



The modx CMS and framework

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NYPHP - Sept. 28, 2010

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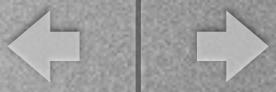
Why modx?

- CMS + framework
- Open Source + PHP
- Flexibility (no framework “straight-jacket”)
- Graphical approach
- Simple & accessible, yet powerful (like PHP)
- Active community



A little history ...

- The beginnings: fork of Etomite
- Main modx guys: Ryan Thrash, Jason Coward, Shaun McCormick
- modx Evolution: the beginning
- modx Revolution: the re-write



Requirements

- PHP 5.1.1+
- Apache 1.3.x+ / IIS / lighttpd / Zeus
- MySQL 4.1.20+
- Linux / Mac OS X / Windows

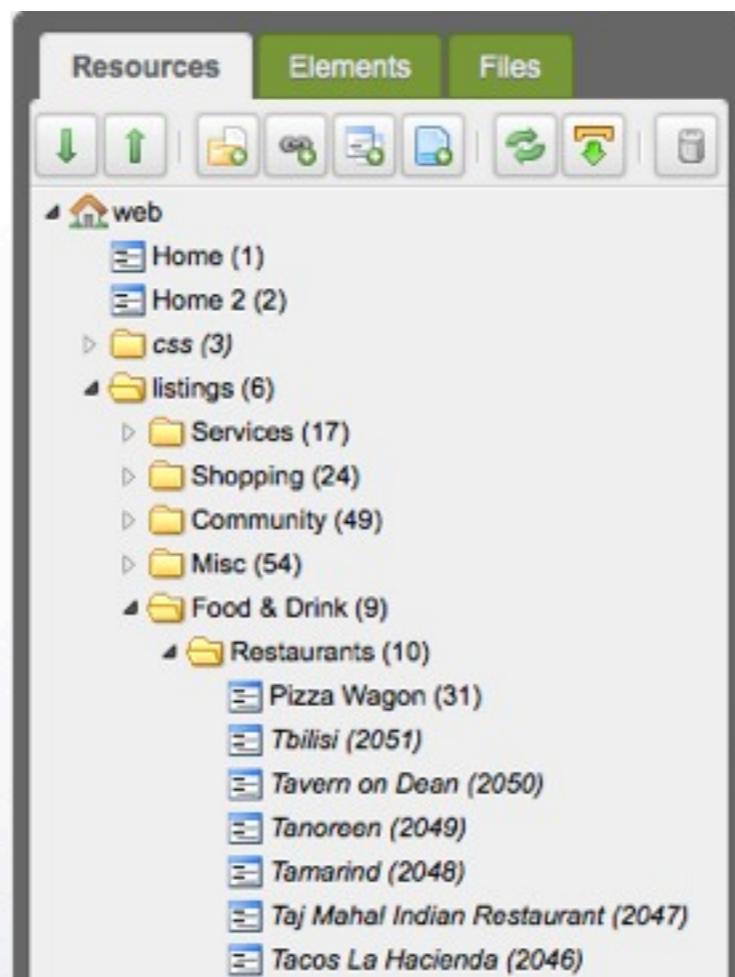


Documents / Resources

- Basic unit of information
- Document == Resource == “Page”
- Document: File or Folder



Documents as folders





Documents as files

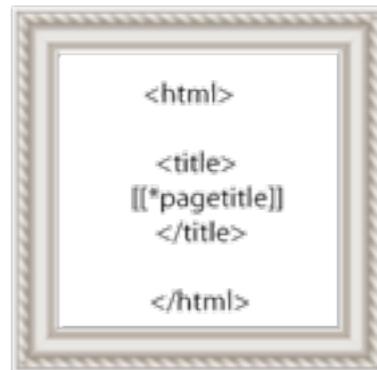
Document: Taj Mahal Indian Restaurant

ID:	2047
Uses Template:	<input type="text" value="Listing Detail"/> <input type="checkbox"/> Published
Title:	<input type="text" value="Taj Mahal Indian Restaurant"/>
Long Title:	<input type="text"/>
Description:	<input type="text"/>
Resource Alias:	<input type="text" value="taj-mahal-indian-restaurant"/>
Link Attributes:	<input type="text"/>
Summary (introtext):	<input type="text"/>
Parent Resource:	<input type="text" value="10"/>
Menu Title:	<input type="text"/>
Menu Index:	<input type="text" value="0"/>
Hide From Menus:	<input type="checkbox"/>



