

LET'S GET REAL

Using Widgets and Web Services in Enterprise

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<http://consortiumlibrary.org/blogs/mcrobinson/>



Overview

- Widgets
- jQuery
- Web Services
- JSON calls
- Parsing results
- Dom layer
- Example
- Timing
- More Examples

The screenshot shows the UAA/APU Consortium Library search results for the term 'ajax'. The page has a blue header with the library name and navigation links. Below the header is a search bar with 'ajax' entered. The results section shows 95 results found, sorted by relevance. On the left, there are filters for Author, Format, Subject, and Publication Date. The main results list includes books like 'Aias = Ajax' by Sophocles, 'Ajax bible' by Holzner, Steven, 'Adding Ajax' by Powers, Shelley, 'Professional Ajax' by Zakas, Nicholas C, 'CSS, DHTML, & Ajax' by Teague, Jason Cranford, and 'Ajax in practice' by Crane, Dave. Each result has a 'Place Hold' and 'Text It To Me' button.

UAA/APU Consortium Library

Log In | My Account | My Lists

Everything All Fields ajax Search Advanced Search

95 Results Found

Sort By:

Select an Action

Only Show Available

Author

Include Exclude

☐ ebrary, Inc. (28)

☐ Sophocles. (7)

☐ Grene, David. (4)

☐ Lattimore, Richmond... (3)

☐ Chaffer, Jonathan. (2)

More Expand All

Format

Include Exclude

☐ Book (57)

☐ Electronic resource (35)

☐ DVD (2)

☐ CD (1)

Subject

Include Exclude

☐ Ajax (Web site develo... (30)

☐ Electronic books. (30)

☐ Web site development. (24)

☐ JavaScript (Computer... (19)

☐ Web sites -- Design. (11)

More Expand All

Publication Date

Include Exclude

Years

Any - Any

Aias = Ajax
by Sophocles
1999, Greek tragedy in new translations, Greek tragedy in new translations
Book
882.01 SOPHOCLE, APL Loussac Non-Fiction Level 3, Book

Ajax bible
by Holzner, Steven
2007
Book
TK5105.8885.A52 H64 2007, UAA/APU Consortium General Collection, Book

Adding Ajax
by Powers, Shelley
2007
Book
TK5105.8885.A52 P69 2007, UAA/APU Consortium General Collection, Book

Professional Ajax
by Zakas, Nicholas C
2006, Wrox professional guides, Wrox professional guides
Book
QA76.73.J39 Z35 2006, UAA/APU Consortium General Collection, Book

CSS, DHTML, & Ajax
by Teague, Jason Cranford
2007, 4th ed., Visual quickstart guide, Visual quickstart guide
Book
006.74 TEAGUE, APL Loussac Non-Fiction Level 3, Book

Ajax in practice
by Crane, Dave
2007



Widgets

- Feature in admin console
- Inserts JS into page
- Limitations—
 - function conflicts
 - only some pages
 - version control

Edit HTML Widget

Type:

*Code:

*Name:

Description:

*Button Text:

Select fields for use in the widget.

Available		Selected
Abstract		Document ID
Access Level		
Added Author		
Added Conference Author		
Added Corporate Author		
Added Title		
Added Uniform Title		
Advanced Search Location		
Ancestor Room		
Asset Name		

Localized Strings

Any string defined here will be available for use in the HTML Content and Custom Javascript below. Previous to rendering on the page of the string for that code. E.g. if you had a string with the code "ELEPHANT" with "elephant" for the current language, then anywhere by "elephant".

