Zend Framework in 2009

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New York PHP
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Speaker

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Zend Certified Engineer—Zend Framework

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Writer about PHP for IBM i5 community

Mentor for teams learning Zend Framework

Tonight we will cover:

- **Zend Framework (ZF) basics**
  - What, why, how
- **ZF’s flexible model-view-controller (MVC) implementation**
  - Keeps your code organized logically and handles “plumbing”
- **Components (libraries)**
  - Including classes to access web services
- **What’s new and what’s next**

What is ZF?

- **An open source, MVC-based PHP framework**
- **Is it a framework? Yes**
  - "Glue" to build applications
  - Components developed, tested, distributed together
- **But loosely coupled**
  - “Use at will” architecture
  - Dependencies documented in manual
    - **Section A.1.4. Zend Framework Dependencies**

Birth and early years

- **2005: PHP Collaboration Project at ZendCon**
  - Started as collection of components but coalesced
  - PHP 5, object oriented (OO) from the start
  - Set example of OO design patterns and practices
- **July 2007: GA version 1.0**
- **February 17, 2009: version 1.75**
- **Frequent minor releases**

What’s it made of?

- **Robust, high quality object-oriented PHP 5 libraries**
  - Test-driven development
    - 80+% code coverage
  - Peer review of all code
  - Coding standards
    - http://framework.zend.com/manual/en/coding-standard.html
  - Components not released until documented in manual and inline
    - phpDocumentor format: http://phpdoc.org

Flexible License

- **“New BSD” license**
  - http://framework.zend.com/license
  - Use code however you like
- **Apache-like contributor license agreement (CLA)**
  - Safety for users/corporations
  - All original code; no patent claims

Why I use it

- **As I learn what it can do, the less boring code I write**
  - At first, I reinvented the wheel
  - Realized that ZF already provided functionality
  - I can write less “plumbing” code
- **Can customize and extend**
  - Numerous integration points
  - Interfaces and small methods give you control
- **It keeps up with trends and APIs**
  - Compatibility with diverse database systems, authentication and other APIs
  - Including IBM i (AS/400)’s unique version of db2
  - Web services

Community

- **Contributors include individuals and companies. Companies include:**
  - Zend (of course)
  - IBM
  - OmniTI

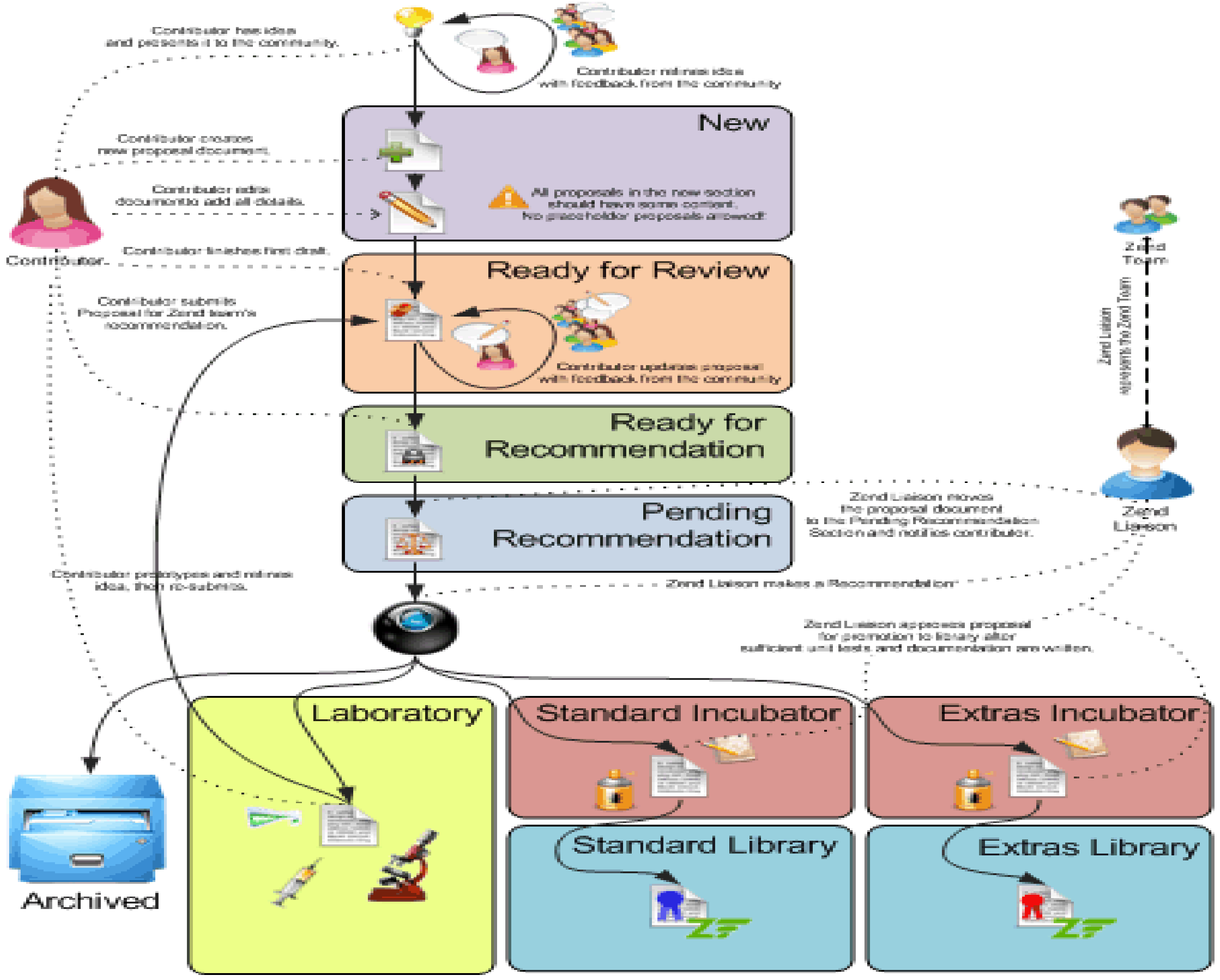
- **Technology partners:**
  - Adobe, Google, IBM, Microsoft, nirvanix, StrikeIron

- **Help available at zfforum.com, e-mail lists, #zftalk IRC**

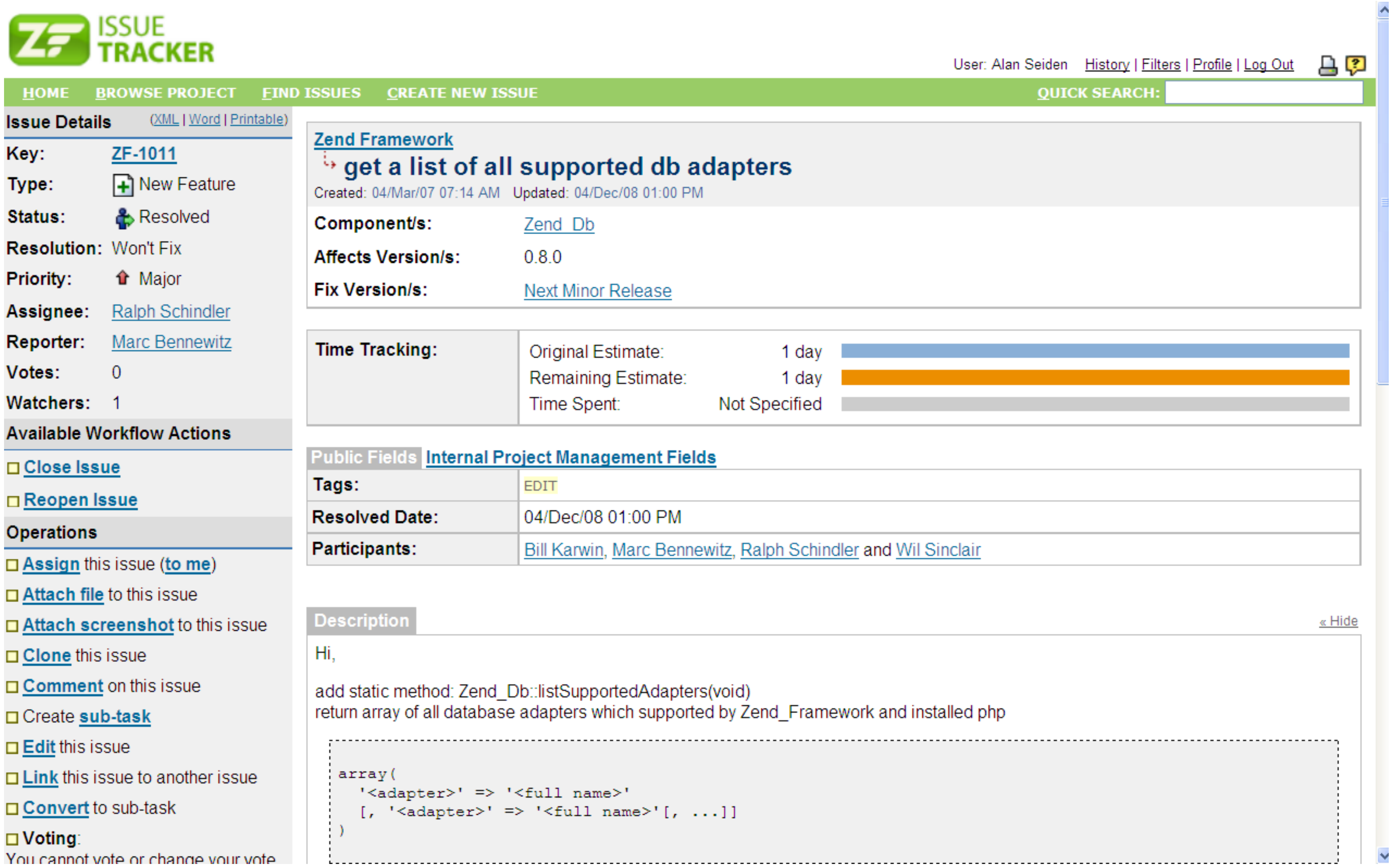
Requirements for Zend Framework 1.75

- **Required:**
  - PHP 5.2.4+
- **Optional:**
  - mod_rewrite
    - Recommended; route URLs through bootstrap file
  - Extensions as needed. Examples:
    - ext/session in Zend_Session
    - ext/gd in Zend_Captcha
  - PHPUnit 3.3.0 if use Zend_TestPHPUnit
- **Full list of reqs and dependencies:**
  - framework.zend.com/manual/en/requirements.html

How it's developed


Contributor has idea
and presents it to the community.
Contributor refines idea
with feedback from the community
New
Contributor creates
new proposal document.
Contributor edits
document to add all details.
All proposals in the new section
should have some content.
No placeholder proposals allowed!
Contributor
Contributor finishes first draft.
Ready for Review
Contributor submits
Proposal for Zend team's
recommendation.
Contributor updates proposal
with feedback from the community
Ready for Recommendation
Zend Team
Zend Liaison
represents the Zend Team
Zend Liaison
Zend Liaison moves
the proposal document
to the Pending Recommendation
Section and notifies contributor.
Pending Recommendation
Contributor prototypes and refines
idea, then re-submits.
Zend Liaison makes a Recommendation
Zend Liaison approves proposal
for promotion to library after
sufficient unit tests and documentation are written.
Laboratory
Standard Incubator
Extras Incubator
Standard Library
Extras Library
Archived

Issue tracker


ISSUE TRACKER
User: Alan Seiden History | Filters | Profile | Log Out
HOME BROWSE PROJECT FIND ISSUES CREATE NEW ISSUE QUICK SEARCH:

Issue Details (XML | Word | Printable)

Key:	ZF-1011
Type:	New Feature
Status:	Resolved
Resolution:	Won't Fix
Priority:	Major
Assignee:	Ralph Schindler
Reporter:	Marc Bennewitz
Votes:	0
Watchers:	1