Templates

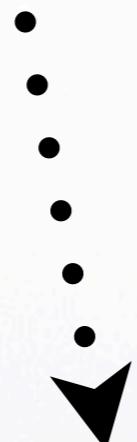
- At the foundation of every modx site
- Basic “glue” for all site elements
- Determine every document’s look
- Help to classify documents based on their type / purpose



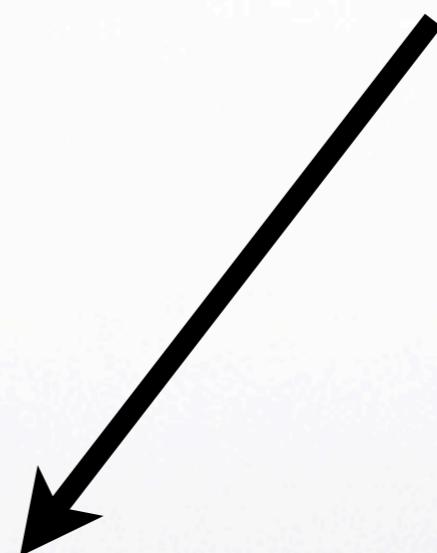
Documents



Templates



**Template Variables
(a.k.a. TVs)**





Template Variables

Create/Edit Document | Page Settings | **Template Variables** | Access Permissions

Data Import | **Listings**

neighborhood	Bay Ridge, Brooklyn, NY
cuisines	<ul style="list-style-type: none">Chowhound ApprovedChristmas SpecialtiesDance FloorDinersEuropean FlairFamily DiningFamily RunFine Dining
status	<ul style="list-style-type: none">ActiveClosedPending
phone	(718) 836-1512
address	7315 3rd Ave., Brooklyn, NY
city	Brooklyn
summary	North Indian Cuisine

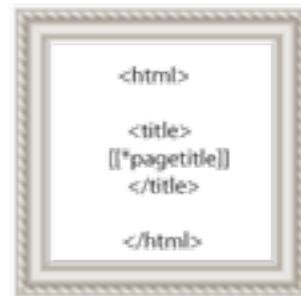


Snippets

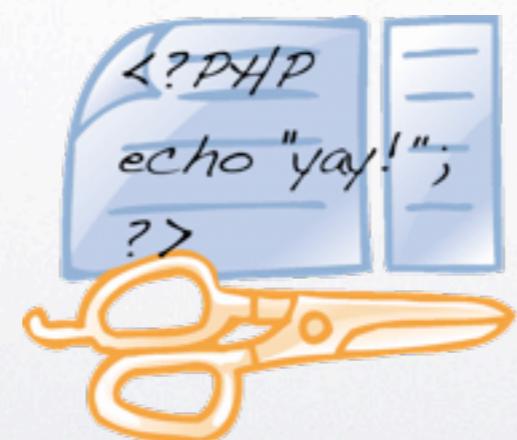
- contain PHP code
- act like functions
- can be called by documents & templates
- In an MVC architecture, the “M” (model)



Document



Template



Snippet



Snippet: definition (#1)

Snippet: google_maps

[Save](#) | [Cancel](#) | [Help!](#)

[Create/edit snippet](#) [Properties](#)

Here you can add/edit snippets. Remember, snippets are 'raw' PHP code, and if you expect the output of the snippet to be shown at a certain point within the template, you need to return a value from within the snippet.

