
Search
Welcome
Admin Tools
Development
Testing
Welcome
Google Search
Calendar
My Weather
Bookmarks
Welcome
Welcome
Maximize
Lorem Ipsum 1
Lorem Ipsum 2
Lorem Ipsum 3
Calendar
Maximize
Remove
March 2009
Add Content
Browse Channels
Search
Category
Portlet
Applications
Channel Types
CImage
Development
Entertainment
Games
News
uPortal
Attribute Swapper
Calendar
Channel Manager
Fragment Administration
Google Search
Groups Manager
Identity Swapper
My Courses
My Weather
Password Management
Permissions Manager
Who's Online
Portlet Details
Attribute Swapper
Add to my page
Use it now
Customize My Portal
Add Content
Page Layout
Select Skin
Add tab
Administration
Portlet Manager
Customize
Fragment Administration
-- fragments --
Go
Quicklinks
Bookmarks Portlet
Pressure: 100.0 KPA
Weather provided by AccuWeather.com

Fluid Infusion

Welcome

Welcome

Maximize

Lorem Ipsum 1 | Lorem Ipsum 2 | Lorem Ipsum 3

Lorem Ipsum

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed eget neque consequat sapien commodo ultricies. Mauris commodo lobortis elit. Mauris euismod. Fusce ac dui. Nullam in arcu. Morbi pulvinar. Vivamus lacinia ligula et dolor. Phasellus hendrerit nulla. Aliquam feugiat eleifend tellus. Nullam tristique nisi et est. Sed luctus magna ut dui. Nam aliquet metus laoreet tortor.

Duis erat mi, placerat vel, vulputate ac, commodo vel, mauris. Duis molestie. Sed urna erat, viverra sit amet, aliquam ut, facilisis a, magna. Nullam suscipit posuere justo. Curabitur ac augue. Maecenas eget orci. Aenean et purus. Curabitur non nulla sed metus convallis ornare. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed sed ipsum nec libero pharetra malesuada. Suspendisse potenti. Pellentesque et sapien non purus malesuada auctor. Nulla aliquet dui quis diam. Mauris dictum justo

My Weather

Princeton, NJ

Currently

62° F

Wind: WSW at 15.0

Humidity: 32.0%

Pressure: 29.97 in

Paris, France

Currently

9° C

Wind: S at 9.0 km/h

Humidity: 76.0%

Pressure: 100.0 KPA

Weather provided by AccuWeather.com

Maximize Remove

Wed Thu

61° | 35° 49° | 36°

Calendar

Maximize Remove

March 2009

Su	Mo	Tu	We	Th	Fr	Sa
11° | 1°		10° | 1°		1		
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
29	30	31				

Maximize Remove

This is a sample screen for demonstration purposes only.

Customize My Portal

Add Content

Page Layout

Select Skin

Add tab

Administration

Portlet Manager

Customize

Fragment Administration

-- fragments -- Go

Quicklinks

Bookmarks Portlet

Writing JS as a jQuery plugin

A few simple things to make your JS a standard jQuery plugin.

Step 1 – Create a JS File

jquery.[insert name of plugin].js

jquery.formatList.js.

Step 2 – Extend the jQuery object

```
01. $.fn.formatList = function( options )
02. {
03. //Plugin code goes here.
04. };
```

Step 3 – Add Custom Alias

```
01. /* Start: Closure */
02. (function($){
03. 
04. /* Start: Plugin */
05. $.fn.formatList = function( options )
06. {
07. // Plugin code goes here.
08. };
09. /* End: Plugin */
10. 
11. })(jQuery);
12. /* End: Closure */
```

Step 4 – Add Loop

```
01. /* Start: Closure */
02. (function($){
03.
04. /* Start: Plugin */
05. $.fn.formatList = function( options )
06. {
07. return this.each(function()
08. {
09. // Plugin code goes here.
10. });
11. };
12. /* End: Plugin */
13.
14. })(jQuery);
15. /* End: Closure */
```

Step 5 – Add Default Options

```
01. /* Start: Closure */
02. (function($){
03. 
04. /* Start: Plugin */
05. $.fn.formatList = function( options )
06. {
07. var defaults = {
08. width: 170,
09. background: "#efefef"
10. };
11. var options = $.extend( defaults, options );
12. 
13. return this.each(function()
14. {
15. // Place plugin code here.
16. });
17. };
18. /* End: Plugin */
19. 
20. })(jQuery);
21. /* End: Closure */
```