Available Workflow Actions

- Close Issue
- Reopen Issue

Operations

- Assign this issue (to me)
- Attach file to this issue
- Attach screenshot to this issue
- Clone this issue
- Comment on this issue
- Create sub-task
- Edit this issue
- Link this issue to another issue
- Convert to sub-task
- Voting:

You cannot vote or change your vote

Zend Framework

get a list of all supported db adapters

Created: 04/Mar/07 07:14 AM Updated: 04/Dec/08 01:00 PM

Component/s:	Zend_Db
Affects Version/s:	0.8.0
Fix Version/s:	Next Minor Release

Time Tracking:

Original Estimate:	1 day	
Remaining Estimate:	1 day	
Time Spent:	Not Specified	

Public Fields | Internal Project Management Fields

Tags:	EDIT
Resolved Date:	04/Dec/08 01:00 PM
Participants:	Bill Karwin, Marc Bennewitz, Ralph Schindler and Wil Sinclair

Description « Hide

Hi,

add static method: Zend_Db::listSupportedAdapters(void)
return array of all database adapters which supported by Zend_Framework and installed php

```
array(
  '<adapter>' => '<full name>'
  [, '<adapter>' => '<full name>'[, ...]]
)
```

Timesaving conventions

- **Autoloader**
  - PEAR convention for class/file names
    - Example: Search_Product = Search/Product.php
    - Put this in bootstrap file:

```
require_once 'Zend/Loader.php';
Zend_Loader::registerAutoload();
```

    - Now you can do:

```
$prod = new Search_Product();
```

- **Fluent interface**

```
$select = $db->select()
    ->from( ...specify table and columns... )
    ->where( ...specify search criteria... )
    ->order( ...specify sorting criteria... );
```

Model-View-Controller

Model – View – Controller design pattern

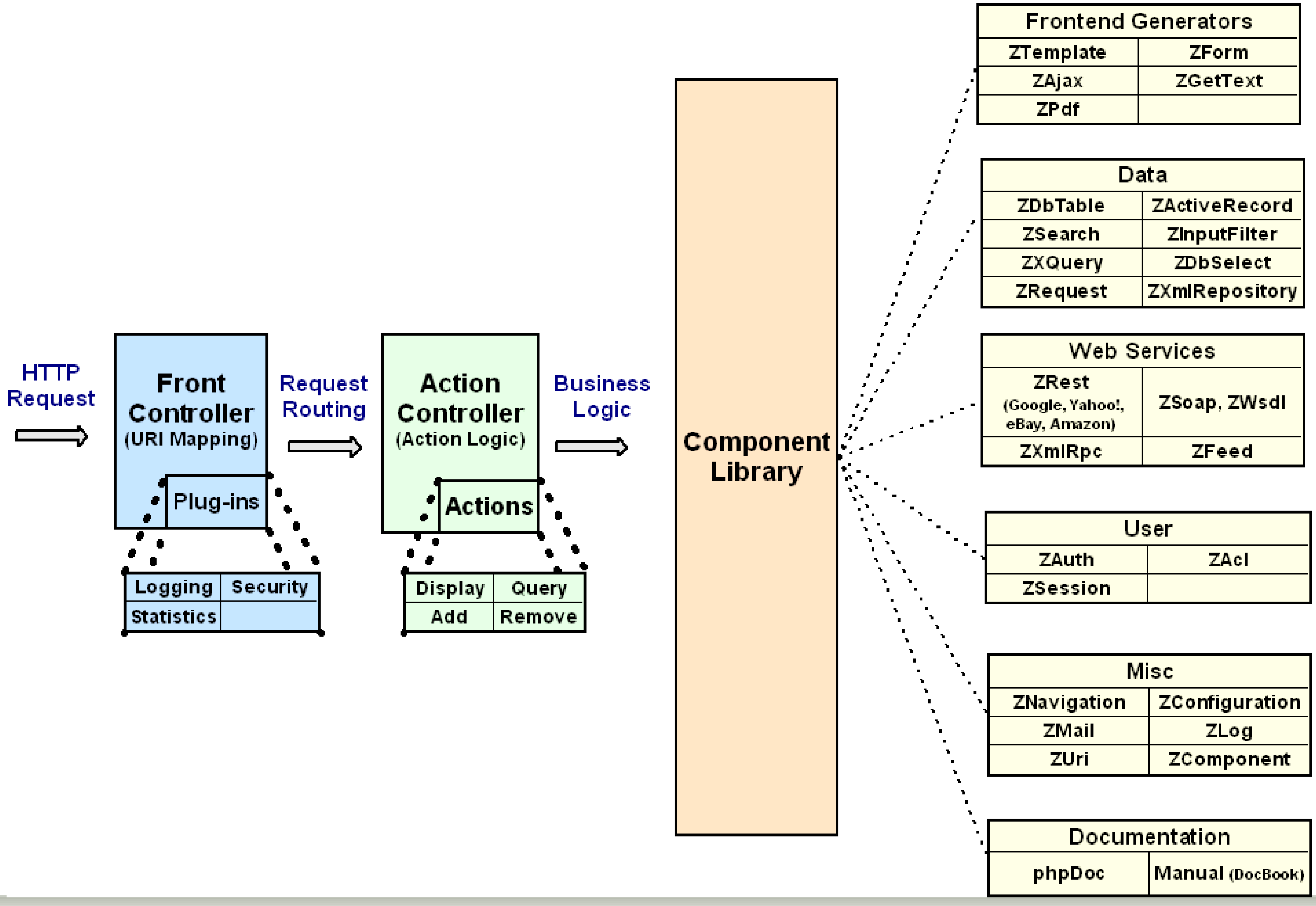
- **Model**
  - Classes that access your data
- **View**
  - Templates to present that data (e.g. HTML for browser)
- **Controller (action controller)**
  - Application flow
  - Connects model and view
- (Bonus: front controller!)

Front Controller

Front controller pattern

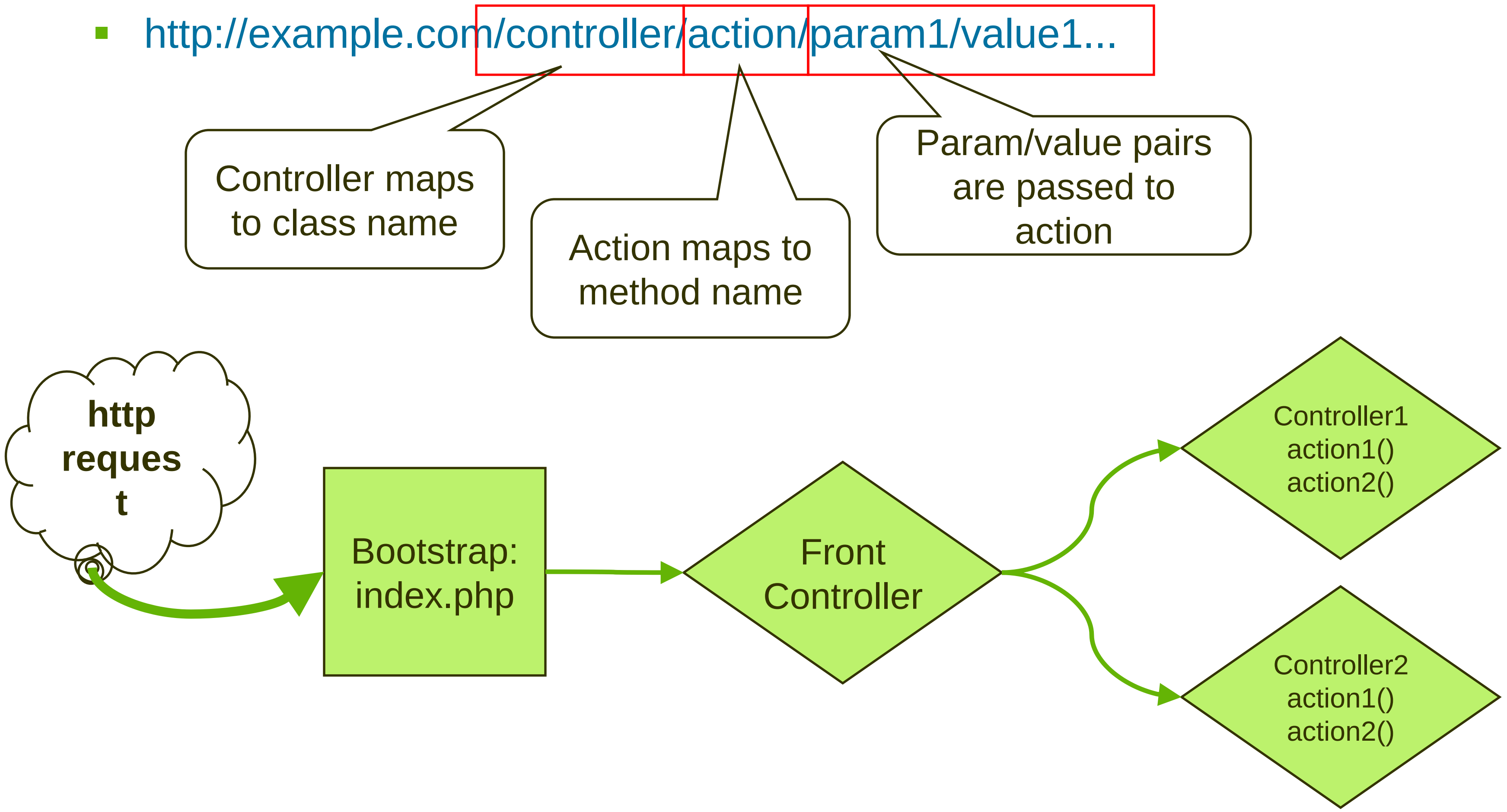
- **Front controller sits in front of MVC**
- **All PHP requests funneled through index.php (bootstrap file)**
- **Front controller gets your application started**
  - Initializes request/response objects
  - Can handle common settings and functionality
    - “Include” paths
    - Configurations
    - Location of MVC components (if necessary)
    - Logging, db (perhaps), authentication/authorization
  - Converts URL to a “request” object with distinct parts
  - Routes requests to appropriate action controllers
- **Receives exceptions**

Front controller to action controller



Routes URL request

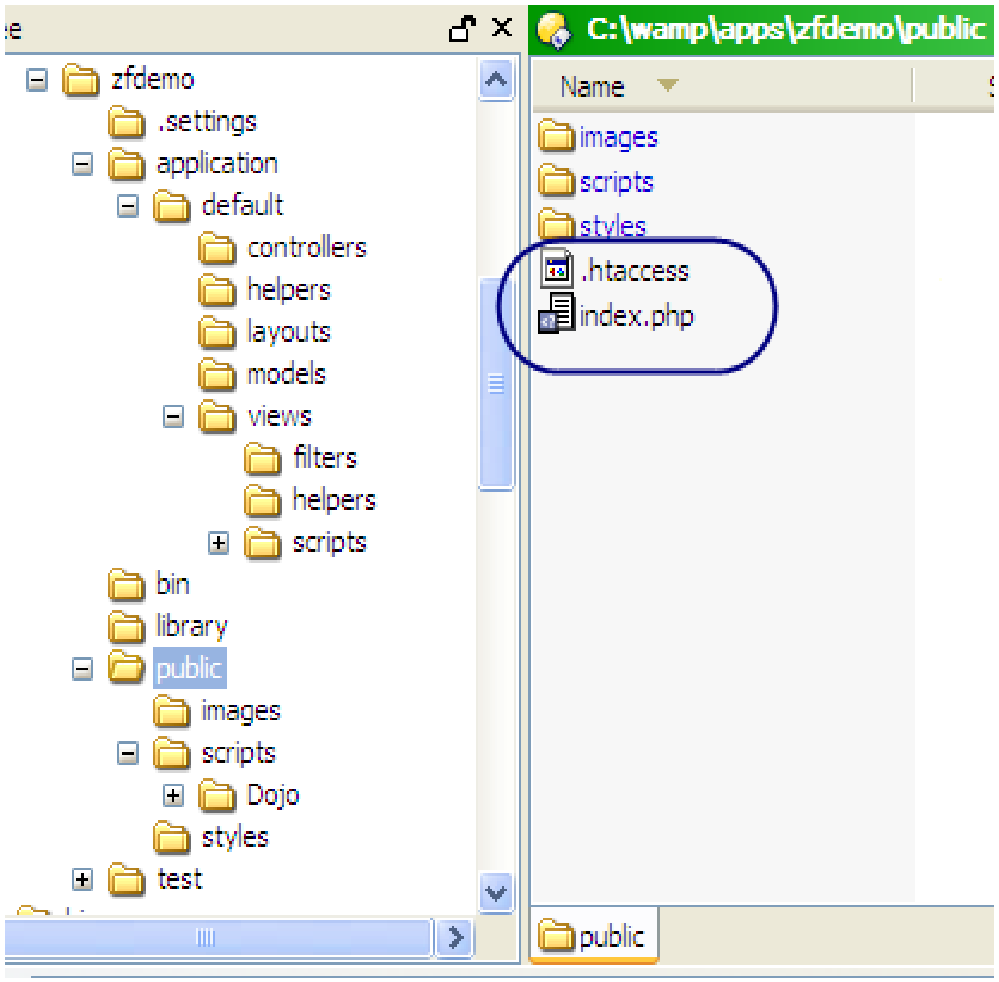
- **Default routing convention:**
  - http://example.com/controller/action/param1/value1...