Snippet name:

Description:

Category:

Lock snippet for editing:

Clear Cache on Save:

Snippet code (php)

```
<?php
//Params:
//lat - latitude, lng -longitude, desc - description
require_once MODX_BASE_PATH . 'includes/maps/phoogle.class.php';
require_once MODX_BASE_PATH . 'core/config/custom_config.inc.php';

$map = new PhoogleMap();
$map->setAPIKey(GMAPS API KEY);

echo "<html> <head>\n";

$map->printGoogleJS();

echo "</head> <body>\n";

$map->addGeoPoint($lat, $lng, $desc);
$map->showMap();

echo "</body></html>";
?>
```



Snippet: definition (#2)

Snippet: google_maps_iframe_contents

Save | Cancel | Help! |

Create/edit snippet Properties

Here you can add/edit snippets. Remember, snippets are 'raw' PHP code, and if you expect the output of the snippet to be shown at a certain point within the template, you need to return a value from within the snippet.

Snippet name: google_maps_iframe_contents

Description: Show google maps page, given lat, lng and desc

Category: Maps

Lock snippet for editing:

Clear Cache on Save:

Snippet code (php)

```
<?php
//Get params: lat, lng, desc

$googleMap = $modx->runSnippet('google_maps',array(
    'lat' => $_GET['lat'],
    'lng' => $_GET['lng'],
    'desc' => $_GET['desc']
));
echo $googleMap;
?>
```

Side-note: this is a little sneak peak at the modx API!



Snippet: calling it (from a document)

Document: Google Maps Iframe Page

Save | Duplicate | Preview | Cancel | Help! |

Create/Edit Document | Page Settings | Template Variables | Access Permissions

ID: 2131

Uses Template: Blank Template Published

Title: Google Maps Iframe Page

Long Title:

Description:

Resource Alias: gmap

Link Attributes:

Summary (introtext):

Parent Resource: 0

Menu Title:

Menu Index: 13

Hide From Menus:

