WEB MAPPING WITH DRUPAL
Ranel O. Padon
WHY WEB?

connectivity & interaction
WHY CMS?

Why CMS?
CMS, or Content Management Systems, is a wonderful alternative to using manual WYSIWYG HTML editors, website builders, and all the others costly website tools on the market.

CMS Systems allow you to:
- Easily create, publish, and manage content
- Create a solid website structure
- Enjoy search engine friendly capabilities

Do you need a CMS for your website?

- Do you need to update your website's content regularly? **YES**
- Do you need to restrict access to some of your pages? **NO**
- Will non-web developers be updating and maintaining content? **YES**
- Do you required the ability to manage your website content remotely? **NO**

A static website without a CMS (e.g. Dreamweaver, FrontPage, etc.).
A CMS would be a smart decision.
WHY CMS?

CMS

Content creation
Content management
Reduced site maintenance costs
No need for programming knowledge

Benefits of CMS
- No technical skills needed
- Update your website from anywhere
- Instant corrections
- Long-term reduction in website maintenance costs

GET QUOTE NOW
WHY CMS?

HOW A CMS WORKS
WHY CMS?
# WHY CMS?

<table>
<thead>
<tr>
<th>Platform</th>
<th>Technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASP.NET</td>
<td>ASP.NET MVC · ASP.NET Web Forms · ASP.NET Dynamic Data · BFC · DotNetNuke · MonoRail · OpenRasta · Umbraco</td>
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<tr>
<td>ColdFusion</td>
<td>ColdBox Platform · ColdSpring · Fusebox · Mach-II · Model-Glue · onTap · on Wheels</td>
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<tr>
<td>Common Lisp</td>
<td>CL-HTTP · SymbolicWeb · UnCommon Web · Weblocks</td>
</tr>
<tr>
<td>C++</td>
<td>CppCMS · Wt</td>
</tr>
<tr>
<td>Java</td>
<td>Apache Struts · AppFuse · Flexive · GWT · Grails · Vaadin · ItsNat · JavaServer Faces · Jspx · Makumba · OpenXava · Play · Eclipse RAP · Reasonable Server Faces · RIFE · Seam · Spring · Stripes · Tapestry · WebWork · Wicket · ZK · ICEfaces · WaveMaker</td>
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<tr>
<td>Scala</td>
<td>Lift (web framework) · Play · Circumflex</td>
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<tr>
<td>JavaScript</td>
<td>Ample SDK · Closure · Ext JS · Helma · RingoJS · Prototype JavaScript Framework · Rico · Sencha Touch · script.aculo.us · SproutCore · jQuery · Dojo Toolkit</td>
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<tr>
<td>Perl</td>
<td>Catalyst · Dancer · Gantry · Mason · Maypole · Mojolicious · Poet · WebGUI</td>
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<tr>
<td>PHP</td>
<td>AppFlower · CakePHP · CodeIgniter · <strong>Drupal</strong> · e107 · eZ Publish · FuelPHP · Horde · Joomla! · Laravel · Lithium · Midgard · MODX · Qcodo · Seagull · SilverStripe · Symfony · TYPO3 · WordPress · Xaraya · Yi · Zend Framework · Zeta Components</td>
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<tr>
<td>Python</td>
<td>BlueBream · CherryPy · <strong>Django</strong> · Flask · Nevow · Pyjamas · Pylons · Pyramid · Quixote · TurboGears · web2py · Zope 2 · Tornado · Uliweb</td>
</tr>
<tr>
<td>Ruby</td>
<td>Ruby on Rails · Merb · Sinatra · Hobo · Camping · Nitro · Ramaze</td>
</tr>
<tr>
<td>Smalltalk</td>
<td>AIDAWeb · Seaside</td>
</tr>
<tr>
<td>Other languages</td>
<td>Application Express (PL/SQL) · HAqPS (Haskell) · Kepler (Lua) · OpenACS (Tcl) · SproutCore (JavaScript/Ruby) · Yaws (Erlang)</td>
</tr>
</tbody>
</table>
WHY PHP?

used by almost 30 Million websites around the world.

http://trends.builtwith.com/framework/PHP
WHY PHP?