Controller maps to class name
Action maps to method name
Param/value pairs are passed to action
http request
Bootstrap: index.php
Front Controller
Controller1 action1() action2()
Controller2 action1() action2()

Front controller needs two files in public folder

In document root (public folder):

1. .htaccess redirects requests to bootstrap script (index.php)
2. index.php instantiates Front Controller



Front controller file #1: .htaccess

```
RewriteEngine on
# funnel all requests to index.php
# except requests for static resources
RewriteRule !\.(js|ico|gif|jpg|png|css)$ index.php
```

Front controller file #2: index.php

```
<?php
// bootstrap file

setincludepath('.' . PATHSEPARATOR . '../library' .
   PATHSEPARATOR . '../application/default/models/' .
   PATHSEPARATOR . getincludepath());

// Prepare the front controller
$frontController = Zend_Controller_Front::getInstance();

// Dispatch the request using the front controller
$frontController->dispatch();
```

Action Controller

Action Controller

- **Controller classes handle groups of request URLs**

  http://example.com/**controller**/action

  Default: IndexController

  - Organizes and groups functionality
  - One class (extending Zend_Controller_Action) for each controller

- **Action methods in each controller class handle requests**

  http://example.com/controller/**action**

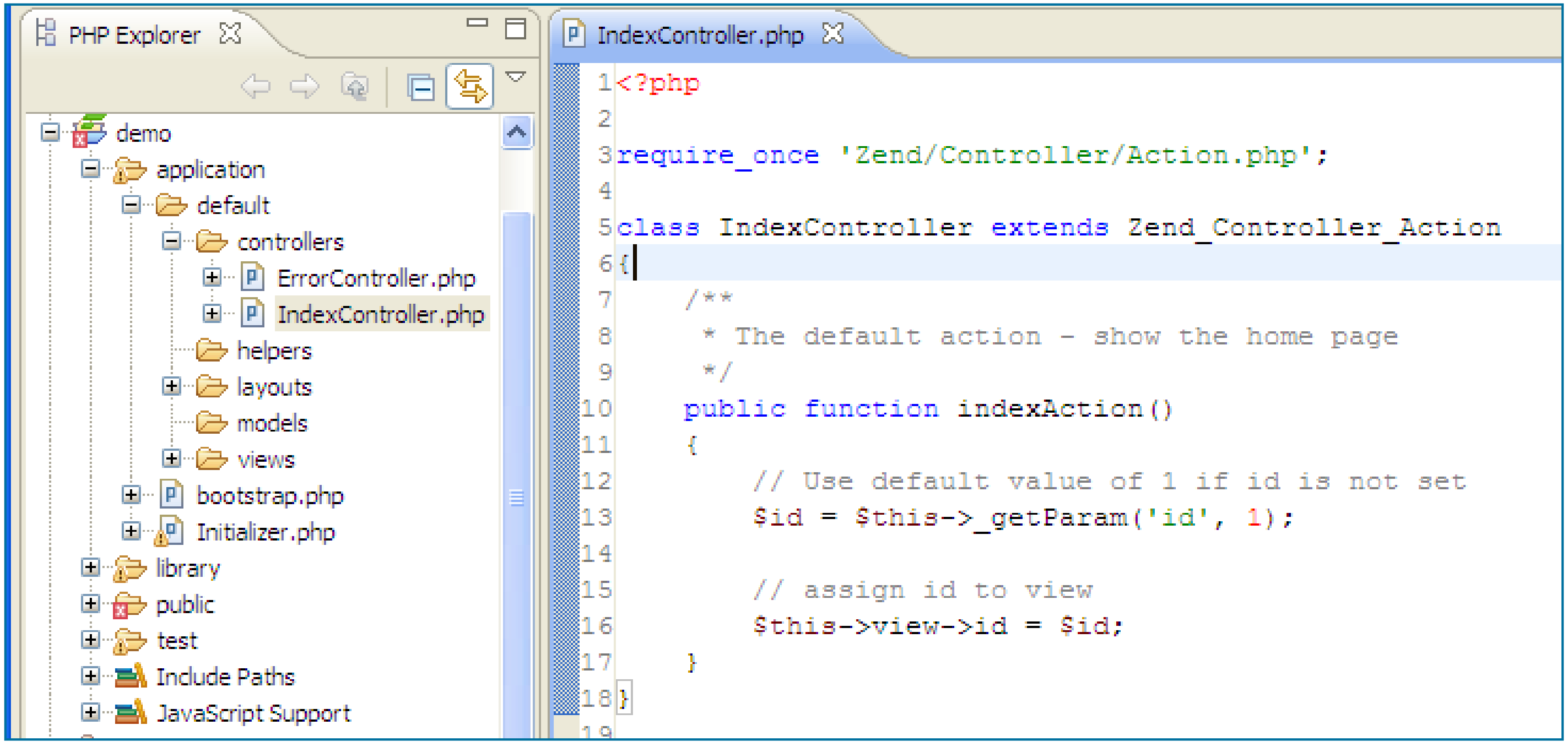
  Default: indexAction()

  - **Named like *action*Action()**
    - **Example: If *action* is “edit” then method is editAction()**

More controller functionality

- **Several standard methods help organize and control the flow**
  - init() – called by the constructor
  - preDispatch() – called before the action’s method
  - postDispatch() – called after the action’s method
- **Utility methods**
  - forward(), redirect(), getParam(), getRequest(), getResponse(), render()
- **Action helpers add functionality**
  - Built-in helpers. Example: gotoSimple()
  - Your own helpers
  - Avoids the need to build your own base controller class

Controller example



```php
<?php

require_once 'Zend/Controller/Action.php';

class IndexController extends Zend_Controller_Action
{
    /**
     * The default action - show the home page
     */
    public function indexAction()
    {
        // Use default value of 1 if id is not set
        $id = $this->_getParam('id', 1);

        // assign id to view
        $this->view->id = $id;
    }
}
```

Action helpers

- **They extend Zend_Controller_Action_Helper_Abstract**
- **Built-in action helpers**
  - ActionStack
  - AjaxContext
  - AutoComplete: Dojo, Scriptaculous
  - ContextSwitch
  - FlashMessenger
  - Json
  - Redirector
  - Url
  - ViewRenderer
- **Create your own**
  - Place in the "My/Helper/" directory of your library (or any directory on your includepath)

Action helper example: Redirector gotoSimple()

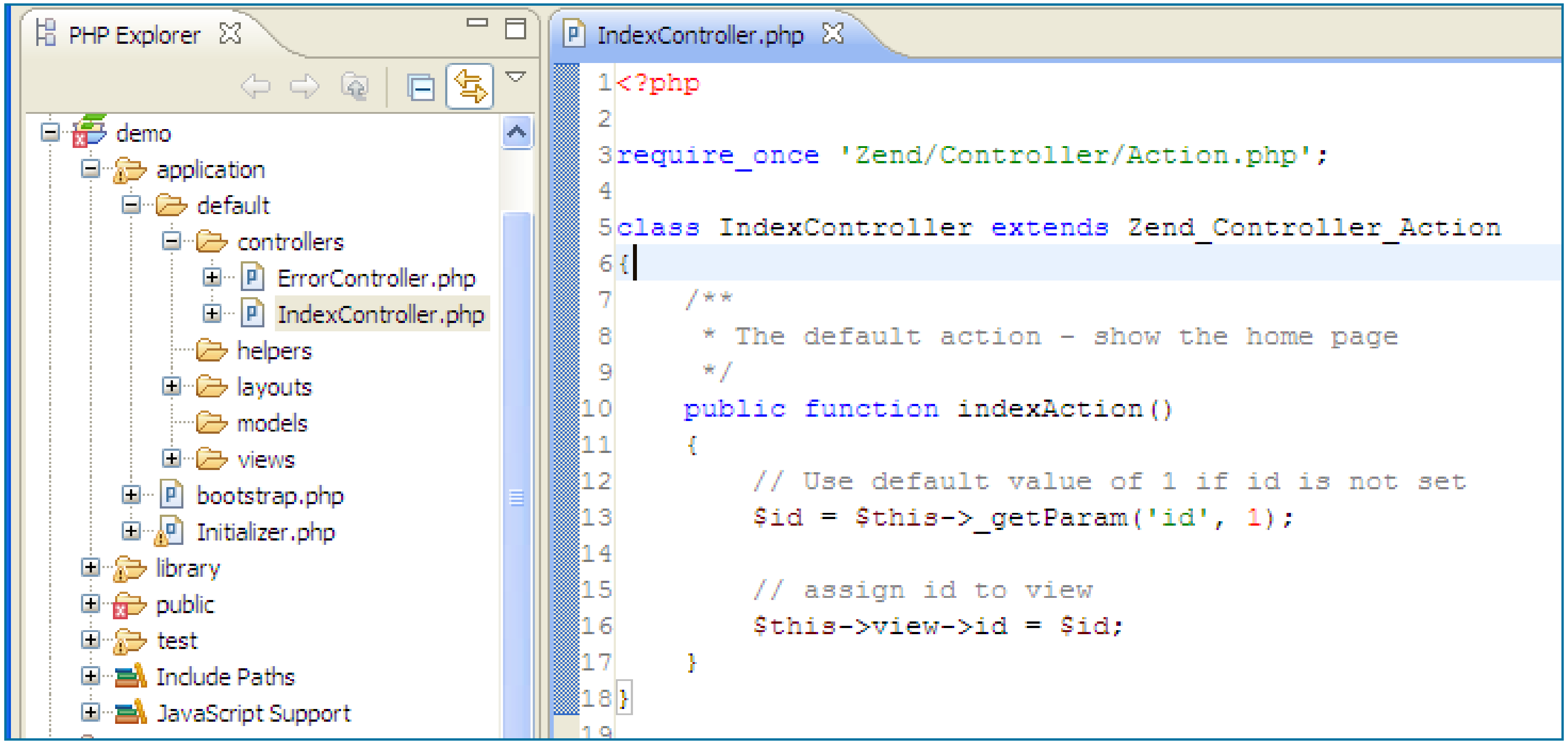
```
class Forward_Controller extends Zend_Controller_Action
    {
        protected $redirector = null;

        public function init()
        {
            $this->redirector = $this->_helper->getHelper('Redirector');
        }

        public function myAction()
        {
            /* do some stuff */

            // Redirect to 'my-action' of 'my-controller' in the current
            // module, using the params param1 => test and param2 => test2
            $this->redirector->gotoSimple('my-action',
                                          'my-controller',
                                          null,
                                          array('param1' => 'test',
                                                'param2' => 'test2'
                                               )
                                          );
        }
    }
```

