

Add-on Development

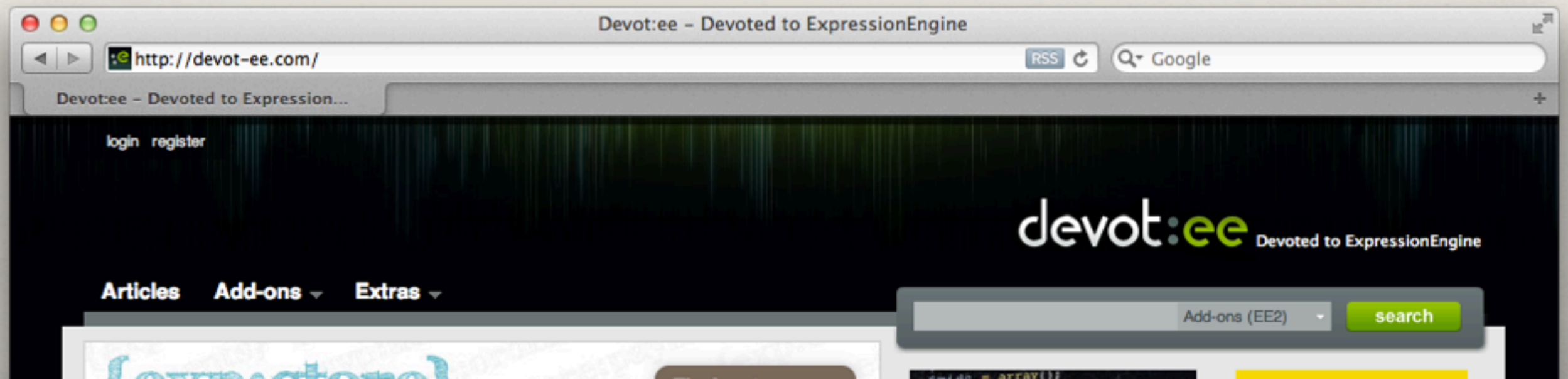
Think of this like a quick start guide...

Mark Huot

Devot:ee

<http://www.devot-ee.com>

- ❖ 1,445 catalogued add-ons
- ❖ 815 compatible with EE 2.x (that's 56%!)
- ❖ 231 commercial EE 2.x add-ons (that's 28%)
- ❖ 138 field types (that's 17%)