Rasmus Lerdorf, who wrote the original Common Gateway Interface (CGI) component together with Andi Gutmans and Zez Surski, who rewrote the parser that formed PHP 3.

<table>
<thead>
<tr>
<th>Paradigm(s)</th>
<th>imperative, object-oriented, procedural, reflective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appeared in</td>
<td>1995; 17 years ago[1]</td>
</tr>
<tr>
<td>Designed by</td>
<td>Rasmus Lerdorf</td>
</tr>
<tr>
<td>Developer</td>
<td>The PHP Group</td>
</tr>
<tr>
<td>Stable release</td>
<td>5.4.8 (October 18, 2012; 5 days ago)</td>
</tr>
<tr>
<td>Typing discipline</td>
<td>Dynamic, weak</td>
</tr>
<tr>
<td>Major implementations</td>
<td>Zend Engine, PHP7</td>
</tr>
<tr>
<td></td>
<td>Embedded Engine</td>
</tr>
<tr>
<td></td>
<td>Phalanger, Quercus, Project Zero, HipHop</td>
</tr>
<tr>
<td>Influenced by</td>
<td>C, C++, Java, Perl, Tcl[1]</td>
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<tr>
<td>Implementation language</td>
<td>Cross-platform</td>
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<tr>
<td>OS</td>
<td>PHP License</td>
</tr>
<tr>
<td>License</td>
<td>Common extensions .php</td>
</tr>
<tr>
<td></td>
<td>Older, now uncommon extensions .phtml, .php4, .php3,</td>
</tr>
<tr>
<td></td>
<td>.php5, .phps</td>
</tr>
<tr>
<td>Website</td>
<td><a href="http://www.php.net">www.php.net</a></td>
</tr>
</tbody>
</table>
RECURSIVE ACRONYMS

- KGS — KGS Go Server
- LAME — LAME Ain’t an MP3 Encoder
- LIVES — LIVES is a Video Editing System
- Loom — Loom organizes our metadata
- MINT — MINT is Not TOS (later changed to "MINT is Not TRAC")
- MINT — MINT is Not TRAC
- Mung — Mung Until No Good
- Nagios — Nagios Ain’t Gonna Insist On Saints (which is a reference to the previous name of Nagios, namely Netsaint)
- NIL — NIL, Isn’t Liero
- Ninja-ide — Ninja-IDE Is Not Just Another IDE
- pascal — a compiler compiler
- PHP — PHP: Hypertext Preprocessor
- PINE — PINE is Nearly Elm, originally, PINE now officially stands for “Pine Internet News and E-mail”
- PNG — PNG’s Not GIF (officially “Portable Network Graphics”)
- RPM — RPM Package Manager (originally “Red Hat Package Manager”)
- Scaled — Scaled Composites: Advanced Link to Efficient Development
- SPARQL — SPARQL Protocol And RDF Query Language
- Qins — Qins is not Slow
- TiLP — TiLP is a Linking Program
- TIP — TIP isn’t Pico (name for earliest versions of nano text editor)
- TRESOR — TRESOR Runs Encryption Securely Outside RAM
- UIRA — UIRA Isn’t a Recursive Acronym
- WINE — WINE Is Not an Emulator
- XBMC — XBMC Media Center (originally Xbox Media Center)
- XINU — XINU Is Not Unix
- XNA — XNA’s Not Acronymed
- XNU — X is Not Unix
WHY PHP

- open-source
- cross-platform
- good documentation
- readable
- secured
- easily deployed
- stable
- flexible
- fast
- extendable/scalable
- huge community & support
WHAT IS DRUPAL?

created by Dries Buytaert on 2001
WHAT IS DRUPAL?

from the Dutch word “drupple”
WHY DRUPAL?
WHY DRUPAL?

it's free & used by Yahoo, eBay, NASA, NATO, MTV, etc.
DRUPAL 6

Factor Extraction for extracting the essential/major factors/parameters uses the Principal Component Analysis (PCA) as the extraction method and uses the Varimax with Kaiser Normalization for the rotation method.
DRUPAL 7
DRUPAL 7
DRUPAL 7
Drupal 7 addressed 90% of the problems identified by the Universities of Minnesota and Baltimore in Drupal 6.