View

View

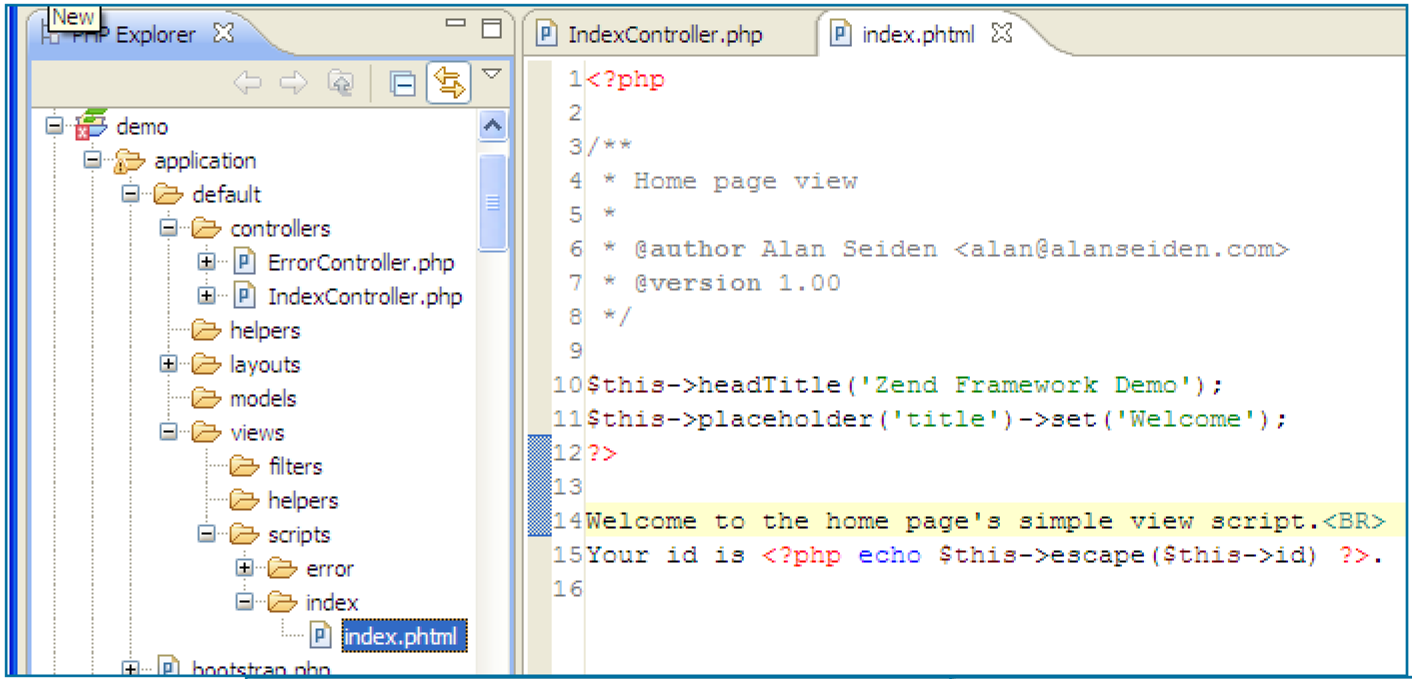
- **Scripts (templates)**
  - PHP-based script templates to present data
  - Should contain only display logic, not business logic
  - Default naming: “myaction.phtml”
- **Helpers**
  - Classes and methods that provide reusable view functionality
    - Examples of built in view helpers: escape(), formText(), partial(), partialLoop(), headTitle()
    - Write your own, too
- **Output filters**
- **Layout**
- **Placeholders**

Controller (again)…leads to view

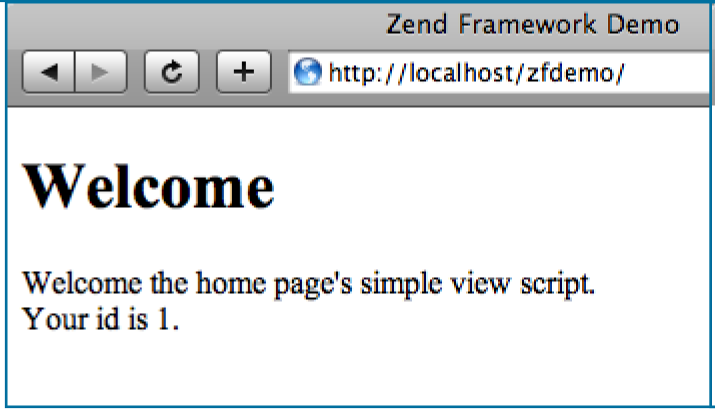


```php
<?php

require_once 'Zend/Controller/Action.php';

class IndexController extends Zend_Controller_Action
{
    /**
     * The default action - show the home page
     */
    public function indexAction()
    {
        // Use default value of 1 if id is not set
        $id = $this->_getParam('id', 1);

        // assign id to view
        $this->view->id = $id;
    }
}
```

View script automatically rendered

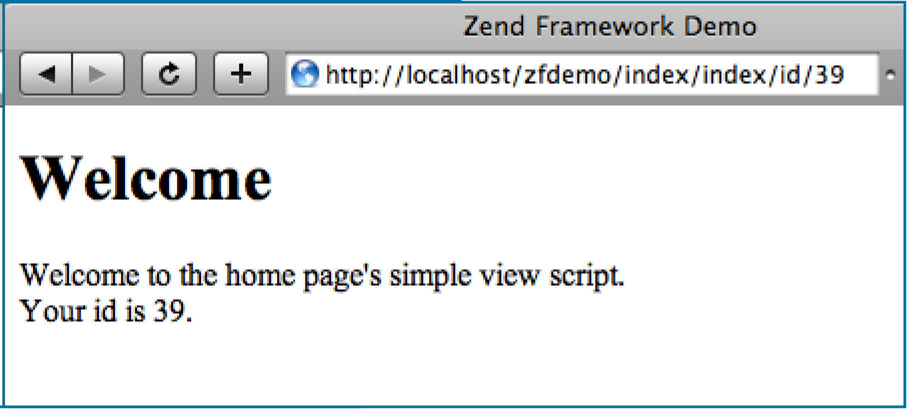


```
<?php

/**
 * Home page view
 *
 * @author Alan Seiden <alan@alanseiden.com>
 * @version 1.00
 */

$this->headTitle('Zend Framework Demo');
$this->placeholder('title')->set('Welcome');
?>

Welcome to the home page's simple view script.<BR>
Your id is <?php echo $this->escape($this->id) ?>.
```



Welcome

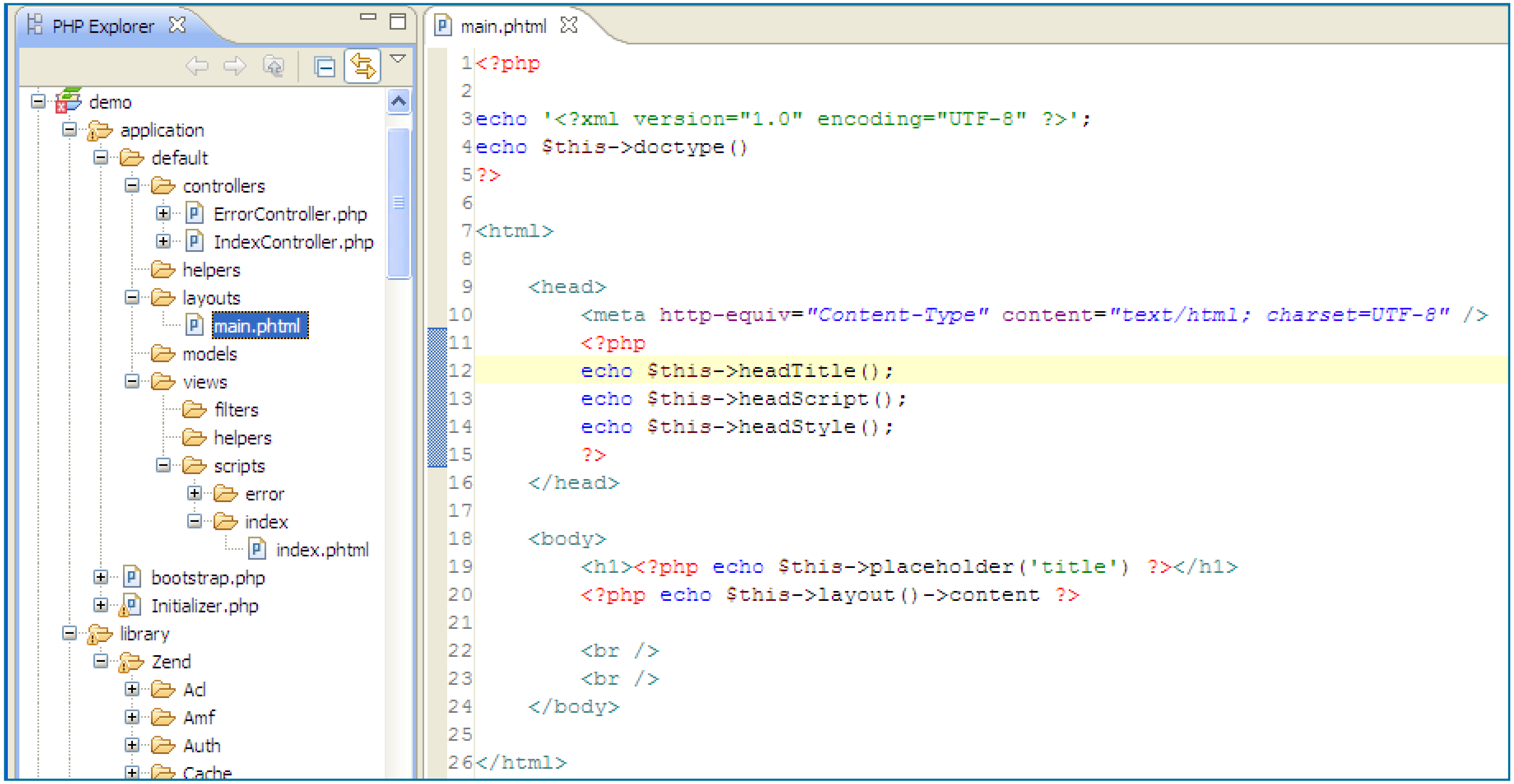
Welcome the home page's simple view script.
Your id is 1.



Welcome

Welcome to the home page's simple view script.
Your id is 39.