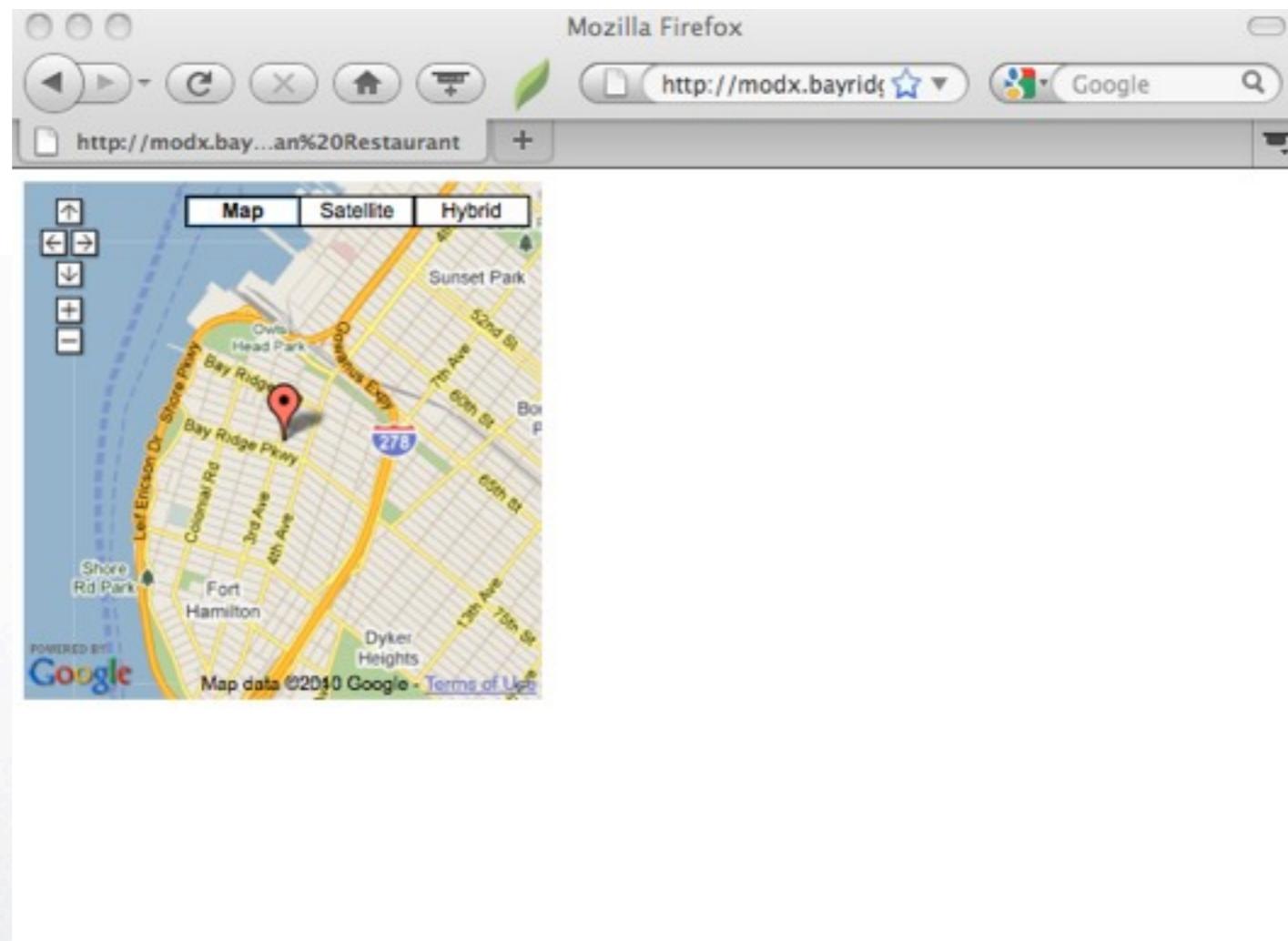
RESOURCE CONTENT

```
[[!google_maps_iframe_contents]]
```



And the result is ...

<http://modx.bayridge-business.com/gmap.html?lat=40.6323290&lng=-74.0270810&desc=Taj%20Mahal%20Indian%20Restaurant>





Snippet: calling it (from a template)

Template: Listing Detail

Save Cancel Help

Create/edit template Properties Template Variables

Create and edit templates. Changed or new templates won't be visible in your site's cached pages until the cache is emptied, however, you can use the preview function on a page to see the template in action.

Template name: Listing Detail

Description:

Category: Listings

Lock template for editing:

Clear Cache on Save:

Template code (html)

```
[[*address]] <br />
[[*neighborhood]] <br />
[[*phone]] <br /> <br />
[[*summary]] <br />

<br />
<br />
<h4 class="page_title">Comments</h4>
<div class="hr dotted clearfix">&ampnbsp</div>

[[!modComments? &docId='[*id]' ]]

[[!rooter]]

</div>
<!-- End Main Content -->

<!-- Begin Sidebar -->

<div class="grid_4">
  <h4>Our History</h4>
  <div class="hr dotted clearfix">&ampnbsp</div>

  <dl class="history">
```



Snippets in a template affect all documents using that template!

Bay Ridge Business Directory

Find Businesses
LISTINGS

Latest Gossip
COMMENTS

Live here
REAL ESTATE

Publicize
ADD LISTING

Taj Mahal Indian Restaurant

7315 3rd Ave., Brooklyn, NY
Bay Ridge, Brooklyn, NY
(718) 836-1512

North Indian Cuisine

Comments

the greatest indian food in nyc. amazing service, very friendly. never crowded. sophisticated decor. great for large parties -- not to mention great prices and complimentary deserts and appetizers.