Geode

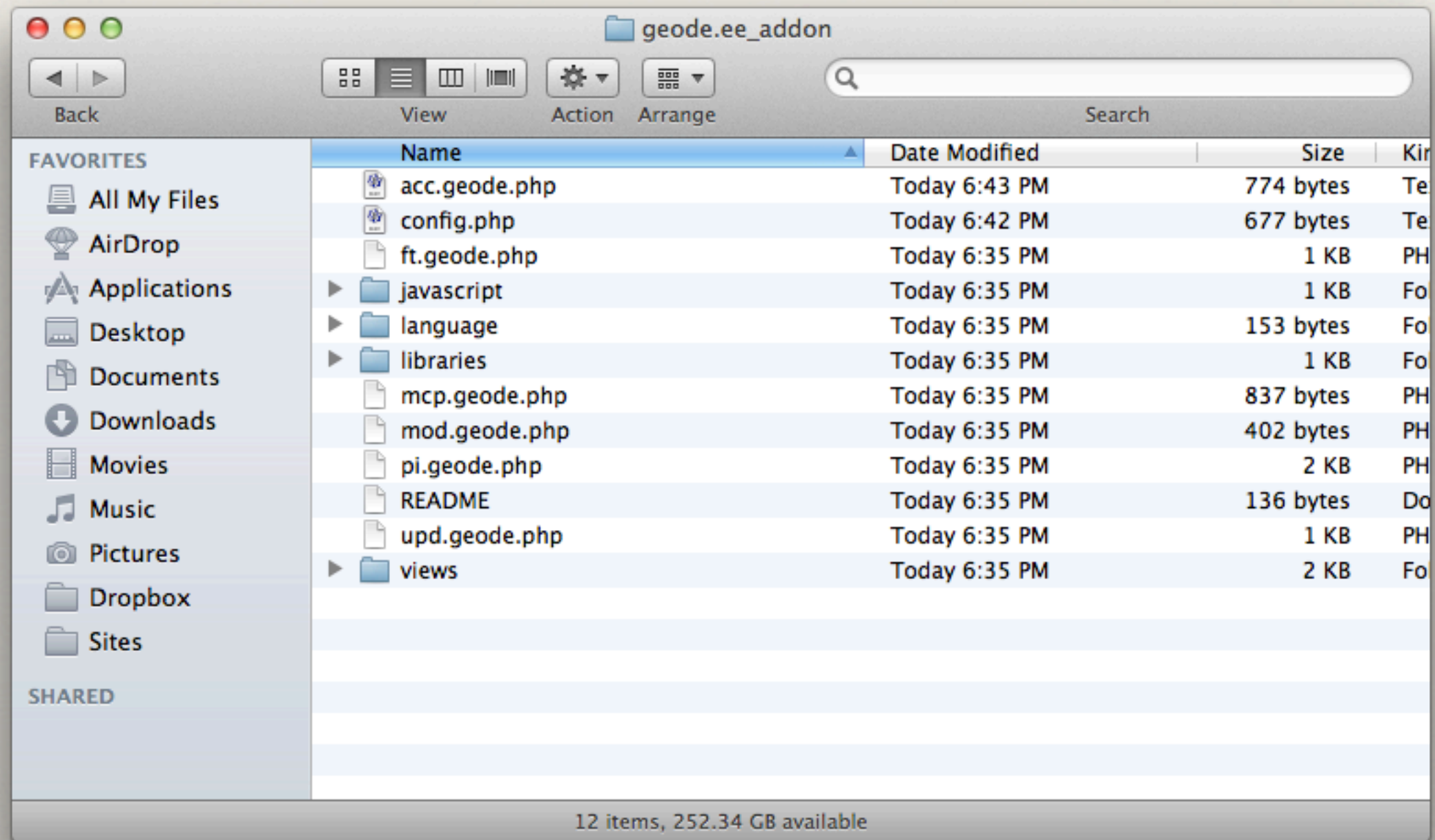
Gecoding for ExpressionEngine 2.x

https://github.com/markhuot/geode.ee_addon

What's in an add-on?

- ❖ Fieldtype
- ❖ Plugin
- ❖ Module
- ❖ Accessory
- ❖ Extension

Folder Structure



Naming

- ❖ Pick a unique name (search devot-ee.com)
- ❖ Pick a custom prefix

```
class Geode  
class Geode_mcp  
class Geode_upd  
class Geode_ft
```

```
class MH_Geode  
class MH_Geode_mcp  
class MH_Geode_upd
```


Naming

```
class Geode
```

```
class Geode_mcp
```

```
✧ class Geode_upd
```

```
class Geode_ft
```

```
✧ Pick a custom prefix
```

```
class MH_Geode
```

```
class MH_Geode_mcp
```

```
class MH_Geode_upd
```

```
class MH_Geode_ft
```


Fieldtype (ft)

Fieldtype

- ❖ New in EE 2.x
- ❖ The core of the Channel API
- ❖ Fieldtypes form the building blocks for so much of what happens within the control panel.
- ❖ Several first-party fieldtypes ship with EE
 - ❖ Text input
 - ❖ Textarea
 - ❖ Date
 - ❖ Relationship

New Entry: Test Channel



Publish

Date

Categories

Options

show toolbar

▼ * Title

▼ URL Title

▼ geode



Submit

Fieldtype

- ❖ Object oriented programming
- ❖ Three required functions (at minimum)

```
<?php
```

```
require_once PATH_THIRD.'geode/config'.EXT;
```

```
class Geode_ft extends EE_Fieldtype  
{
```

```
    public $info = array(  
        'name'      => GEODE_NAME,  
        'version'   => GEODE_VERSION
```



```
<?php
```

```
require_once PATH_THIRD.'geode/config'.EXT;
```

```
* class Geode_ft extends EE_Fieldtype  
{
```

```
*     public $info = array(  
        'name'      => GEODE_NAME,  
        'version'   => GEODE_VERSION  
    );
```

```
    public function display_field($data)  
    {  
  
    }
```

```
    public function save($data)
```