Zend_Layout



```
demo
  application
    default
      controllers
        ErrorController.php
        IndexController.php
      helpers
      layouts
        main.phtml
      models
      views
        filters
        helpers
        scripts
          error
          index
            index.phtml
    bootstrap.php
    Initializer.php
  library
    Zend
      Acl
      Amf
      Auth
      Cache
```

```
<?php

echo '<?xml version="1.0" encoding="UTF-8" ?>';
echo $this->doctype()
?>

<html>

    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
        <?php
        echo $this->headTitle();
        echo $this->headScript();
        echo $this->headStyle();
        ?>
    </head>

    <body>
        <h1><?php echo $this->placeholder('title') ?></h1>
        <?php echo $this->layout()->content ?>

        <br />
        <br />
    </body>

</html>
```

Zend_Layout

- **Two-step view pattern**
  - Uses Zend_View for rendering
- **Placeholders useful for setting javascript, titles, other variable data**
- **Layout view helper**
  - shortcut to layout placeholder
  - These are equivalent:

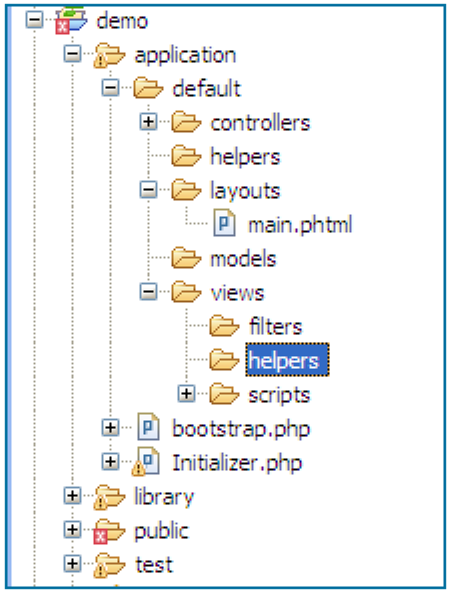
```
// fetch 'content' key using layout helper:
echo $this->layout()->content;

// fetch ‘content' key using placeholder helper:
echo $this->placeholder('Zend_Layout')->content;
```

- **Enable in bootstrap**

```
// accept default path
Zend_Layout::startMvc();

// or specify path
$layoutPath = realpath(dirname(__FILE__) .
'/../application/layouts');
Zend_Layout::startMvc(array("layoutPath“ => $layoutPath));
```

My own view helper: TitleCase.php

```
<?php
Require_once 'Zend/View/Interface.php';

/**
 * TitleCase helper
*/
class Zend_View_Helper_Title_Case {

    public $view;

    public function titleCase($string = '')
    {
        // convert incoming string so that
        // first letter of each word is capitalized/
        // but all other letters are lowercase.
        // Also trim the string.
        return ucwords(strtolower(trim($string)));

    } //(public function titleCase())

    public function setView(Zend_View_Interface $view) {
            $this->view = $view;
    }
}
```



Usage:

```
echo $this->titleCase('mozilla
firefox');

// Mozilla Firefox
```

Model

Model

- **Models are abstract representations of data**
  - Can be extended from:
    - Zend_Db_Table_Row – For database abstraction
    - Zend_Feed_Element – For RSS abstraction
    - Yahoo_Result – For Yahoo abstraction
    - Or any other class that fits your needs
    - Or build your own own abstract representations of your data

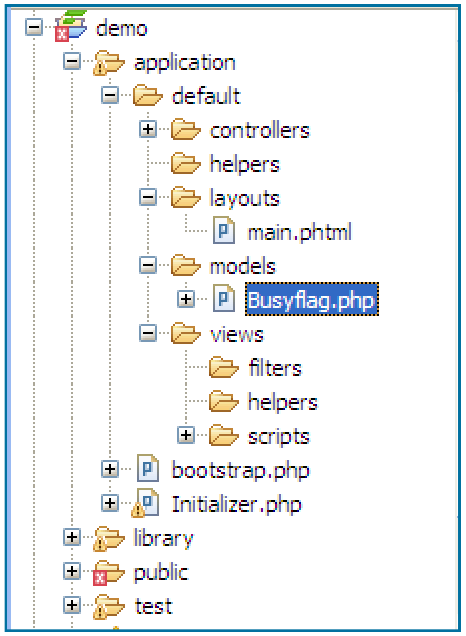
Models (more)

- **Model classes contain business logic to prepare complex data for presentation**
- **I stuff any “weird” code in models so that controllers/views are clean**

Model: example

```php
<?php
// model: Busyflag.php

class Busyflag
{
    // The table name
    protected $name = ‘SYSFLAGS'; // old-fashioned “System 36” table

    // isSiteUp: return true if up, false if down
    public function isSiteUp() {

        // one record, with key "B"
        $sql = "select BZYFLG from {$this->name} where RECID = 'B'";
        $row = SBSDbhelp::getOneRow($sql);

        // true if Y, false otherwise.
        return $row['BZYFLG'] == 'Y';

    } //(public function isSiteUp())
} //(class Busyflag)
```

```php
// usage (from a preDispatch front controller plugin)
$busyFlag = new Busyflag();
if (!$busyFlag->isSiteUp()) {
    // Take user to "site down" page.
    $request->setControllerName("Down");
    $request->setActionName("index");
} //(if (!$busyFlag->isSiteUp()))
```



```
demo
  application
    default
      controllers
      helpers
      layouts
        main.phtml
      models
        Busyflag.php
      views
        filters
        helpers
        scripts
    bootstrap.php
    Initializer.php
  library
  public
  test
```

Controller + Model + View: traditional

```php
<?php
// Controllers/SearchController.php
require_once 'Zend/Controller/Action.php';
class SearchController extends Zend_Controller_Action
{
public function indexAction()
    {
        $prodid = $this->_getParam('prodid');

        // look up product data in model
        $products = new Search_Products();
        $results = $products->find($prodid);

        // assign results to view
            $this->view->results = $results;
    }
}
```

```php
<?php
// views/scripts/search/index.phtml
?>
Products found:<ul>
<?php
foreach ($this->results as $result) {
    echo "<li>{$this->escape($result->prodname)}</b>{$this->escape($result-
>available)}</li>";
}
?>
</ul>
```

MVC your way: custom routing rules

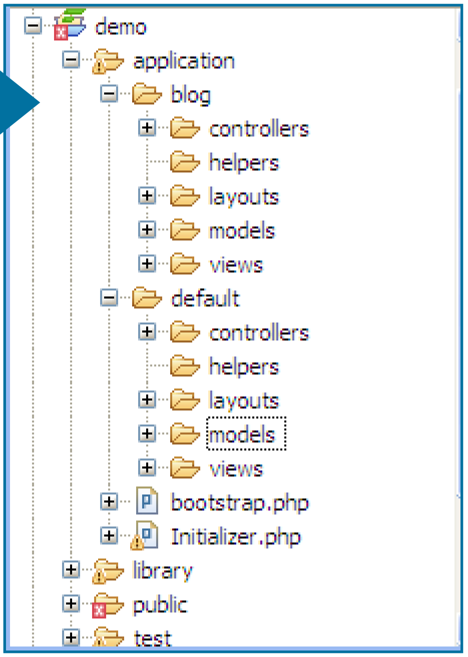
- **Can declare custom routing rules with Zend_Controller_Router_Route classes**
  - Not limited to “controller/action/param” format
  - Example: “year/month/day/title” as in a blog posting:
  - URL: http://myblog.com/2008/02/24/i-like-routers

  -
    ```
    $route = new Zend_Controller_Router_Route(
        ':year/:month/:day/:title',
        array(
            'year'       => 2009,
            'controller' => ‘articles',
            'action'     => 'show'
        ),
        array(
            'year'  => '\d+‘,
            ‘month' => '\d+‘,
            ‘day‘   => '\d+‘,
        )
    );
    $router->addRoute(‘posts', $route);
    ```

MVC your way: multi-MVC

- **Can separate app sections into modules (Mitch P.'s "atomic MVC")**

```
$front->setControllerDirectory(array(
'default' => '/demo/application/controllers',
'blog' => '/demo/application/blog/controllers' ));
```



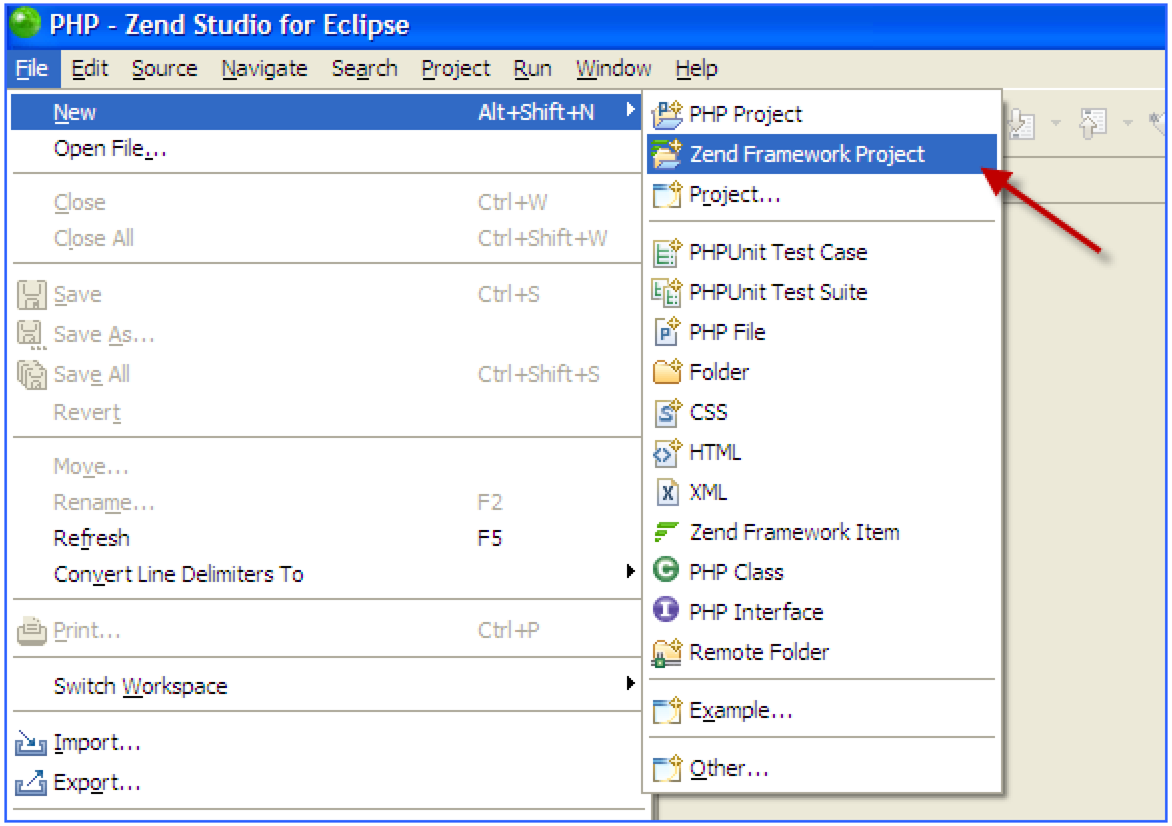
```
demo
  application
    blog
      controllers
      helpers
      layouts
      models
      views
    default
      controllers
      helpers
      layouts
      models
      views
    bootstrap.php
    Initializer.php
  library
  public
  test
```

- **Blog_IndexController is class name of index action controller within blog app/module**
  - URL: example.com/blog or /blog/index or /blog/index/index

- **IndexController is still class name within default app/module**
  - URL: / or /index or /index/index

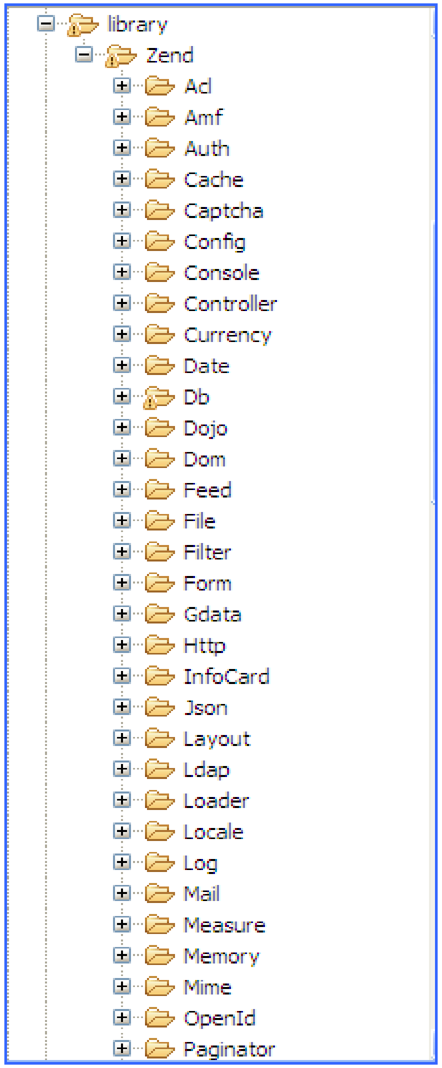
Tools can help get you started

- **Zend Studio for Eclipse creates default directory structures and classes for you**
  - Free trial: http://www.zend.com/en/products/studio/

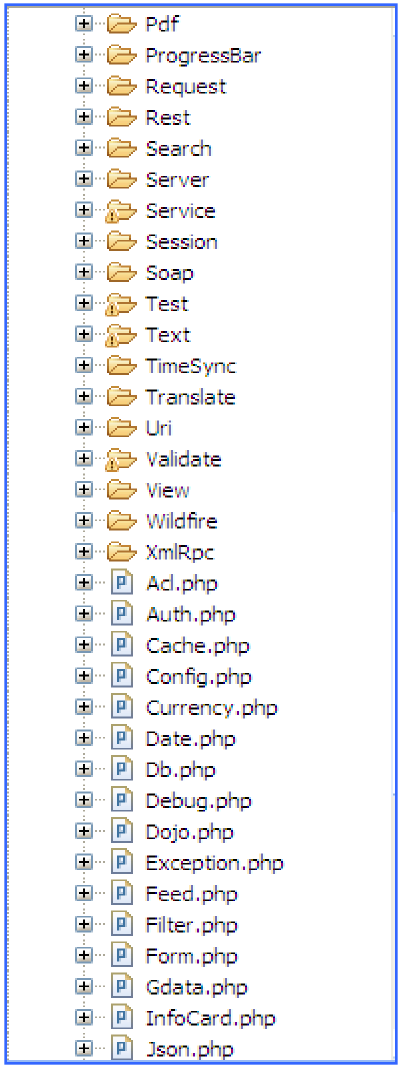


Components

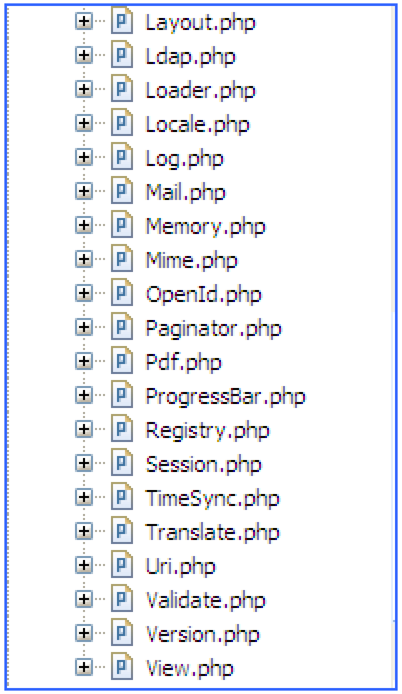
Library of Zend components