John (babisuga1o4)
May 26th, 2008 (m/d/y) **Taj Mahal Indian Restaurant**

Add a new comment:

Name:
E-Mail:
Message:
Verification Words:

Our History

1994 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla vel diam id mauris accumsan egestas. Sed sed lorem. Integer id mi vel sapien fermentum vehicula. Pellentesque vitae lacus a sem posuere fringilla. Vestibulum dolor.

1996 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla vel diam id mauris accumsan egestas. Sed sed lorem. Integer id mi vel sapien fermentum vehicula. Pellentesque vitae lacus a sem posuere fringilla. Vestibulum dolor.

2000



Chunks

- Pieces of HTML, with placeholders
- Think of them as simplified Smarty templates
- Used by snippets, or templates to create HTML output
- In an MVC architecture, the “V” (view)



Document

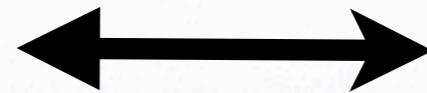


```
<html>
<p>
All about
PB & J
</p>
</html>
```

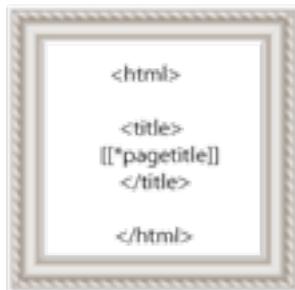
Rendered
Page



Snippet



Chunk



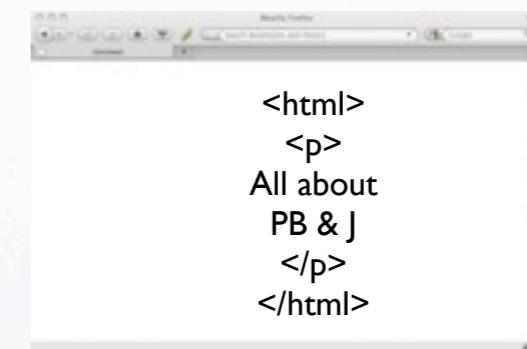
Template



Document



Chunk



Rendered Page



Chunk: definition

Chunk: gmap_iframe

Save | Cancel | Help! |

Create/edit chunk Properties

Here you can add/edit chunks. Remember, chunks are 'raw' HTML code; so any PHP code won't be processed.

Name: gmap_iframe

Description:

Category: Maps

Lock chunk for editing:

Clear Cache on Save:

Chunk code (html)

```
<iframe src='[[+base_url]]gmap.html?lat=[[+lat]]&lng=[[+lng]]&desc=[[+desc]]'
height='325' width='325'></iframe>
```



Chunk: calling it (from a template)

Template: Listing Detail

Save Cancel Help

Create/edit template Properties Template Variables

Create and edit templates. Changed or new templates won't be visible in your site's cached pages until the cache is emptied, however, you can use the preview function on a page to see the template in action.

Template name: Listing Detail

Description:

Category: Listings

Lock template for editing:

Clear Cache on Save:

Template code (html)

```
<br />
[[Sgmap_iframe? &base_url='[[++site_url]]' &lat='[[*latitude]]' &lng='[[*longitude]]'
&desc='[[*pagetitle]]']

<br />
<br />
<h4 class="page_title">Comments</h4>
<div class="hr dotted clearfix">&nbsp;</div>

[![modComments? &docId='[[*id]]' ]]
```

- Chunks accept parameters
- You can pass either system settings (site_url) or template variables (latitude,longitude,pagetitle) as parameters



And the result is ...

<http://modx.bayridge-business.com/listings/food-drink/restaurants/taj-mahal-indian-restaurant/>

Bay Ridge Business Directory

Find Businesses
[LISTINGS](#)

Latest Cossip
[COMMENTS](#)

Live here
[REAL ESTATE](#)

Publicize
[ADD LISTING](#)

Taj Mahal Indian Restaurant

7315 3rd Ave., Brooklyn, NY
Bay Ridge, Brooklyn, NY
(718) 836-1512

North Indian Cuisine

Map Satellite Hybrid



Map data ©2010 Google - [Terms of Use](#)

Our History

1994 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla vel diam id mauris accumsan egestas. Sed sed lorem. Integer id mi vel sapien fermentum vehicula. Pellentesque vitae lacus a sem posuere fringilla. Vestibulum dolor.