User experience designer Mark Boulton was hired to work with the Drupal community to design an improved user interface for Drupal's administration interface.
WHY DRUPAL?

Pretty interfaces
WHY DRUPAL?

Pretty interfaces
Drupal 7 is more complex than Drupal 6

...but it's also more simple
MORE CODE

Drupal 7 has a lot more code

Source: Djun Kim
WHY DRUPAL? IT CAN BE TAMED.
WHY DRUPAL? GOOD FOR BEGINNERS.
WHY DRUPAL? FLEXIBLE FOR EXPERTS.
WHY DRUPAL? IT’S VERSATILE!
WHY DRUPAL? 20,000 Modules

Embraces Change: 8 Major Versions
State-of-the-Art: Almost 20,000 modules!
WHY DRUPAL? STRONG COMMUNITY

Active & Huge Community: Transcending Boundaries
WHY DRUPAL? COMMUNITY EFFORT

Worth of Drupal: $12,288,606 (223 person-years)

https://www.ohloh.net/p/drupal/estimated_cost
WHY MAP?

The Power of Maps (Lord of the Rings’ map)
WHY MAP?

Maps are used to analyze patterns.
WHY MAP?

It engages the Community
WHY MAP?

Maps are used for visualizing phenomena.
WHY MAP?

Maps are good for portraying connectivity.
WHY MAP?

Maps could help in damage assessment & rescue operations.
WHY MAP WITH DRUPAL?

Powerful & Stable Mapping Modules:

Geofield, Leaflet, OpenLayers, GMap, etc.
WHY MAP WITH DRUPAL?

Great web mapping docs & books
SAMPLE OF OPENLAYERS IN DRUPAL
install Apache, MySql & PHP (XAMPP, WAMP, Easy PHP, ...)
start Apache & MySQL (Apache automatically starts PHP)
create a MySQL database
  go to http://localhost/phpmyadmin
download & install Drupal 7
  go to http://localhost/drupal/install.php
CARTARO GEOSPATIAL CMS

Download

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Notes</th>
<th>Download</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0-beta2</td>
<td>19 Oct 2012</td>
<td>Release notes</td>
<td>.zip</td>
</tr>
<tr>
<td>1.0-beta1</td>
<td>27 Sep 2012</td>
<td>Release notes</td>
<td>.zip</td>
</tr>
</tbody>
</table>

Follow the documentation on how to get started.

GeoServer

Use Cartaro as a user provider for GeoServer.
Download extension for GeoServer 2.2
Most functions needed for a SDI come right out of the box through the close integration of Drupal with PostGIS and GeoServer. The main features of Cartaro are:

- Spatial data storage with true geometry data types
- Creation of data types from within the Drupal GUI
- Integrated online editing of geospatial data
- Data publishing with integrated maps
- Configuration of map layouts and behaviors
- Symbol styling
- Data publishing through OGC standards-compliant web services (OWS) like WMS and WFS
- High performance map output through GeoWebCache
- Transparent privilege handling and security for all spatial data
- Content publication workflow and revision moderation
- Basic metadata collection through access to GeoServer-GUI
- Full extensibility through thousands of Drupal modules or individual programming
Spatial Storage

The PostGIS module is used for persistence of all spatial data in your Drupal site. With the extension PostGIS spatial data are stored as true geometric data types like POINT, LINE, POLYGON and more. This allows for high performance spatial queries and analyses and guarantees data integrity through a whole range of possible spatial validations.