```
library
  Zend
    Acl
    Amf
    Auth
    Cache
    Captcha
    Config
    Console
    Controller
    Currency
    Date
    Db
    Dojo
    Dom
    Feed
    File
    Filter
    Form
    Gdata
    Http
    InfoCard
    Json
    Layout
    Ldap
    Loader
    Locale
    Log
    Mail
    Measure
    Memory
    Mime
    OpenId
    Paginator
```



```
    Pdf
    ProgressBar
    Request
    Rest
    Search
    Server
    Service
    Session
    Soap
    Test
    Text
    TimeSync
    Translate
    Uri
    Validate
    View
    Wildfire
    XmlRpc
    Acl.php
    Auth.php
    Cache.php
    Config.php
    Currency.php
    Date.php
    Db.php
    Debug.php
    Dojo.php
    Exception.php
    Feed.php
    Filter.php
    Form.php
    Gdata.php
    InfoCard.php
    Json.php
```



```
    Layout.php
    Ldap.php
    Loader.php
    Locale.php
    Log.php
    Mail.php
    Memory.php
    Mime.php
    OpenId.php
    Paginator.php
    Pdf.php
    ProgressBar.php
    Registry.php
    Session.php
    TimeSync.php
    Translate.php
    Uri.php
    Validate.php
    Version.php
    View.php
```

Reminder:

Zend/Db.php = Zend_Db

Zend/Db/Table.php = Zend_Db_Table

Components vs. straight PHP

- **Additional functionality**
  - Zend_Session vs. straight $_SESSION
  - Zend_Debug::dump() vs. vardump
- **Thread-safety**
  - Zend_Translate vs. gettext
  - Zend_Locale vs. setlocale
- **OO**
  - OO Syntax
  - May be extended with custom functionality
  - ZF components reduce coding when used together
- **They’ve been tested and integrated for you**

Components in 1.75

Zend_Acl	Zend_Infocard	Zend_Flickr
Zend_Amf	Zend_Json	Zend_Nirvanix
Zend_Auth	Zend_Layout	Zend_ReCaptcha
Zend_Cache	Zend_Ldap	Zend_Simpy
Zend_Captcha	Zend_Loader	Zend_SlideShare
Zend_Config	Zend_Locale	Zend_StrikeIron
Zend_Config_Writer	Zend_Log	Zend_Technorati
Zend_Console_Getopt	Zend_Mail	Zend_Twitter
Zend_Controller	Zend_Measure	Zend_Yahoo
Zend_Currency	Zend_Memory	Zend_Session
Zend_Date	Zend_Mime	Zend_Soap
Zend_Db	Zend_OpenId	Zend_Test
Zend_Debug	Zend_Paginator	Zend_Text
Zend_Dojo	Zend_Pdf	Zend_Timesync
Zend_Dom	Zend_ProgressBar	Zend_Translate
Zend_Exception	Zend_Registry	Zend_Uri
Zend_Feed	Zend_Rest	Zend_Validate
Zend_File	Zend_Search_Lucene	Zend_Version
Zend_Filter	Zend_Server_Reflection	Zend_View
Zend_FilterInput	Zend_Akismet	Zend_Wildfire
Zend_Form	Zend_Amazon	Zend_XmlRpc
Zend_Gdata	Zend_Audioscrobbler	Zend_XConsoleProcessUnix
Zend_Http	Zend_Delicious	Zend_XJQuery

Component categories

- MVC
- Formatting
- Ajax
- Identity, Authentication, and Authorization
- Forms
- Datastore
- Web Services
- Enterprise
- Debugging, Logging, and Testing
- I18n and L10n
- Mail
- Infrastructure

MVC components (you already know these)

- **Zend_Controller**
- **Zend_Layout**
- **Zend_View**

Formatting

- **Zend_Text**
- **Zend_Paginator**

Ajax

- Zend_Dojo
- Zend_Json

Identity, authentication, and authorization

- Zend_Acl
- Zend_Auth
- Zend_Infocard
- Zend_OpenId
- Zend_Session

Form and input validation

- **Zend_Captcha**
- **Zend_Form**
- **Zend_Validate**
- **Zend_Filter**

Database access

- **Zend_Db**
- **Zend_Db_Table**
- **Zend_Db_Profiler**

Web services

- Zend_Feed
- Zend_Gdata
- Zend_Http
- Zend_Rest

- Zend_Server_Reflection
- Zend_Soap
- Zend_Uri
- Zend_XmlRpc

Zend_Service_* clients

- Akismet
- Amazon
- Audioscrobbler
- Delicious
- Flickr
- Nirvanix
- ReCaptcha
- Simpy
- SlideShare
- StrikeIron
- Technorati
- Twitter
- Yahoo

Additional categories

- **Zend_Ldap**
- **Zend_Search_Lucene**
- **Zend_Pdf**

Debugging, logging, and testing

- **Zend_Debug**
- **Zend_Log**
- **Zend_Test**
- **Zend_Wildfire**

I18n and L10n

- **Zend_Currency**
- **Zend_Calendar**
- **Zend_Date**
- **Zend_Locale**
- **Zend_Measure**
- **Zend_TimeSync**
- **Zend_Translate**

Mail

- **Zend_Mail**
- **Zend_Mime**

Infrastructure

- Zend_Cache
- Zend_Config
- Zend_Console
- Zend_File
- Zend_Loader
- Zend_Memory
- Zend_Registry
- Zend_Version

Registry

Registry

- **Store global data without polluting the global scope**
  - `Zend_Registry::set('key', $value);`
  - `Zend_Registry::get('key');`
  - Useful for storing sessions, configuration data or any data that could potentially be important on a per-request basis

Logging

Logging

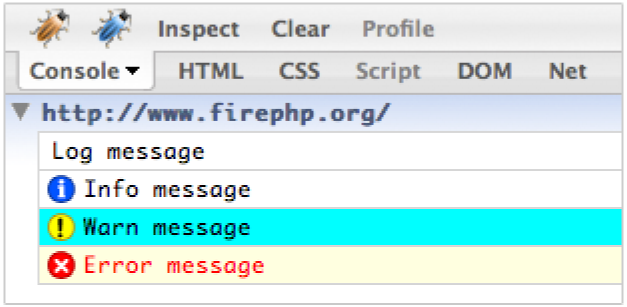
- **Structured, flexible logging class**
- **Zend_Log has several backends**
  - Stream (write to a file)
  - Firebug
  - Mail
  - Db
- **Example of logging to file system**

```
$writer = new Zend_Log_Writer_Stream('/path/to/logfile');
// Only email warning level entries and higher.
$writer->addFilter(Zend_Log::WARN);
$logger = new Zend_Log($writer);

// later…
$logger->info('Informational message');
$logger->err(‘Error message');

// “Error message”
```

Logging: Firebug backend

- **Zend_Log_Writer_Firebug, Zend_Db_Profiler_Firebug**
- **Install Firebug and FirePHP in Firefox**

```
// in bootstrap
$logger = new Zend_Log();
$writer = new Zend_Log_Writer_Firebug();
$logger->addWriter($writer);
Zend_Registry::set('logger',$logger);

// in action controller or anywhere
$logger = Zend_Registry::get('logger');
$logger->log('Log message', Zend_Log::DEBUG);
$logger->log('Info message', Zend_Log::INFO);
$logger->log('Warn message', Zend_Log::WARN);
$logger->log('Error message', Zend_Log::ERR);
```



```
http://www.firephp.org/
Log message
Info message
Warn message
Error message
```

Config

Zend_Config

- **OO syntax for reading/writing config files**
- **Internally it’s an array**
- **Multiple backends**
  - INI
  - XML
- **Divide sections with [ ], good for dev/prod**
  - And hierarchichy with periods after that
    - db.params.username = xxxx
- **Many components accept Zend_Config object as well as array**
  - Db
  - Forms

Config + Registry

```
Config.ini:
[dev]
db.adapter = PDO_MYSQL
db.params.username = admin
db.params.password = xxxx
db.params.dbname = appdb
db.params.host = 192.168.9.1

log.filename = /appdev/logs/app.log
```

```php
$config = new Zend_Config_Ini(realpath(dirname(__FILE__) .
    '/../application/config.ini'), 'dev');
$registry = Zend_Registry::getInstance();
$registry->set('config', $config);

$db = Zend_Db::factory($config->db);
Zend_Db_Table::setDefaultAdapter($db);
$registry->set('db', $db);

// create logger; store it in registry
$logFile = $registry->get('config')->log->filename;
$writer = new Zend_Log_Writer_Stream($logFile);
$logger = new Zend_Log($writer);
$registry->set('logger', $logger);
```

Sessions

Sessions

- **Zend_Session does more than PHP’s ext/session**
  - Namespaces let multiple applications (or sections of application) run in the same $_SESSION without risking key name collision
  - Used by Zend_Auth by default
  - Can set data to expire based on time or clicks/requests

```
$s = new Zend_Session_Namespace(‘myNamespace');
$s->a = 'apple';
$s->p = 'pear';
$s->o = 'orange';

$s->setExpirationSeconds(5, 'a'); // expire only the key "a" in
   5 seconds

// expire entire namespace in 5 "hops"
$s->setExpirationHops(5);

$s->setExpirationSeconds(60);
// The "expireAll" namespace will be marked "expired" on
// the first request received after 60 seconds have elapsed,
// or in 5 hops, whichever happens first.
```

Authentication

Authentication

- **Built over an adapter that implements Zend_Auth_Adapter_Interface**
  - Must have an authenticate() method that returns a Zend_Auth_Result object
- **Several pre-defined adapter classes can authenticate against common data stores**
  - Zend_Auth_Adapter_Db_Table, Digest, Http, Ldap, Openid
- **Zend_Auth_Storage_Session uses a session namespace of "Zend_Auth" by default**

Authentication example