1996 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla vel diam id mauris accumsan egestas. Sed sed lorem. Integer id mi vel sapien fermentum vehicula. Pellentesque vitae lacus a sem posuere fringilla. Vestibulum dolor.

2000

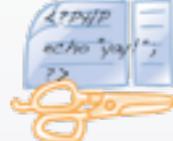
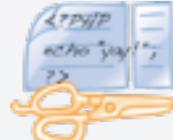
Comments

the greatest indian food in nyc. amazing service, very friendly, never crowded. sophisticated decor. great for large parties -- not to mention great prices and complimentary deserts and appetizers.

John (babilisuga1o4@aol.com)
May 26th, 2008 (m/d/y) [Taj Mahal Indian Restaurant](#)



modx tag syntax

	Evolution (old)	Revolution (new)
Template Variable	 [*content*]	[[*content]]
Cached Snippet	 [[amzn_book_srch]]	[[amzn_book_srch]]
Uncached snippet	 [! amzn_book_srch!]	[[!amzn_book_srch]]
Chunk	 {{gmap_iframe}}	[\$gmap_iframe]]
Chunk placeholders	[+latitude+]	[[+latitude+]]

More info.: <http://rtfm.modx.com/display/revolution20/Tag+Syntax>



“Hackable” URLs

- Using aliases and folders to create, hackable, semantic URLs
- E.g.:
<http://modx.bayridge-business.com/listings/food-drink/restaurants/taj-mahal-indian-restaurant/>
- Organize your content in the same way that you think about it, and the URLs will reflect this semantic structure automatically!



Caching

- Document-level caching
- Snippet-level caching
- Caching is essential for high-traffic sites!



Document-level caching

Document: Spartan Souvlaki

Save | Duplicate

Create/Edit Document | Page Settings | Template Variables | Access Permissions

Container:	<input type="checkbox"/>
Rich Text:	<input checked="" type="checkbox"/>
Published On:	2010-09-21 <input type="button" value="..."/>
Publish Date:	7:34 am <input type="button" value="..."/>
Unpublish date:	<input type="button" value="..."/> <input type="button" value="..."/>
Searchable:	<input checked="" type="checkbox"/>
Cacheable:	<input checked="" type="checkbox"/>
Empty Cache:	<input checked="" type="checkbox"/>
Deleted:	<input type="checkbox"/>
Content Type:	HTML <input type="button" value="..."/>
Content Disposition:	Inline <input type="button" value="..."/>
Class Key:	modDocument

Documents are cacheable by default



Snippet- and element-level caching

- Cached snippet: [[google_maps]]
- Uncached snippet: [[!google_maps]]
- Uncached chunk: [[!\$chunk]],
- Uncached placeholder: [[!+placeholder]]
- Uncached template variable [[!*template_var]]



Page-level + snippet-level caching

Page	Snippet	Result (Page)
Cached	Cached	Cached
Cached	Uncached	If only 1 snippet / page: Uncached If > 1 snippet/page: Mixed
Uncached	Cached	Uncached
Uncached	Uncached	Uncached



Caching: summary

- Page-level cache overrides snippet-level cache
- Best practice: keep all pages cached, use uncached snippets for sections doing data processing, or needing instant updates
- Page cache is automatically cleared when the page (or snippets it uses) is updated



Extending modx

- snippets, plugins, packages (“add-ons”)
- plugins: pieces of PHP code that affect how the modx manager and user-facing site operate
- packages: collections of snippets and chunks available through the modx manager

Browse add-ons: <http://modxcms.com/extras/repository/10>



Extending modx: upgrading packages

Package Management Help!