Tip 1: The Config

- ❖ Standardize naming and version numbers
- ❖ Ensures consistency

```
<?php
```

```
// Name: The human readable name of the  
add-on. This is what
```

```
// appears in the add-ons tab of EE.
```

```
define( 'GEODE_NAME' , 'Geode' );
```

```
// Id: Used to reference the class name  
where relevant (database
```



```
<?php
```

```
// Name: The human readable name of the  
add-on. This is what
```

```
// appears in the add-ons tab of EE.
```

```
define( 'GEODE_NAME' , 'Geode' );
```

```
// Id: Used to reference the class name  
where relevant (database
```

```
// queries and accessory `id` attribute).
```

```
define( 'GEODE_SHORT_NAME' , 'geode' );
```

```
// Description: Displayed in the add-ons  
tab to help users know
```

```
// what they are installing.
```

```
define( 'GEODE_DESCRIPTION' , 'Gecoding for
```

Tip 1: The Config

```
<?php

require_once PATH_THIRD.'geode/config'.EXT;

class Geode_acc {

    var $name          = GEODE_NAME;
    var $id             = GEODE_SHORT_NAME;
    var $version        = GEODE_VERSION;
    var $description    = GEODE_DESCRIPTION;
    var $sections       = array( );
```


Tip 1: The Config

```
<?php
```

```
require_once PATH_THIRD. 'geode/config'.EXT;
```

```
$plugin_info = array(  
    'pi_name'           => GEODE_NAME,  
    'pi_version'        => GEODE_VERSION,  
    'pi_author'         => GEODE_AUTHOR,  
    'pi_author_url'     => GEODE_URL,  
    'pi_description'    => GEODE_DESCRIPTION,  
    'pi_usage'          => Geode::usage()  
);
```

Plugin (pi)

Plugin

- ❖ Used heavily in EE templates
- ❖ Identified by {exp:plugin:code}
- ❖ Used for text formatting
- ❖ Simple applications
 - ❖ Probably shouldn't need database access
 - ❖ Probably shouldn't need multiple files