```
// created db adapter earlier
$dbAdapter=Zend_Registry::get('db');
$authAdapter = new Zend_Auth_Adapter_DbTable($dbAdapter);
$authAdapter
    ->setTableName('users')
    ->setIdentityColumn('username')
    ->setCredentialColumn('password')
;
// Perform the authentication query, saving the result in $_SESSION
$result = $authAdapter->authenticate();
if($result->isValid) {
   echo ‘logged in’;
} else {
   echo ‘failed’;
}

// Print the result row
print_r($authAdapter->getResultRowObject());

/* Output:
my_username

Array
(
    [id] => 1
    [username] => my_username
    [password] => my_password
    [real_name] => My Real Name
)
*/
```

Authorization

Authorization

- **Classes used**
  - Zend_Acl_Role
  - Zend_Acl_Resource
- **Three concepts**
  - Role
    - Assigns particular groups of access to an individual
  - Resource
    - An object to which access is controlled
    - Resources can have privileges (e.g., "create", "read", "update", "delete")
  - Access Control List (ACL)
    - A hierarchical list that connects role/resource permissions

Authorization

```
$acl = new Zend_Acl();

$acl->addRole(new Zend_Acl_Role('guest'))
    ->addRole(new Zend_Acl_Role('member'))
    ->addRole(new Zend_Acl_Role('admin'));

$parents = array('guest', 'member', 'admin');
$acl->addRole(new Zend_Acl_Role('someUser'), $parents);

$acl->add(new Zend_Acl_Resource('someResource'));

$acl->deny('guest', 'someResource');
$acl->allow('member', 'someResource');

echo $acl->isAllowed('someUser', 'someResource') ?
     'allowed' : 'denied';
```

Forms

Zend_Form

- **Flexible solution for building forms**
- **Create in code**
  - Put it in a model class
- **Or create in config file**
- **Factory pattern lets you determine element type at runtime**
- **Pass $form to view script, where it's output**
  - `echo $form;` or
  - `echo $form->ordernum;` or
  - `echo $form->getElement('ordernum');`
- **Decorators**

Zend_Form example

```
class My_Form extends Zend_Form
{
    $form->addElement('text', 'username', array(
    'validators' => array(
        'alnum',
        array('regex', false, '/^[a-z]/i')
    ),
    'required' => true,
    'filters'  => array('StringToLower'),
    ));
}

// in your controller…
$form = new My_Form();
$this->view = $form

// in your view…
cho $this->form;
```

AJAX/Dojo

Dojo Integration

ZF + dojo | the javascript toolkit

Since May 2008

Integration points:

- **JSON-RPC Server**
- **dojo.data Envelopes**
- **Dojo View Helper**
- **Dijit integration with Zend_Form & Zend_View**
- **Dojo Library Re-distribution**

- **Also JQuery in extras folder**

Zend_Dojo_Form

```
class My_Form extends Zend_Dojo_Form
{
    protected $_selectOptions = array(
        'red'    => 'Rouge',
        'blue'   => 'Bleu',
        'white'  => 'Blanc',
        'orange' => 'Orange',
        'black'  => 'Noir',
        'green'  => 'Vert',
    );

    $this->addElement(
                'FilteringSelect',
                'filterselect',
                array(
                    'label' => 'FilteringSelect (select)',
                    'value' => 'blue',
                    'autocomplete' => false,
                    'multiOptions' => $this->_selectOptions,
                )
            )
}
```

Databases

Databases

- **Adapters for various database drivers**
  - IBM DB2/informix (PDO)
  - IBM DB2 and DB2/i5 (IBM i) (non-PDO)
  - Firebird/Interbase (non-PDO)
  - MS SQL (PDO)
  - MySQL (PDO) and MySQLi (non-PDO)
  - Oracle (PDO and non-PDO)
  - PostgreSQL (PDO)
  - SQLite (PDO)
  - or build your own by extending Zend_Db_Adapter_Abstract

Databases: connect

```
$db = new
  Zend_Db_Adapter_Pdo_Mysql(array(
     'host'       => '127.0.0.1',
     'username'   => 'webuser',
     'password'   => 'xxxxxxxx',
     'dbname'     => 'test'
));
```

Databases

- **Several classes give you a good start**
  - Zend_Db_Adapter_Abstract
    - Abstract class for all adapters
    - You will most likely use this or concrete implementations (such as Zend_Db_Adapter_Pdo_Mysql) for your database access
  - Zend_Db_Table
    - Gateway class for doing queries on a given table
  - Zend_Db_Table_Row
    - An instance of a given row
  - Zend_Db_Statement

Zend_Db examples

```
// Using "select" method to select and display
 records
$rows = $db->select()->from('CUSTOMERS')
                     ->where('CUSTNO >= 0');


// or write your own SQL with parameters
$sql = 'SELECT * FROM CUSTOMERS WHERE CUSTNO > ? and
 CUSTNO < ?';
$rows = $db->fetchAll($sql, array(100, 2000));

// either way, output results
foreach ($rows as $row) {
    echo $row['CUSTNO'] . ' ' . $row['CUSTNAME'];
}
```

Zend_Db_Table example

```
class Orders extends Zend_Db_Table_Abstract
{
    protected $_name = 'orders';
}



// instantiating your class
$db = Zend_Db::factory('PDO_MYSQL', $options);

// don't need to specify db if used setDefaultAdapter method earlier
// Zend_Db_Table_Abstract::setDefaultAdapter($db);

$table = new Orders(array('db' => $db));

$data = array(
    'custid'      => '12345',
    'custname' => 'Irving Jones',
);

$table->insert($data);
```

Caching

Caching

- **Frontend**
  - Core
  - Output
  - Function
  - File
  - Class
- **Backend**
  - Apc
  - File
  - Memcached
  - Sqlite
  - ZendPlatform

Caching

```
$frontendOptions = array(
   'lifetime' => 7200
);
$backendOptions = array(
    'cache_dir' => '../application/cache/'
);

$cache = Zend_Cache::factory(‘Output’, ‘File’,
  $frontendOptions, $backendOptions);

if (!($cache->start(‘name-of-cached-item’)) {

    // produce output
    $cache->end();
}
```

Unit Tests

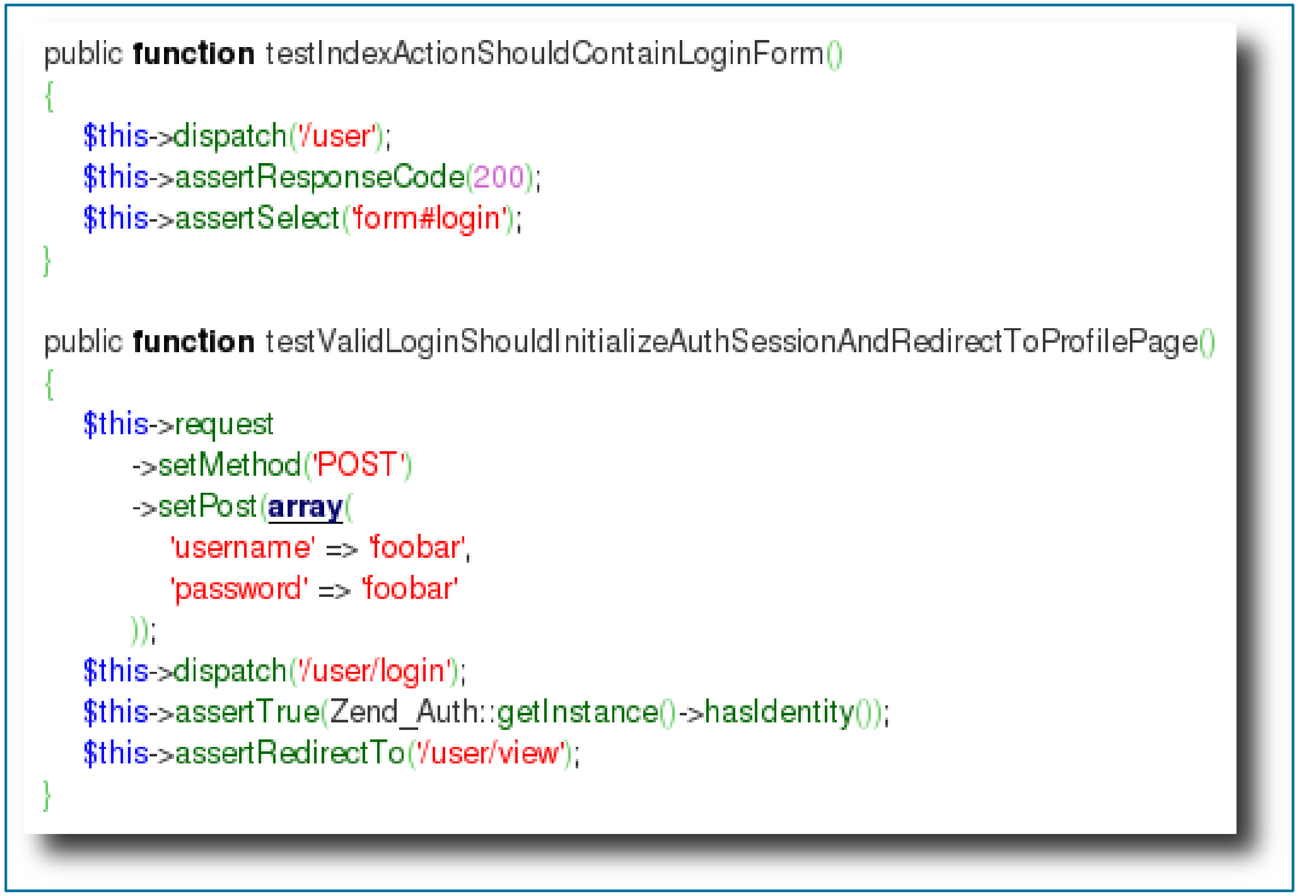
Zend_Test_PHPUnit

- **Extend Zend_Test_PHPUnit_ControllerTestCase**

```
class User_Controller_Test extends Zend_Test_PHPUnit_ControllerTestCase
{
    // ...

    public function testCallWithoutActionShouldPullFromIndexAction()
    {
        $this->dispatch('/user');
        $this->assertController('user');
        $this->assertAction('index');
    }

    public function testLoginFormShouldContainLoginAndRegistrationForms()
    {
        $this->dispatch('/user');
        $this->assertQueryCount('form', 2);
    }
}
```

More testing examples

- **Valid response codes and login**



```
public function testIndexActionShouldContainLoginForm()
{
    $this->dispatch('/user');
    $this->assertResponseCode(200);
    $this->assertSelect('form#login');
}

public function testValidLoginShouldInitializeAuthSessionAndRedirectToProfilePage()
{
    $this->request
         ->setMethod('POST')
         ->setPost(array(
             'username' => 'foobar',
             'password' => 'foobar'
         ));
    $this->dispatch('/user/login');
    $this->assertTrue(Zend_Auth::getInstance()->hasIdentity());
    $this->assertRedirectTo('/user/view');
}
```

Validation

Validation

- **Uses the Zend_Validate* classes**