Packages Providers

Packages are collections of MODx components that can be used within MODx in a variety of ways. Here you can manage them, update their installation status, disable or enable installed packages, or download new ones from remote providers. Right-click on a row in the grid for more options.

Add New Package Download Extras

NAME	VERSION	RELEASE	INSTALLED	UPDATES AVAILABLE	PROVIDER	Actions
ditto	3.0	alpha3	Sep 26, 2010 12:42 AM	No	modxcms.com	
getpage	1.0.0	rc1	Jul 31, 2010 11:26 PM	Yes	modxcms.com	
getresources	1.1.0	pl	Jul 31, 2010 11:26 PM	Yes	modxcms.com	
googlemapstv	1.0	rc3	Sep 26, 2010 01:07 AM	No	modxcms.com	
login	1.0.3	rc1	Jul 31, 2010 11:29 PM	Yes	modxcms.com	
quip	1.1.1	pl	Sep 21, 2010 05:07 PM	No	modxcms.com	
wayfinder	2.1.1	rc1	Sep 26, 2010 12:42 AM	No	modxcms.com	

Page 1 of 1 | | Displaying 1 - 7 of 7



Extending modx: adding new packages

MODx Revolution

Package Retriever

Home

Resources

Snippets

Front End Templates

Manager Templates

Site Packages

Plugins

Listings (3)

QuipResourceCleaner (1)

Categories

Search

Select Packages to Download

PACKAGE BROWSER

modxcms.com

MODx Add-Ons

Core Extensions

Front End Templates

Manager Templates

Site Packages

Download Extras

Choose a repository from the left to begin browsing this Provider.

Total Packages in this Provider: 86
Total Downloads for this Provider: 245,758

Most Popular

- Wayfinder - 1,387
- EditArea - 1,179
- Clarity Pack - 1,155
- MODx Sample Site - 1,031
- Aqueous - 981
- Dino - 836
- Breadcrumbs - 926
- If - 843
- CSS Star Rating - 676
- Captcha - 675

Newest Additions

- getResources 1.2.0-pl - Sep 25, 2010
- Login 1.2.0-pl - Sep 24, 2010
- TinyMCE 4.0.5-pl - Sep 23, 2010
- Formit 1.3.0-rc2 - Sep 22, 2010
- DirectResize Rev 1.0.1-rc1 - Sep 22, 2010
- Login 1.2.0-rc2 - Sep 20, 2010
- Login 1.2.0-rc1 - Sep 20, 2010
- Formit 1.3.0-rc1 - Sep 20, 2010
- modActiveDirectory 1.0.0-rc1 - Sep 16, 2010
- Soft Manager Theme 1.0-beta 1 - Sep 16, 2010

Back Finish

File	Version	Type	Date	Status
quip	1.1.1	pl	Sep 21, 2010 05:07 PM	No
wayfinder	2.1.1	rc1	Sep 26, 2010 12:42 AM	No



modx API

Why use the modx API?

- Call a snippet from a snippet
- Parse a chunk, and return its output from a snippet
- Cache the result of a function
- Save data to the database using xPDO library



Using the modx API

- All snippets running within modx have access to the global \$modx object
- The \$modx object is the main, and most important object
- Call various methods of \$modx

API Reference: <http://rtfm.modx.com/display/revolution20/modX>



modx API, snippets

Call a snippet from a snippet:

```
$googleMap = $modx->runSnippet('google_maps',array(  
    'lat' => $_GET['lat'],  
    'lng' => $_GET['lng'],  
    'desc' => $_GET['desc']  
));
```



modx API, chunks

Parse a chunk, and return its output (from a snippet)

Snippet:

```
$row = array('name' => 'Tom Jones', 'email' => 'tj@tomjones.example.com', 'message' => 'hi there!');

$formattedComment = $this->oModx->getChunk('show_comment', $row);

echo $formattedComment;
```