[Add Row](#)

Bound Javascript Function:

Custom JavaScript

```
function getBib(rId){
  var catKey;
  catKey=jQuery('#'+rId+'_DOC_ID').find('.DOC_ID_value').text().split(':')[1];
  getFullBib(catKey);
}

function getFullBib(catKey){
  jQuery.getJSON('http://137.229.138.65:8080/symws/rest/standard/lookupTitleInfo?')
```



External JS File

- All code in one place
- Share functions
- Use favorite editor
- Easy version control

Configure Custom Page Elements

TESTY: English (United States)

Autofill Data From:

Styles

Theme:

Custom CSS:

Custom Page Content

Custom Javascript URL:

☐ Enable Patron Help Link

Custom Help URL:

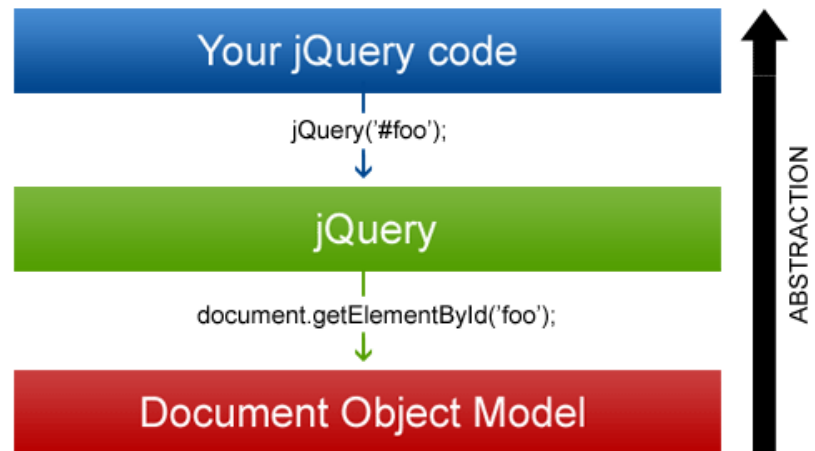
Library Information:





jQuery

- Javascript library
- Simplifies code
- Especially good at:
DOM layer
JSON
Ajax



jQuery

jQuery API/1.2 http://jquery.com		EVENTS		CORE UI EFFECTS	
SELECTORS		HANDLERS		INTERACTION	
#id, tag, .class, * elm1, elm2, elmN ancestor descendant parent > child parent/child prev + next prev ~ siblings		.bind(type, data, fn) .one(type, data, fn) .trigger(type, data) .triggerHandler(type, data) .unbind(type, data)		.hover(fnIN, fnOUT) .toggle(fnIN, fnOUT) .blur() .change() .click() .dblclick() .focus() .select() .submit() .unload() .unblur()	
:first :last :not(selector) :even :odd :eq(index) :gt(index) :lt(index) :contains(text) :empty :has(selector) :parent		:nth-child(index) :first-child :last-child :only-child :input :text :password :radio :checkbox :submit :image :reset :button :file :hidden :visible :header :animated :hidden		.error() .error(fn) .keydown() .keydown(fn) .keypress() .keypress(fn) .keyup() .keyup(fn) .load(fn) .scroll(fn) .resize(fn) .ready(fn)	
CSS		MOUSE		SLIDE (speed, callback)	
.css(name, value) .css(properties) .height(value) .width(value) .addClass(class) .removeClass(class) .toggleClass(class) .offset()		.mousedown(fn) .mousemove(fn) .mouseout(fn) .mouseover(fn) .mouseup(fn) .dblclick() .focus(fn) .select(fn) .submit(fn) .unload(fn) .unblur(fn)		.slideDown(s, c) .slideUp(s, c) .slideToggle(s, c) .hide(speed, callback) .toggle()	
ATTRIBUTES		KEYBOARD		SHOW / HIDE	
.attr(name) .attr(key, value) .removeAttr(name) .attr(properties) .attr(key, function)		.keydown() .keydown(fn) .keypress() .keypress(fn) .keyup() .keyup(fn) .load(fn) .scroll(fn) .resize(fn) .ready(fn)		.show() .show(speed, callback) .hide() .hide(speed, callback) .toggle()	
HTML		WINDOW		ANIMATE	
.html() .text() .html(value) .val(value)		.load(fn) .scroll(fn) .resize(fn) .ready(fn)		.stop() .queue() .queue(callback) .queue(queue) .dequeue() .animate(params, duration, easing, callback) .animate(params, options)	
USER AGENT		AJAX		FADE	
\$.browser, \$.browser.version \$.boxModel		Request (url, data, callback) \$.ajax(options) .load(u, d, c) \$.get(u, d, c) \$.getJSON(u, d, c) \$.getScript(u, c) \$.post(u, d, c) .loadIfModified(u, d, c) Event Handler (callback) .ajaxComplete(c) .ajaxError(c) .ajaxSend(c) .ajaxStart(c) .ajaxStop(c) .ajaxSuccess(c) Serialize .serialize() .serializeArray() .ajaxSetup(options)		.fadeIn(speed, callback) .fadeOut(speed, callback) .fadeTo(speed, opacity, callback)	
JavaScript		TRAVERSING		MANIPULATING	
\$.extend(obj1,...objN) \$.grep(array, callback, invert) \$.map(array, callback) \$.unique(array) \$.trim(string) \$.merge(1st, 2nd)		.filter(class) .filter(expr) .filter(fn) .is(expr) .map(callback) .not(expr) .slice(start, end) .find(e) .next(e) .nextAll(expr) .parent(e) .parents(e) .prev(e) .prevAll(e)		.append(c) .appendTo(c) .prepend(c) .prependTo(c) .after(c) .before(c) .insertAfter(c) .insertBefore(c) .wrap(html) .wrap(element) .wrapAll(html) .wrapAll(element) .wrapInner(html) .wrapInner(element) .replaceWith(c) .replaceAll(selector) .empty() .remove(expression) .clone() .clone(true)	
COLORCHARGE		EXTEND		\$();	
http://colorcharge.com		\$.fn.extend(obj) \$.extend(obj) \$.noConflict()		\$(expression, context), \$(html) \$(elements), \$(callback)	