http://web1.dev/index.php/geode



http://web1.dev/index.php/geode

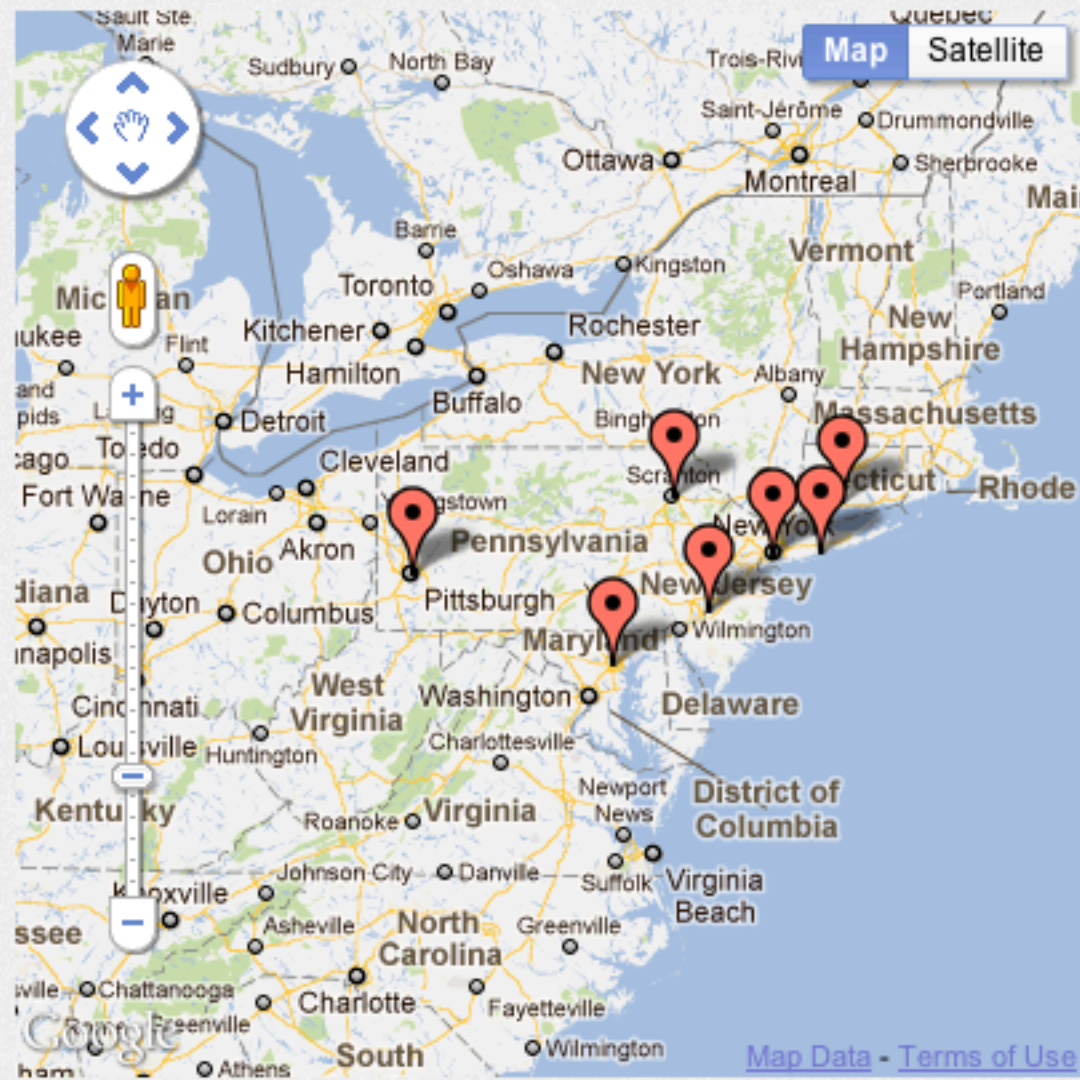


Google

http://web1.dev/index.php/geode



Geode



Plugin

- ❖ Creates template tags
- ❖ Start just like a fieldtype
- ❖ 2 required functions (at minimum)

```
{exp:geode}
```

```
<?php
```

```
require_once PATH_THIRD.'geode/config'.EXT;
```

```
$plugin_info = array(
```

```
<?php
```

```
require_once PATH_THIRD.'geode/config'.EXT;
```

```
$plugin_info = array(  
    'pi_name'           => GEODE_NAME,  
    'pi_version'        => GEODE_VERSION,  
    'pi_author'         => GEODE_AUTHOR,  
    'pi_author_url'     => GEODE_URL,  
    'pi_description'    => GEODE_DESCRIPTION,  
    'pi_usage'          => GEODE_USAGE  
);
```

```
class Geode
```

```
{
```

```
    var $return_data;
```



```
{  
    var $return_data;  
  
    function __construct( $str = ' ' )  
    {  
        $this->EE =& get_instance();  
  
        // Load the view  
        $this->return_data =  
        $this->EE->load->view( 'tag', array(  
            'id' => uniqid(),  
            'data' => $this->get_data()  
        ), TRUE );  
    }  
  
    public function get_data()  
    {  
        // Get the geode fields
```

Tip 2: Views

- ❖ Valid across all add-ons as of EE 2.2.0
- ❖ Won't replace template tags

```
<div
  id="map<?=$id?>"
  class="<?=@$class_name?>"
  style="width:400px; height: 400px;">
</div>
```

```
<script>
(function( )
{
```


Module (upd/mcp/mod)