Chunk:

```
<p> [[+message]] <br />

[[+name]] <em>([[+email]])</em> </p>
```



modx API - accessing TVs

- Get current document's id:

```
$modx->resource->get('id');
```

- Get current document's (built-in) "content" TV:

```
$modx->resource->get('content');
```

- Get the value of current document's (custom) "latitude" TV:

```
$oTV = $modx->getObject( 'modTemplateVar', array( 'name'=>'latitude' ) );
```

```
$latitude = $oTV->renderOutput($modx->resource->get('id'));
```



modx API - running DB queries

- PDO -> xPDO -> \$modx (\$modx inherits from PDO!)
- Sample code:

```
foreach( $modx->query('SELECT cuisine_id, cuisine FROM cuisines LIMIT 5') as $row ){  
    echo $row['cuisine_id'] .','. $row['cuisine'] . '<br />';  
}
```

- Result

```
1,nocuisine  
2,Christmas Specialties  
3,Italian  
...
```

(More on xPDO and PDO in the appendix)



Modx Plugins

- Extend and modify core modx functionality
- Example: create a custom routing system to serve “virtual pages”, using 404 handler



Modx Plugin Events

New Plugin

Save Cancel Help

Create/edit plugin System Events Properties

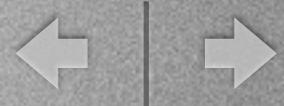
Select the events that you would like this plugin to listen to.

NAME	ENABLED	GROUP	PROPERTY SET	PRIORITY
OnBeforeCacheUpdate	<input type="checkbox"/>	System		
OnBeforeChunkFormDelete	<input type="checkbox"/>	Chunks		
OnBeforeChunkFormSave	<input type="checkbox"/>	Chunks		
OnBeforeDocFormDelete	<input type="checkbox"/>	Resources		
OnBeforeDocFormSave	<input type="checkbox"/>	Resources		
OnBeforeEmptyTrash	<input type="checkbox"/>	Resources		
OnBeforeManagerLogin	<input type="checkbox"/>	Security		
OnBeforeManagerLogout	<input type="checkbox"/>	Security		
OnBeforeManagerPageInit	<input type="checkbox"/>	System		
OnBeforePluginFormDelete	<input type="checkbox"/>	Plugins		
OnBeforePluginFormSave	<input type="checkbox"/>	Plugins		



Questions? Comments?

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Minneapolis, MN 55455
Office: 612-265-1020
Fax: 612-265-1020
E-mail: karen.rasmussen@umn.edu



Thank You!

- See appendix for links, and more info.



Appendix

Start Here:

- Main site: <http://www.modxcms.com/>
- Forums: <http://modxcms.com/forums/>
- modx Revolution documentation: <http://rtfm.modx.com/display/revolution20/Home>
- Book: MODx Web Development (covers modx Evolution). <https://www.packtpub.com/modx-web-development/book>
- Bob's Guides: <http://bobsguides.com/MODx.html>



xPDO

xPDO is an object-relational mapping framework that stands at the core of modx Revolution. It was written by modx core contributor Jason Coward.

PDO reference: <http://us3.php.net/manual/en/intro pdo.php>

xPDO intro.: <http://rtfm.modx.com/display/xPDO20/Fundamentals>

xPDO class ref.: <http://rtfm.modx.com/display/xPDO20/Class+Reference>

xPDO api docs: <http://api.modxcms.com/xpdo/xPDO.html>

xPDO forum: <http://modxcms.com/forums/index.php/board,219.0.html>

Blog Posts:

<http://marcoraven.net/modx/modxrevolutionxpdo.html>



Useful Packages

Listing and Summarization:

- `getResources`:

<http://modxcms.com/extras/package/?package=552>

- Ditto:

<http://modxcms.com/extras/package/?package=96>



Useful Packages

Menus:

- Wayfinder:

<http://modxcms.com/extras/package/?package=487>

- Breadcrumbs:

<http://modxcms.com/extras/package/?package=54>

For all packages, see: <http://modxcms.com/extras/repository/10>