COLORCHARGE
<http://colorcharge.com>

jQuery 1.2 Cheat-sheet
updated: December 23rd, 2007



Web Services

- Gateway to ILS data
- Used by Enterprise, BookMyne, other services
- Documented API
- Few code examples
- Not all ILS data available

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JSON Calls

- Web Services supports multiple protocols
- JSON probably best for JQuery
- `jQuery.getJSON('url',function(data){...});`

`url` is a request to Web Services

`data` is results that are returned

`{...}` contains code that parses the results



Parsing Results

- WS by default returns XML
 &json=true returns array
- Manual describes data that is returned
- Use browser to view results
 &prettyprint=true formats the array

http://<server>/symws/rest/standard/lookupTitleInfo?
clientID=DS_CLIENT&titleID=<catkey>
&includeItemInfo=true&json=true&prettyprint=true



```
{
  "titleInfo": [ {
    "titleID": "1486913",
    "CallInfo": [ { {
      "libraryID": "AML-CE",
      "classificationID": "DEWEY",
      "callNumber": "BROWN",
      "numberOfCopies": 4,
      "ItemInfo": [ { {
        "itemID": "39095016070026",
        "itemTypeID": "LEASED-BK",
        "currentLocationID": "CHECKEDOUT",
        "homeLocationID": "NEW-BOOKS",
        "dueDate": "1399104000000",
        "chargeable": false,
        "numberOfHolds": 1,
        "fixedTimeBooking": false
      } }, {
        "itemID": "39095016070075",
        "itemTypeID": "LEASED-BK",
        "currentLocationID": "CHECKEDOUT",
        "homeLocationID": "NEW-BOOKS",
        "dueDate": "1397894400000",
        "chargeable": false,
        "numberOfHolds": 1,
        "fixedTimeBooking": false
      } }, {
        "itemID": "39095016070125",
        "itemTypeID": "LEASED-BK",
        "currentLocationID": "CHECKEDOUT",
        "homeLocationID": "NEW-BOOKS",
        "dueDate": "1398153600000",
        "chargeable": false,
        "numberOfHolds": 1,
        "fixedTimeBooking": false
      } }, {
        "itemID": "39095016070174",
        "itemTypeID": "LEASED-BK",
        "currentLocationID": "CHECKEDOUT",
        "homeLocationID": "NEW-BOOKS",
        "dueDate": "1397894400000",
        "chargeable": false,
        "numberOfHolds": 1,
        "fixedTimeBooking": false
      } } ]
    } } ],
  "libraryID": "AML-GR",
  "classificationID": "DEWEY",
  "callNumber": "BROWN",
  "numberOfCopies": 1,
  "ItemInfo": [ { {
```

```

486931,"callInfo":{"libraryID":"AML-CE","classificationID":"DEWEY","callNumber":"BROWN","numeroB
","itemTypeID":"LEASED-BK","currentLocationID":"CHECKEDOUT","homeLocationID":"NEW-
10000","chargeable":false,"numberOfHolds":1,"fixedTimeBooking":false},"itemID":"39095016070075","
CHECKEDOUT","homeLocationID":"NEW-BOOKS","dueDate":"1937894400000","chargeable":false,"numberOfHolds"
,"itemTypeID":"LEASED-BK","currentLocationID":"CHECKEDOUT","homeLocationID":"NEW-
10000","chargeable":false,"numberOfHolds":1,"fixedTimeBooking":false},"itemID":"39095016070174","
CHECKEDOUT","homeLocationID":"NEW-BOOKS","dueDate":"1937894400000","chargeable":false,"numberOfHolds"