Module

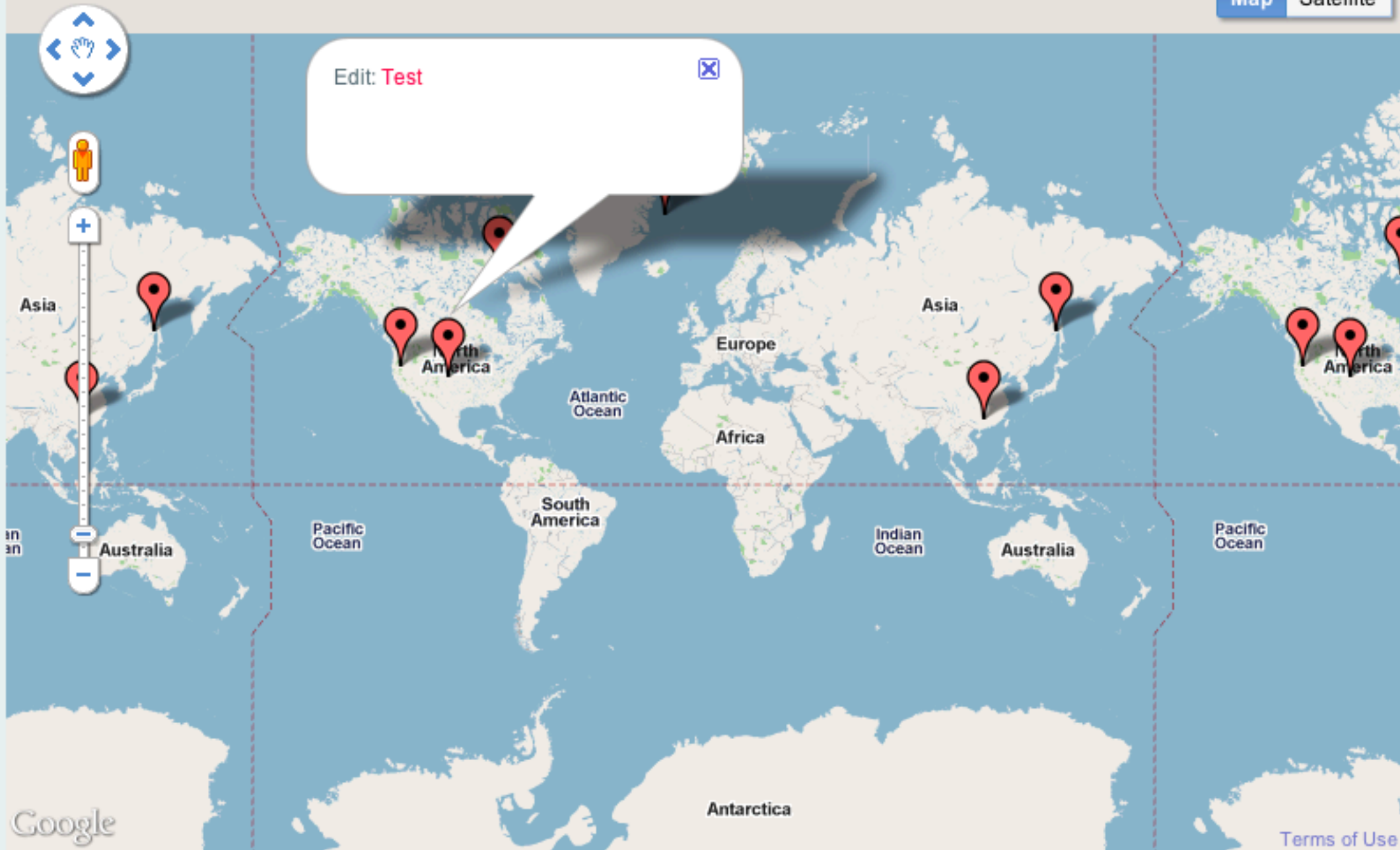
- ❖ “Enhanced plugins”
- ❖ May have a control panel interface
- ❖ May interact with the database

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Geode

[Map](#)[Satellite](#)

Edit: **Test**



The installer (upd)

- ❖ Open ended install

```
<?php
```

```
require_once PATH_THIRD.'geode/config'.EXT;
```

```
class Geode_upd  
{
```

```
    var $module_name = GEODE_NAME;
```

```
    var $version      = GEODE_VERSION;
```

```
    public function construct()
```



```
<?php
```

```
require_once PATH_THIRD. 'geode/config'.EXT;
```

```
class Geode_upd  
{
```

```
    var $module_name = GEODE_NAME;
```

```
    var $version      = GEODE_VERSION;
```

```
    public function __construct( )
```

```
{
```

```
        $this->EE =& get_instance();
```

```
}
```

```
    public function install( )
```

```
{
```

```
$this->EE =& get_instance();  
}  
  
public function install()  
{  
    $data = array(  
        'module_name' => $this->module_name,  
        'module_version' => $this->version,  
        'has_cp_backend' => 'y',  
        'has_publish_fields' => 'n'  
    );  
  
    $this->EE->db->insert( 'modules',  
        $data );  
  
    return TRUE;  
}
```