Step 6 – Add Implementation Code

```
01. /* Start: Closure */
02. (function($){
03.
04. /* Start: Plugin */
05. $.fn.formatList = function( options )
06. {
07. var defaults = {
08. width: 170,
09. background: "#efefef"
10. };
11. var options = $.extend( defaults, options );
12.
13. return this.each(function()
14. {
15. // Define DOM targets.
16. var li = $( this );
17. li.addClass("format-list-item");
18. var a = $('.format-list-item > a');
19.
20. //Apply CSS.
21. li.css("width", options.width + "px");
22. li.css("margin-bottom","2px");
23. li.css("list-style","none");
24. a.css("padding","5px");
25. a.css("display","block");
26. a.css("background", options.background);
27. a.css("font-size","90%");
28. a.css("text-decoration","none");
29. a.css("border","1px solid #999");
30. a.attr("target"," blank");
31. a.css("color","black");
32.
33. });
34. };
35. /* End: Plugin */
36.
37. })(jQuery);
38. /* End: Closure */
```

Step 7 – Invoke the Plugin

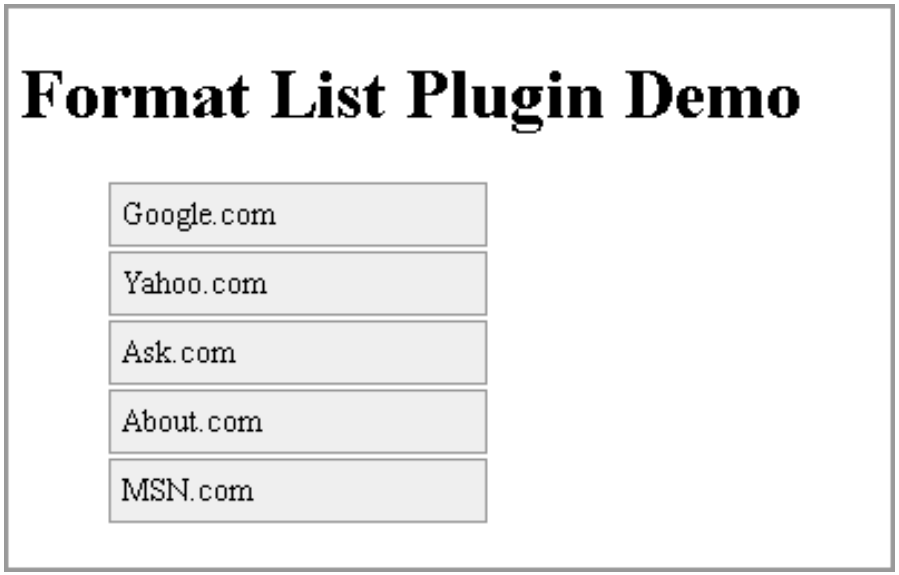
```
01.  <!-- DEPENDENCIES -->
02.  <script src="js/jquery-
     1.2.6.min.js" type="text/javascript"></script>

03.  <script src="js/jquery.formatList.js" type="te
     xt/javascript"></script>
```

Step 7.2 – Write Markup

```
01. <h1>Format List Plugin Demo</h1>
02.
03. <!-- START: LIST -->
04. <ul class="format-list">
05. <li>
06. <a href="http://www.google.com/">
07.     <span>Google.com</span>
08.    </a>
09. </li>
10. <li>
11. <a href="http://www.yahoo.
12.     <span>Yahoo.com</span>
13.    </a>
14. </li>
15. <li>
16. <a href="http://www.ask.co
17.     <span>Ask.com</span>
18.    </a>
19. </li>
20. <li>
21. <a href="http://www.about.com/">
22.     <span>About.com</span>
23.    </a>
24. </li>
25. <li>
26. <a href="http://www.msn.com/">
27.     <span>MSN.com</span>
28.    </a>
29. </li>
30. </ul>
31. <!-- END: LIST -->
```

Step 7.3 – Progressively Enhance

```
01.  <!-- INVOKE PLUGIN -->
02.  <script type="text/javascript">
03.  $(document).ready(function() {
04.    $("ul > li").formatList();
05.  });
06.  </script>
```



Portlet-specific concerns

Things to keep in mind when using JS in portlets.

Portlets: Unique Challenges

- Maintaining element ID uniqueness
- Unpredictable page contents
  - Portal theme
  - Other portlets
  - Proxied websites
- Multiple javascript libraries and library versions

Ensuring unique element IDs

- Portlets may be added more than once to the same page
- <portlet:namespace/> tag
  - use to namespace element IDs
  - use tag in inline javascript or pass result to function
- Subscribe ID available in some legacy channels
- Need other solutions for webproxy content

Using <portlet:namespace/>

```
<%@ taglib prefix="c"
uri="http://java.sun.com/jsp/jstl/core" %>
<%@ taglib prefix="portlet"
uri="http://java.sun.com/portlet" %>

<!-- Set the namespace variable -->
<c:set var=”namespace”><portlet:namespace/></c:set>

<div id=”${namespace}_mydiv”></div>

<script type=”text/javascript”>
$(“#${namespace}_mydiv”).html(“Hello world!”);
$.my.fn( {namespace: “${namespace}”} );
</script>
```

Resulting HTML

```
<div id=”Pluto_someId_mydiv”></div>

<script type=”text/javascript”>
$(“#Pluto_someId_mydiv”).html(“Hello world!”);
$.my.fn( { namespace: “Pluto_someId” } );
</script>
```