ssificationID":"DEWEY","callNumber":"BROWN","numeroOfCopies":1,"itemInfo":{"itemID":"390950160571
GENER-COLL","homeLocationID":"GENER-COLL","chargeable":true,"numberOfHolds":1,"fixedTimeBooking":f
iWEY","callNumber":"BROWN","numeroOfCopies":17,"itemInfo":{"itemID":"39095015764637","itemTypeID"
CHECKEDOUT","homeLocationID":"NEW-FICT","dueDate":"1984984200000","chargeable":false,"numberOfHolds"
,"itemTypeID":"LEASED-BK","currentLocationID":"CHECKEDOUT","homeLocationID":"NEW-
10000","chargeable":false,"numberOfHolds":1,"fixedTimeBooking":false},"itemID":"39095015764728","it
CHECKEDOUT","homeLocationID":"NEW-FICT","dueDate":"1984848400000","chargeable":false,"numberOfHolds"
,"itemTypeID":"LEASED-BK","currentLocationID":"CHECKEDOUT","homeLocationID":"NEW-
10000","chargeable":false,"numberOfHolds":1,"fixedTimeBooking":false},"itemID":"39095015764439","it
CHECKEDOUT","homeLocationID":"NEW-FICT","dueDate":"1937808000000","chargeable":false,"numberOfHolds"
,"itemTypeID":"LEASED-BK","currentLocationID":"CHECKEDOUT","homeLocationID":"NEW-
10000","chargeable":false,"numberOfHolds":1,"fixedTimeBooking":false},"itemID":"39095015764777","it
EW-FICT","homeLocationID":"NEW-FICT","chargeable":true,"numberOfHolds":1,"fixedTimeBooking":false,
,"itemTypeID":"LEASED-BK","currentLocationID":"CHECKEDOUT","homeLocationID":"NEW-
10000","chargeable":false,"numberOfHolds":1,"fixedTimeBooking":false},"itemID":"39095015764579","it
CHECKEDOUT","homeLocationID":"NEW-FICT","dueDate":"198412800000","chargeable":false,"numberOfHolds"
,"itemTypeID":"LEASED-BK","currentLocationID":"CHECKEDOUT","homeLocationID":"NEW-
10000","chargeable":false,"numberOfHolds":1,"fixedTimeBooking":false},"itemID":"39095015764520","it
CHECKEDOUT","homeLocationID":"NEW-FICT","dueDate":"1399104000000","chargeable":false,"numberOfHolds"
,"itemTypeID":"LEASED-BK","currentLocationID":"CHECKEDOUT","homeLocationID":"NEW-
10000","chargeable":false,"numberOfHolds":1,"fixedTimeBooking":false},"itemID":"39095015764421","it
CHECKEDOUT","homeLocationID":"NEW-FICT","dueDate":"1398240000000","chargeable":false,"numberOfHolds"
,"itemTypeID":"LEASED-BK","currentLocationID":"CHECKEDOUT","homeLocationID":"NEW-
10000","chargeable":false,"numberOfHolds":1,"fixedTimeBooking":false},"itemID":"39095015774156","it
CHECKEDOUT","homeLocationID":"FICT-AML","dueDate":"1397635200000","chargeable":false,"numberOfHolds"
,"itemTypeID":"NEW-BOOK","currentLocationID":"CHECKEDOUT","homeLocationID":"FICT-
100","chargeable":false,"numberOfHolds":1,"fixedTimeBooking":false},"itemID":"39095015774206","it
CHECKEDOUT","homeLocationID":"FICT-AML","dueDate":"1397808000000","chargeable":false,"numberOfHolds"
,"itemTypeID":"NEW-BOOK","currentLocationID":"CHECKEDOUT","homeLocationID":"FICT-
100","chargeable":false,"numberOfHolds":1,"fixedTimeBooking":false},"itemID":"39095015774249","it
GENER-COLL","homeLocationID":"GENER-COLL","chargeable":true,"numberOfHolds":1,"fixedTimeBooking":f
,"itemTypeID":"LEASED-BK","currentLocationID":"CHECKEDOUT","homeLocationID":"NEW-