__construct

```
class Geode {  
    public function __construct() {  
        $this->EE =& get_instance();  
    }  
}
```

```
class Geode_upd {  
    public function __construct() {  
        $this->EE =& get_instance();  
    }  
}
```

```
class Geode_mcp {  
    public function construct() {  
    }  
}
```

Tip 3: Inheritance

- ❖ Use inheritance

```
<?php
```

```
require_once PATH_THIRD.'geode/config'.EXT;  
require_once PATH_THIRD.'geode/mhbase'.EXT;
```

```
class Geode_upd extends MHBase_upd  
{
```

```
    var $module_name = GEODE_NAME;  
    var $version      = GEODE_VERSION;
```


<?php

require_once PATH_THIRD. 'geode/config'.EXT;
require_once PATH_THIRD. 'geode/mhbase'.EXT;

class Geode_upd **extends** MHBase_upd
{

 var \$module_name = GEODE_NAME;
 var \$version = GEODE_VERSION;

}

Tip 3: Inheritance

- ❖ Use inheritance

```
<?php
```

```
class MHBase
```

```
{
```

```
    public function __construct( )
```

```
    {
```

```
        $this->EE =& get_instance( );
```

```
    }
```

```
}
```

```
class MHPage und extends MHBase
```



```
class MHBase_upd extends MHBase
{
    public function install()
    {
        $data = array(
            'module_name' => $this->module_name,
            'module_version' => $this->version,
            'has_cp_backend' => 'y',
            'has_publish_fields' => 'n'
        );

        $this->EE->db->insert( 'modules',
            $data );

        return TRUE;
    }

    public function update( $current = '' )
```

Tip 3: Inheritance

- ❖ Use inheritance

```
<?php
```

```
require_once PATH_THIRD.'geode/config'.EXT;  
require_once PATH_THIRD.'geode/mhbase'.EXT;
```

```
class Geode_upd extends MHBase_upd  
{
```

```
    var $module_name = GEODE_NAME;  
    var $version      = GEODE_VERSION;
```



```
var $module_name = GEODE_NAME;  
var $version      = GEODE_VERSION;
```

```
public function install()  
{  
    $result = parent::install();  
  
    if ($result)  
    {  
        // Install actions  
    }  
  
    return $result;  
}  
  
}
```

The tag (mod)

- ❖ Creates template tags
- ❖ Yes, that is the same as a plugin

```
<?php
```

```
require_once PATH_THIRD.'geode/mhbase'.EXT;
```

```
class Geode extends MHBase  
{
```

```
    function __construct( $str = ' ' )  
    {
```


The UI (mcp)

- ❖ Creates the user interface for the module
- ❖ A, more or less, traditional MVC approach
- ❖ Full access to the entire EE UI library

```
<?php
```

```
require_once PATH_THIRD. 'geode/mhbase'.EXT;
```

```
class Geode_mcp extends MHBase  
{
```

```
    public function index( )
```

Accessory (acc)

Accessories

- ❖ Control panel “widgets”
- ❖ Live, visually, at the bottom of the control panel
- ❖ Typically separated into vertical panes

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Gecoded Entries



The wrapper (acc)

- ❖ Strictest of the add-on types
- ❖ UI is (more or less) predefined

```
<?php
```

```
require_once PATH_THIRD.'geode/config'.EXT;  
require_once PATH_THIRD.'geode/mhbase'.EXT;
```

```
class Geode_acc extends MHBase {
```

```
    var $name          = GEODE_NAME;
```

```
    var $id             = GEODE_SHORT_NAME;
```


Extension (ext)

Extension

- ❖ The kitchen sink...