Minimizing Library Conflicts

- Import necessary script libraries within each portlet
- Limit visible variables and method names and name them carefully
- Use jQuery no-conflict in extreme mode
- Make sure any other shared library variables are cleared

```
<%@ taglib prefix="c"
uri="http://java.sun.com/jsp/jstl/core" %>
<%@ taglib prefix="portlet"
uri="http://java.sun.com/portlet" %>
<script type=”text/javascript” language=”javascript”
src=”/scripts/jquery-1.3.1.min.js”></script>
<c:set var=”namespace”><portlet:namespace/></c:set>

<div id=”${namespace}_mydiv”></div>

<script type=”text/javascript”>
var my = my || {};
my.jQuery = jQuery.noConflict(true);
my.jQuery(function(){
var $ = my.jQuery;
$(“#${namespace}_mydiv”).html(“Hello world!”);
});
</script>
```

Performance Recommendations

Tips to keep your JS in top performance.

Performance Suggestions

- Minify javascript and CSS resources
- GZip javascript and CSS
- Set long-lived expiration cache headers
  - trade-off between caching concerns and upgrade considerations
- Minimize HTTP requests

Minifying Scripts

- Command-line tools
  - jsmin
  - YUI compressor
- YUI compressor maven plugin
  - Minify code as part of the build process
  - Combine files

YUI Compressor Plugin

```
<plugin>
<groupId>net.sf.alchim</groupId>
<artifactId>yuicompressor-maven-plugin</artifactId>
<version>0.7.1</version>
<executions>
<execution>
<goals><goal>compress</goal></goals>
</execution>
</executions>
<configuration>
<excludes>
<exclude>**/*.min.js</exclude>
</excludes>
<linebreakpos>10000</linebreakpos>
<suffix>.min</suffix>
</configuration>
</plugin>
```

GZipping and Caching Options

- GZip
  - EhCache filter
  - Tomcat and Apache
  - Jasig resource server
- Cache headers
  - Apache
  - Jasig resource server

Resource Server

A new home for JS resources.

Resource Server Basics

- Project goals
  - Web application for serving standard library files
  - Cache timeout filter
- Status
  - New Jasig sandbox project
  - 1.0.0 RC1 now available
- Current Usage
  - Bundled with uPortal 3.1

Resource Server Web Application

- Independent web application
- Automatically deployed by uPortal 3.1
- Available for use by
  - uPortal
  - Portlets
  - other applications

Resource Server Web Application

- Shared standard libraries
  - Javascript
  - CSS
  - Images
- All resources gzipped with appropriate cache headers
- Shared URLs for library resources

Available Libraries

- jQuery
  - support for DOM browsing and manipulation
  - AJAX requests
- jQuery UI
  - rich set of components and effects
- Fluid Components
- Famfamfam silk icon set
- *<your-favorite-library-here>*

Resource Server Library

- Includes
  - JSP tag for resource retrieval
  - Cache timeout filter
  - Configurable GZip filter
- Technical details
  - Builds on ehcache technology
  - May be included as a maven dependency

Using the Resource Server

- JSP tag library
  - file linked from the resource server if available
  - if unavailable, linked from project
  - allows compatibility with older versions of uPortal or other portals
- Cache header setting filter
- Configurable GZip filter

Using the JSP tag

```
<%@ taglib prefix="rs"
uri="http://www.jasig.org/resource-server" %>

<!-- Import a script in the resource server -->
<rs:resourceURL var="scriptUrl"
value="/rs/jquery/1.3.1/jquery-1.3.1.min.js" />
<script type="text/javascript" language="javascript"
src="${resourceURL}" />

<!-- Display an image from the resource server -->
<img src="<rs:resourceURL
value="/rs/famfamfam/silk/1.3/application.png"/>"/>
```

Filter Example

```
<filter>
<filter-name>SimplePageCchingFilter</filter-name>
<filter-class>
net.sf.ehcache.constructs.web.filter ➡
.SimplePageCachingFilter
</filter-class>
</filter>

<filter-mapping>
<filter-name>SimplePageCachingFilter</filter-name>
<url-pattern>*.js</url-pattern>
</filter-mapping>
<filter-mapping>
<filter-name>SimplePageCachingFilter</filter-name>
<url-pattern>*.css</url-pattern>
</filter-mapping>
```

More Resources

- jQuery: http://docs.jquery.com
- jQuery UI: http://ui.jquery.com
- Fluid: http://wiki.fluidproject.org
- Yahoo Performance Guide: http://developer.yahoo.com/yslow/help/
- Jasig Confluence: http://www.ja-sig.org/wiki/display/PLT/JavaScript+Best+Practices

this.question

Jen Bourey

jbourey@unicon.net

www.unicon.net

Gary Thompson

gary@unicon.net

www.unicon.net