```



Parsing Results

- jump down into array returned by json

```
copyInfo=data.TitleInfo[0].CallInfo;
```

- loop through copyInfo array returned by json

```
jQuery.each(copyInfo,function(i,value){
```

```
    ...do stuff...
```

```
});
```



DOM layer

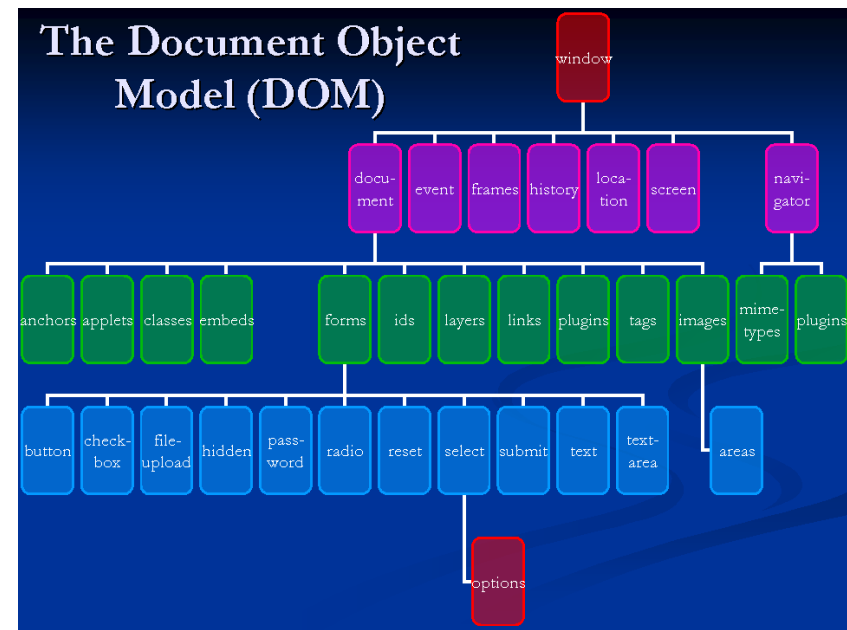
- Model that describes all elements on html page
- JQuery can select & modify elements

Detect catkey for title

Insert WS results

Move things around

- Use Inspect Element in browser to decode html



Example

- Loop through dom for each title in results page

```
jQuery('div.cell_wrapper').each(function(){  
    ...  
});
```

- Grab the catkey & insert unique placeholder

```
var detailURL=jQuery(this).find('.displayDetailLink a').attr('href');  
var catKey=detailURL.split('SD_ILS:')[1].split('/')[0];  
jQuery(this).append('<div id="placeholder_'+catKey+'"></div>');
```



Example

- Make JSON call

```
jQuery.getJSON('http://<servername>/symws/rest/  
standard/lookupTitleInfo?clientID=DS_CLIENT  
&titleID='+catKey+'&includeItemInfo=true  
&json=true&callback=?',function(data){  
    ...  
});
```

- Loop through results

```
copyInfo=data.TitleInfo[0].CallInfo;  
jQuery.each(copyInfo,function(i,value){  
    ...  
    jQuery.each(value.ItemInfo,function(){  
        ...  
    });  
});
```