OGC Web Services

Access to geospatial data in Cartaro is handled by GeoServer. GeoServer queries the PostGIS database and publishes images or vector data. Through the GeoServer module Cartaro supports the main web services defined by the Open Geospatial Consortium (OGC). This means your site can deliver its data e.g. as Web Map Service (WMS) or Web Feature Service (WFS).

Map Publishing

Maps can of course be published directly within your site. Cartaro therefore uses the JavaScript library OpenLayers and its implementation as a Drupal module. With the OpenLayers module you are able to configure completely dynamic maps within the Drupal GUI. The available map layers may come from external web services or from layers in your internal GeoServer.
CARTARO GEOSPATIAL CMS

The geospatial components used are PostGIS, GeoServer, GeoWebCache and OpenLayers.
Using Drupal users and roles in GeoServer

The core idea of Cartaro is the closest possible integration of geodata with other content in a single software stack. This aspect also extends to the common management of users, roles and their privileges, meaning you should be able to apply the same security mechanisms and privileges for spatial and non-spatial content. Within Cartaro the privileges for non-spatial content are handled by Drupal. GeoServer, on the other hand, is responsible to deliver optionally protected geospatial data to the web either through web services (OWS and others) or through a number of downloadable file formats.

A GeoServer extension is provided in order to use Drupal as user and role provider for GeoServer – allowing Cartaro to forward Drupal authorizations to GeoServer. This means you can set up a protected geo web service with GeoServer that is automatically available to a user after login in the main Drupal site.

Further the same GeoServer provided service is available outside of your Drupal site too, e.g. in a Desktop GIS connecting to GeoServer directly. The usual authentication mechanisms as defined by the OGIC and implemented by GeoServer apply but do respect any permissions set in Drupal (those are merged with the permissions you set in GeoServer).

Even though setting GeoServer up this way is optional we do strongly recommend doing so as it automates user/permission synchronization which is an error prone process if done by hand.

Installing the extension

The GeoServer extension is provided as a JAR file that needs to be placed in GeoServers web-inf/lib/ folder. Once located there one needs to use Spring's (framework GeoServer is built on) dependency injection means to supply the implementation instead of the file based user and role system.
Glenfinnan Viaduct

Submitted by Sample User on Thu, 2012-09-06 13:28

There goes some sample content along with the map...
CARTARO-POWERED SITE

www.cuba.cartaro.org
CARTARO CONFIGURATION

integrate XAMPP to PostgreSQL
start Apache (XAMPP)
start Postgre, PostGIS & GeoServer
(OpenGeo Suite)
open pgAdmin III
create a cartaro spatial db
copy the cartaro contents to htdocs folder
go to http://localhost/cartaro/install.php
enjoy the site 😊
CARTARO CONFIGURATION

enjoy the site 😊
RELATED GEOFOSPATIAL CMS

http://mapbender.org/

Web-GIS Client (OGC WMS, WFS, Catalog Service Client)

Geo-CMS (Content Management System)

Web-based Digitizing/Editing Functionality (OGC WSF-T Client)

Security Management (Authentication, Authorization)

Accounting Management (Logging)

Spatial Web Services Orchestrating
RELATED GEOSPATIAL CMS

https://www.ohloh.net/p/mapbender?ref=sample
RELATED GEOSPATIAL CMS

https://www.ohloh.net/p/mapbender?ref=sample
RELATED GEOSPATIAL CMS

https://www.ohloh.net/p/mapbender?ref=sample
RELATED GEOSPATIAL CMS

http://mapbender.org/
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http://mapbender.org/
RELATED GEOSPATIAL CMS

http://mapbender.org/
RELATED GEOSPATIAL CMS (PHP)

http://mapbender3.org/
RELATED GEOSPATIAL CMS (Python)

http://geonode.org/org/
THE DRUPAL MOVEMENT

http://groups.drupal.org/philippines
THE DRUPAL MOVEMENT

PHDUG: Philippine Drupal Users Group
Thank You!