Extension

- ❖ Similar setup to accessories
- ❖ Typically used in conjunction with another add-on type.

```
<?php
```

```
require_once PATH_THIRD. 'geode/config'.EXT;  
require_once PATH_THIRD. 'geode/mhbase'.EXT;
```

```
class Geode_ext extends MHBase  
{
```

```
public $name = GEODE_NAME;
```

```
require_once PATH_THIRD.'geode/config'.EXT;  
require_once PATH_THIRD.'geode/mhbase'.EXT;
```

```
class Geode_ext extends MHBase
```

```
{
```

```
    public $name          = GEODE_NAME;
```

```
    public $version       = GEODE_VERSION;
```

```
    public $description    = GEODE_DESCRIPTION;
```

```
    public $docs_url      = GEODE_URL;
```

```
    public $settings_exist = 'n';
```

```
    public $settings      = array();
```

```
    public $required_by   = array('Module');
```

```
    public function __construct($settings='')
```

```
{
```

```
        $this->EE =& get_instance();
```

```
        $this->settings = $settings;
```

```
}
```


Package Settings | ExpressionEngine

http://web1.dev/admin.php?S=f11c59a0d90f27321786f7e653a9f551b0b4414e&D=cp&C=addons&M=p

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Package Settings

| Component | Status | Current Status |
|-----------|--|----------------|
| Extension | <input type="radio"/> Install <input checked="" type="radio"/> Uninstall | Not Installed |
| Module | <input type="radio"/> Install <input checked="" type="radio"/> Uninstall | Not Installed |

Submit

ExpressionEngine Info

ExpressionEngine v2.3.1 - Build: date 20111017 - © Copyright 2003 - 2011 EllisLab, Inc.

Script executed in 0.8456 seconds - 18 SQL queries used

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Package Settings

| Component | Status | Current Status |
|-----------|--|----------------|
| Extension | Required by: Module | Not Installed |
| Module | <input type="radio"/> Install <input checked="" type="radio"/> Uninstall | Not Installed |

Submit

ExpressionEngine Info

ExpressionEngine v2.3.1 - Build: date 20111017 - © Copyright 2003 - 2011 EllisLab, Inc.

Script executed in 5.1985 seconds - 18 SQL queries used

Tip 4: Requirements

- ❖ Only used by extensions...
- ❖ Simplifies install process

```
public $name           = GEODE_NAME;  
public $version        = GEODE_VERSION;  
public $description    = GEODE_DESCRIPTION;  
public $docs_url       = GEODE_URL;  
public $settings_exist = 'n';  
public $settings       = array();  
public $required_by    = array( 'Module' );  
  
public function construct( $settings='' )
```


Tips

- ❖ Use a config file
- ❖ Make good use of view files
- ❖ Extend your classes, don't repeat yourself
- ❖ Require your extensions

Standards

EE Development Guidelines

- ❖ General Style and Syntax
- ❖ View Files and PHP Alternate Syntax
- ❖ Performance

6. In "Default line"

PHP Closing

The PHP closing
introduced by the
reason, all PHP
root. This allow

```
for ($j = 0; $j <
```

```
$str  
$buffer  
$group_id  
$last_city
```

Commenting

Setting Strings

Sometimes it is desirable
legibility, instead of a te

INCORRECT:

Performance

- [POSIX Extended Regular Expressions](#)
- [Perl-compatible \(PCRE\) Regular Expressions](#)
- [PCRE Subpattern Capturing](#)
- [PCRE Backreference](#)
- [Avoid Unnecessary String Operations](#)
- [Use sprintf instead of printf](#)
- [Smart Substring Matching](#)

CORRECT:

```
sprintf('Currently editing the %s file', $file);  
sprintf('%s is currently editing the %s file', $user, $file);
```

Smart Substring Matching

Security Guidelines

- ❖ Cross Site Scripting (XSS)
- ❖ Outputting Data to the Page
 - ❖ Use the Typography class when outputting to a page.
 - ❖ Allows Safe HTML
 - ❖ Encodes ExpressionEngine tags
- ❖ SQL Injection Prevention
- ❖ Secure Forms

Thanks!

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