Example

- Grab public note

```
var itemNote="";  
if (this.publicNote) {  
    itemNote = ' ('+this.publicNote+')';  
}
```

- Insert onto page

```
jQuery('#placeholder_'+catKey).append(itemNote);
```



Example

```
jQuery('div.cell_wrapper').each(function(){
    var detailURL=jQuery(this).find('.displayDetailLink a').attr('href');
    var catKey=detailURL.split('SD_ILS:')[1].split('/')[0];
    jQuery(this).append('<div id="placeholder_'+catKey+'"></div>');

    jQuery.getJSON(
        'http://jlc-web.uaa.alaska.edu:8080/symws/rest/standard/lookupTitleInfo?clientID=DS_CLIENT
        &titleID='+catKey+'&includeItemInfo=true&json=true&callback=?',function(data){
            copyInfo=data.TitleInfo[0].CallInfo;
            jQuery.each(copyInfo,function(i,value){
                jQuery.each(value.ItemInfo,function(){
                    var itemNote='';
                    if (this.publicNote) {
                        itemNote = ' ('+this.publicNote+')';
                    }
                    jQuery('#placeholder_'+catKey).append(itemNote);
                });
            });
        });
});
```



Timing

- JSON calls are asynchronous
- Preload Symphony policies, LTFL scripts, etc
- Wait for page to be ready

```
jQuery(document).ready(function() {  
    ...  
});
```

- Write code to loop through DOM efficiently
- Insert unique id tags as place marks for retrieved data
- If Web Services is slow, use ajax instead of getJSON



More Examples

- Copy info on results
- Sorting copies by library
- Toggling display of copies
- Serials holdings
- Policy files
- Course Reserves
- Patron info

```
function getMarcHoldingsBiblio(){
    var pageURL = jQuery(location).attr('href');
    var catKey = pageURL.split('SD_ILS:')[1].split('/')[0];

    // json call to web services api and loop through results
    jQuery.getJSON(
        'http://jlc-web.uaa.alaska.edu:8080/symws/rest/standard/lookupTitleInfo?cl
        leID='+catKey+'&includeMarcHoldings=true&marcEntryFilter=full&json=true&ca
        data){

        // jump to biblio info array returned by json
        bibInfo=data.TitleInfo[0].BibliographicInfo.MarcEntryInfo;
        holdingsInfo=data.TitleInfo[0].MarcHoldingsInfo;

        var thisOutput = '';
        thisOutput += '<div class="documentSummaries">';
        thisOutput += '<div class="properties">';
        thisOutput += '<div class="displayElementWrapper">';

        // loop through copyInfo array returned by json
        jQuery.each(bibInfo, function(i,value){

            if (this.entryID=='310') {
                thisOutput += '<div class="displayElementLabel">'+this.label+'</div>';
                thisOutput += '<div class="displayElementText">'+this.text+'</div>';
            } else if (this.entryID=='321') {
                thisOutput += '<div class="displayElementLabel">'+this.label+'</div>';
                thisOutput += '<div class="displayElementText">'+this.text+'</div>';
            } else if (this.entryID=='362') {
                thisOutput += '<div class="displayElementLabel">'+this.label+'</div>';
                thisOutput += '<div class="displayElementText">'+this.text+'</div>';
            } else if (this.entryID=='599') {
                thisOutput += '<div class="displayElementLabel">'+this.label+'</div>';
                thisOutput += '<div class="displayElementText">'+this.text+'</div>';
                thisOutput = thisOutput.replace(/UAS\ - JUNEAU/g, 'UAS Egan');
            } else if (this.entryID=='780') {
                thisOutput += '<div class="displayElementLabel">'+this.label+'</div>';
                thisOutput += '<div class="displayElementText">'+this.text+'</div>';
            } else if (this.entryID=='785') {
                thisOutput += '<div class="displayElementLabel">'+this.label+'</div>';
                thisOutput += '<div class="displayElementText">'+this.text+'</div>';
            }
        });
    }
}
```

<http://consortiumlibrary.org/blogs/mcrobenson/>



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Using Widgets and Web Services in Enterprise

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