```
$check = new Zend_Validate_Alnum();
if ($check->isValid($GET['data'])) {
  // do stuff
}
```

- **Each class extends the Zend_Validate_Interface interface**
  - You can use the internal validation classes or build your own

Validation

- **Pre-defined classes**
  - Alnum
  - Alpha
  - Between
  - Ccnum
  - Date
  - Digits
  - EmailAddress
  - Float
  - GreaterThan
  - Hex
  - Hostname
  - InArray
  - Int
  - Ip
  - LessThan
  - NotEmpty
  - Regex
  - StringLength

Web Services

Client for web services

- **Interfaces into web service providers**
  - Example: Google data

Calendar	Geo
Docs	Media
Exif	Photos
Feed	Query
Gapps	Spreadsheets
Gbase	YouTube

Client classes for web services

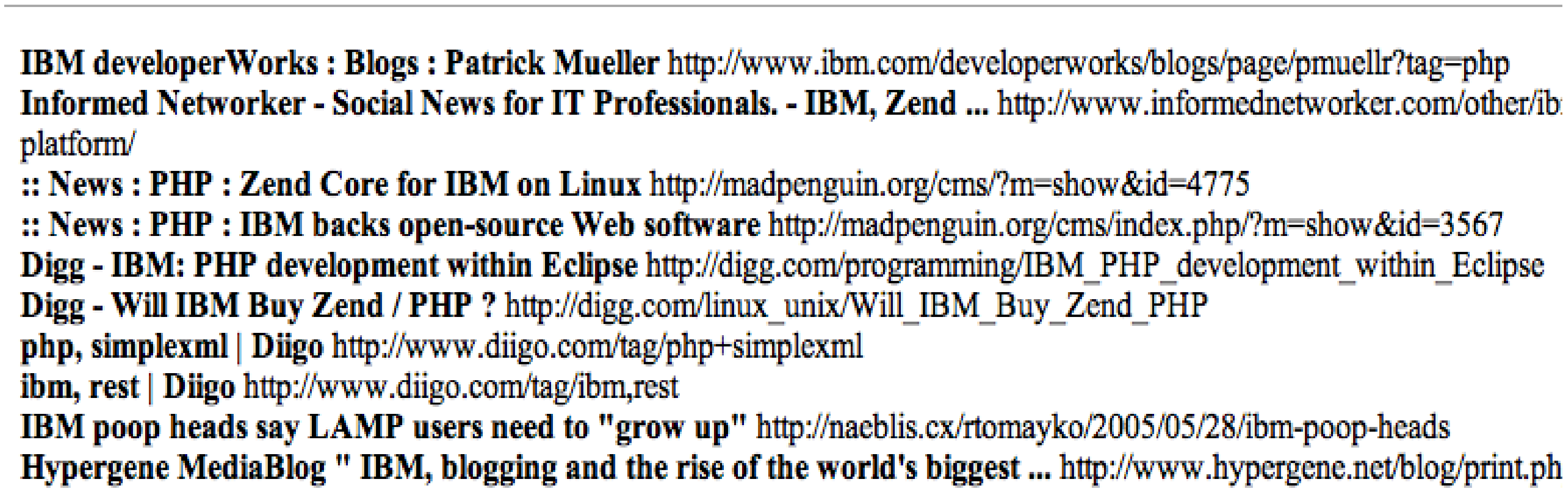
- Akismet
- Amazon
- Audioscrobbler
- Delicious
- Flickr
- Nirvanix
- ReCaptcha
- Simpy
- SlideShare
- StrikeIron
- Technorati
- Twitter
- Yahoo

Zend_Service_Yahoo

- **Search the web with Yahoo**
  - Get your application ID from http://developer.yahoo.com/wsregapp/
  - Class uses Zend_Rest_Client under the covers
  - Returns Zend_Service_Yahoo_WebResultSet containing instances of Zend_Service_Yahoo_WebResult

```
$yahoo = new Zend_Service_Yahoo("YAHOO_APPLICATION_ID");
$results = $yahoo->webSearch('IBM PHP',
                             array('results'  => '10',
                                   'start'    =>  1));
 foreach ($results as $result) {
    echo '<b>' . $result->Title . '</b> ' . $result->Url . '<br />';
 }
```

Results from $yahoo->webSearch



IBM developerWorks : Blogs : Patrick Mueller http://www.ibm.com/developerworks/blogs/page/pmuellr?tag=php
Informed Networker - Social News for IT Professionals. - IBM, Zend ... http://www.informednetworker.com/other/ib
platform/
:: News : PHP : Zend Core for IBM on Linux http://madpenguin.org/cms/?m=show&id=4775
:: News : PHP : IBM backs open-source Web software http://madpenguin.org/cms/index.php/?m=show&id=3567
Digg - IBM: PHP development within Eclipse http://digg.com/programming/IBM_PHP_development_within_Eclipse
Digg - Will IBM Buy Zend / PHP ? http://digg.com/linux_unix/Will_IBM_Buy_Zend_PHP
php, simplexml | Diigo http://www.diigo.com/tag/php+simplexml
ibm, rest | Diigo http://www.diigo.com/tag/ibm,rest
IBM poop heads say LAMP users need to "grow up" http://naeblis.cx/rtomayko/2005/05/28/ibm-poop-heads
Hypergene MediaBlog " IBM, blogging and the rise of the world's biggest ... http://www.hypergene.net/blog/print.ph

Other Yahoo search methods

- $yahoo->imageSearch
- $yahoo->videoSearch
- $yahoo->localSearch
- $yahoo->newsSearch

News Feeds

Importing news feeds

- **Usage**

```
$feed = Zend_Feed::import($url);
```

  - Returns an instance of Zend_Feed_Abstract
    - Implements the Iterator interface

- **Understands**
  - RSS 1.0
  - RSS 2.0
  - Atom

What’s New?

New in ZF 1.7x

- **Just a few of the enhancements:**
  - Performance enhancements in Zend_Loader, Zend_Controller, and server components
  - Zend_Amf component
  - Dojo Toolkit 1.2.1
  - ZendX_JQuery component
  - Zend_Tool in incubator
  - Google book search API in Zend_Gdata
  - Zend_Db_Table_Select support for Zend_Paginator

What’s Next?

Near future

- **From ZF wiki:**
  - framework.zend.com/wiki/display/ZFPROP/Home
  - In Standard Library Incubator

Zend_Action_Controller Directory Tree: Christopher Thompson
Zend_Crypt: Pádraic Brady
Zend_Db Firebird-Interbase support
Zend_MailRead Proposal: Nico Edtinger
Zend_Server Proposal: Davey Shafik
Zend_Uri Improvements: Shahar Evron
Zend_Validate_BarcodeISBN13: Andries Seutens
Zend_Mail_TransportQueue: Simon Mundy
Zend_Controller_Action_Helper_MultiPageForm: Jurriën Stutterheim
Zend_Db_Table_Plugin: Simon Mundy, Jack Sleight
Zend_Queue: Justin Plock
Zend_ Framework Default Project Structure: Wil Sinclair
Zend_FilterStripNewlines: Martin Hujer
Zend_Ascii: Ben Scholzen
Zend_CryptRsa: Pádraic Brady
Zend_Yadis: Pádraic Brady
Zend_Oauth: Pádraic Brady
Zend_View_Helper_Cycle: Kamil Nowakowski
Zend_Gravatar Proposal: Wojciech Naruniec

Zend_RememberTheMilk
Zend_Feed_Reader: Pádraic Brady & Jurriën Stutterheim
Zend_Image_Barcode: Mickael Perraud & Julien Pauli
Twitter
Zend_Log factory(): Martin Roest
Zend_LogWriterSyslog: Thomas Gelf
Zend_Json_Expr to allow Javascript Expressions (functions) to be encoded using Zend_Json
Extended Zend_Ldap Proposal: Stefan Gehrig
Zend_Service_Digg: Luke Crouch
Zend_LogWriterMail
Zend_TagCloud: Ben Scholzen
Zend_LoaderAutoloader: Ralph Schindler
Zend_Markup: Pieter Kokx
Zend_Validate_Db_RecordExists: Zend_Validate_Db_NoRecordExists: Ryan Mauger
Zend_Controller_Router_Route_Rest: Luke Crouch
Zend_Loader_Autoloader_Resource: Matthew Weier O'Phinney

Further out in the future

- Emphasis on tooling to create and deploy projects
- Look here: framework.zend.com/wiki/display/ZFPROP/Home

My goals

- **For my own apps**
  - Write more view helpers
  - Refactor pre-1.6 piecemeal Dojo code with ZF's built-in Dojo view helpers and form elements
  - Replace homegrown database code with Zend_Db classes
    - Consistent quoting, escaping, prepared statements, profiler
    - And to provide feedback to developers
  - Use more of Zend_Form's power with Zend_Filter and Zend_Validate.
    - My controller actions now do too much
- **ZF**
  - Contribute to Zend_Db_Adapter_Db2

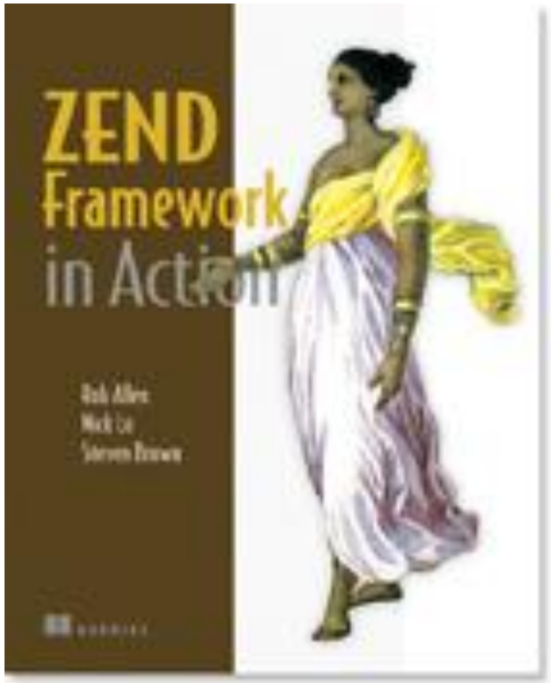
In conclusion...

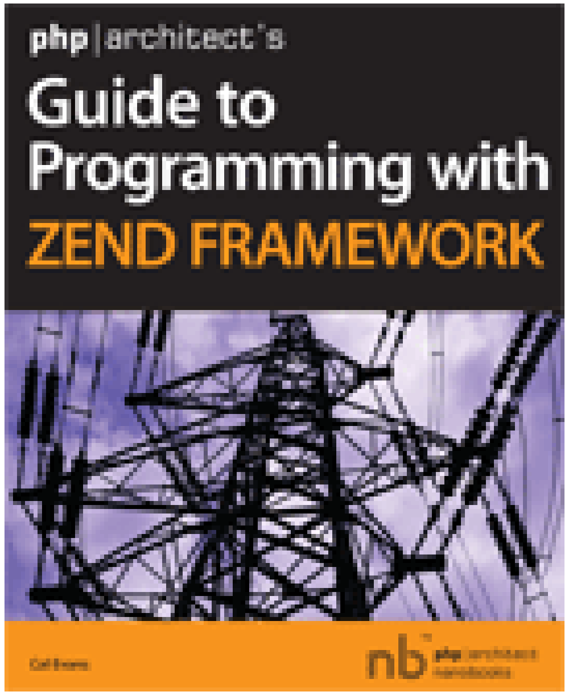
Zend Framework is…

A use-at-will component framework that is:

- **built with OO, PHP 5**
- **intended to set a high standard for enterprise PHP**
- **flexible with MVC to put you on right track**
- **full of components that handle drudgery for you, and web services, too**
- **always improving. You can contribute**

Resources: books




php|architect's
Guide to Programming with ZEND FRAMEWORK
Cal Evans
nb php|architect nanobooks

Books in Japanese, German, Portuguese:

PHPフレームワーク Zend Framework 入門
PHPフレームワークの本命登場!!
Web開発の効率が大幅アップ!!

Carsten Möhrke
Zend Framework
Das Entwickler-Handbuch
PHP-Anwendungen mit dem Zend Framework entwickeln
Installation, Grundlagen, Praxiseinsatz
Model View Controller (MVC) in Theorie und Praxis
Rechtemanagement, Caching, Sicherheitslösungen, Webservices u.v.m.
Galileo Computing

Flávio Gomes da Silva Lisboa
Zend Framework
Desenvolvendo em PHP 5 orientado a objetos com MVC
novatec

Resources: online

- **On the web:**
  - framework.zend.com/docs/quickstart
  - survivethedeepend.com/pdf/survivethedeepend.pdf
  - zfforums.com
- **Send me your thoughts:**
  - alan@alanseiden.com
  - http://alanseiden.com (my blog)

Questions?

alan@alanseiden.com

See you at TGIF!