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# Web Content Management with Open Source Software

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# Outline

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- Web Content Management Systems (CMS)
- Proprietary / Custom-built / Open Source
- Benefits of Open Source CMSes
- The LAMP Platform
- Open Source CMSes
- Tips
- Resources

# Types of Websites

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- “Static” websites: pre-built HTML pages
  - Vending machine: packaged, limited personalization
- “Dynamic” websites - pages built on demand
  - Fine restaurant: Served fresh with a personal touch
- Growing expectations:
  - Online collaboration, knowledge management
  - E-commerce, e-government, e-learning

# Content Management Systems (CMS)

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- Software system to facilitate management of website content
- Data is generally stored in a database
- Separation of content and visual display
- Includes tools for managing users and workflow

# CMS Benefits

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- Enables non-technical staff to add, edit, and manage website content
- Maintains a consistent look-and-feel across a website and makes it easy to change design
- Facilitates gathering, organizing, and archiving information
- Search tools facilitate information retrieval
- Can supplement or replace email-based collaboration

# Proprietary CMSES: Benefits

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- Quick and complete solution
- Technical support available

# Proprietary CMSES: Drawbacks

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- Are you buying more than you need?
- Beware of “vendor lock-in”
- Expensive licensing costs
- Closed source may hinder customization
- Restrictive license may prevent redistribution

# Custom Built CMSES: Benefits

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- Built to your specifications
- Not dependent on a commercial vendor
- Can be customized
- Can be redistributed or sold
- Build in-house technical expertise



# Custom Built CMSES: Drawbacks

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- Need in-house technical expertise
- Can be complex and time-consuming to build
- Can be expensive to build and maintain
- Can you sustain in-house technical support?

# Build It Yourself With Open Source

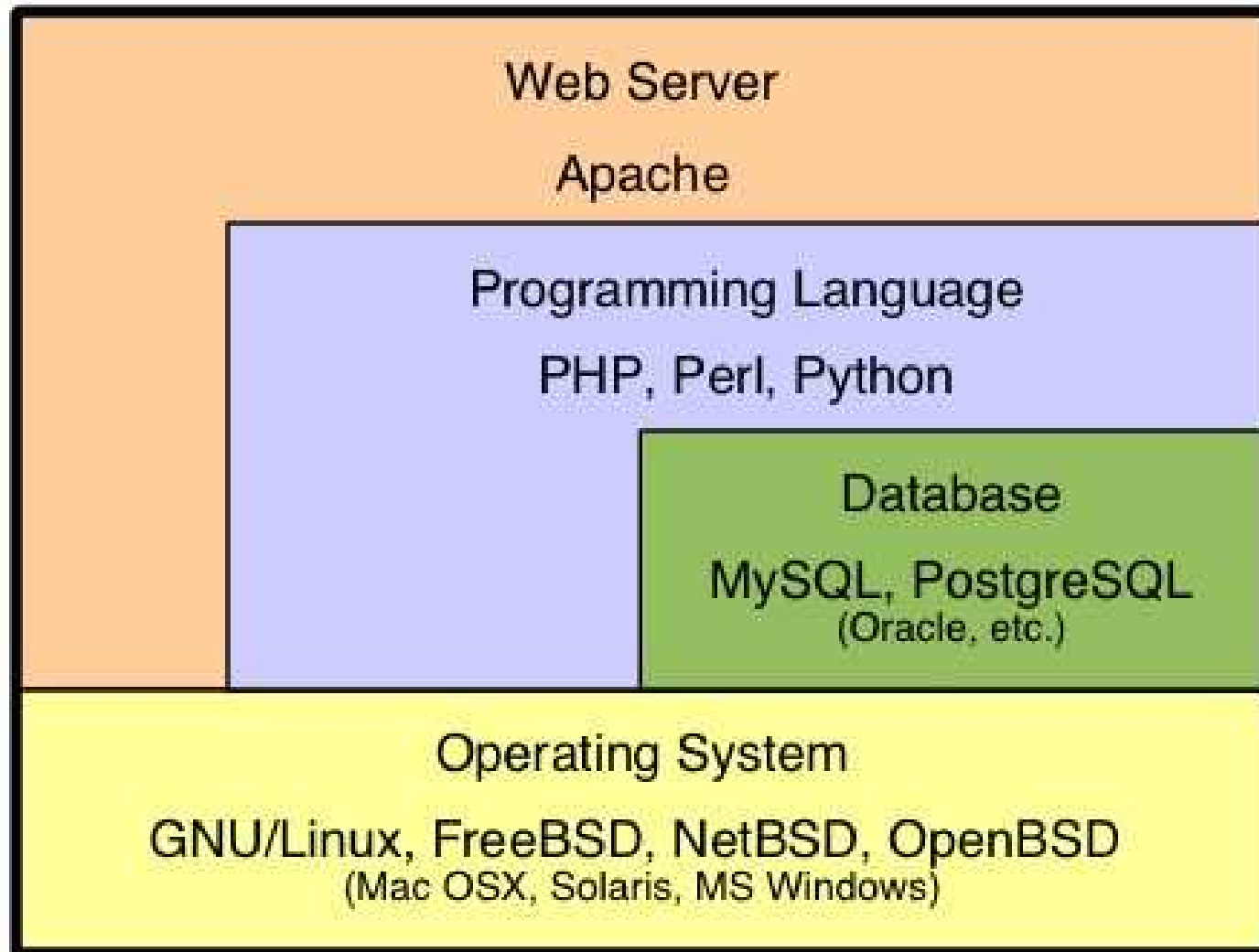
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Why you should consider using Open Source components to build your own custom CMS:

- Freedom from licensing costs
- Freedom to modify and redistribute
- Libraries, examples, & code snippets available
- Strong community to provide support
- Expertise and experience is transferable

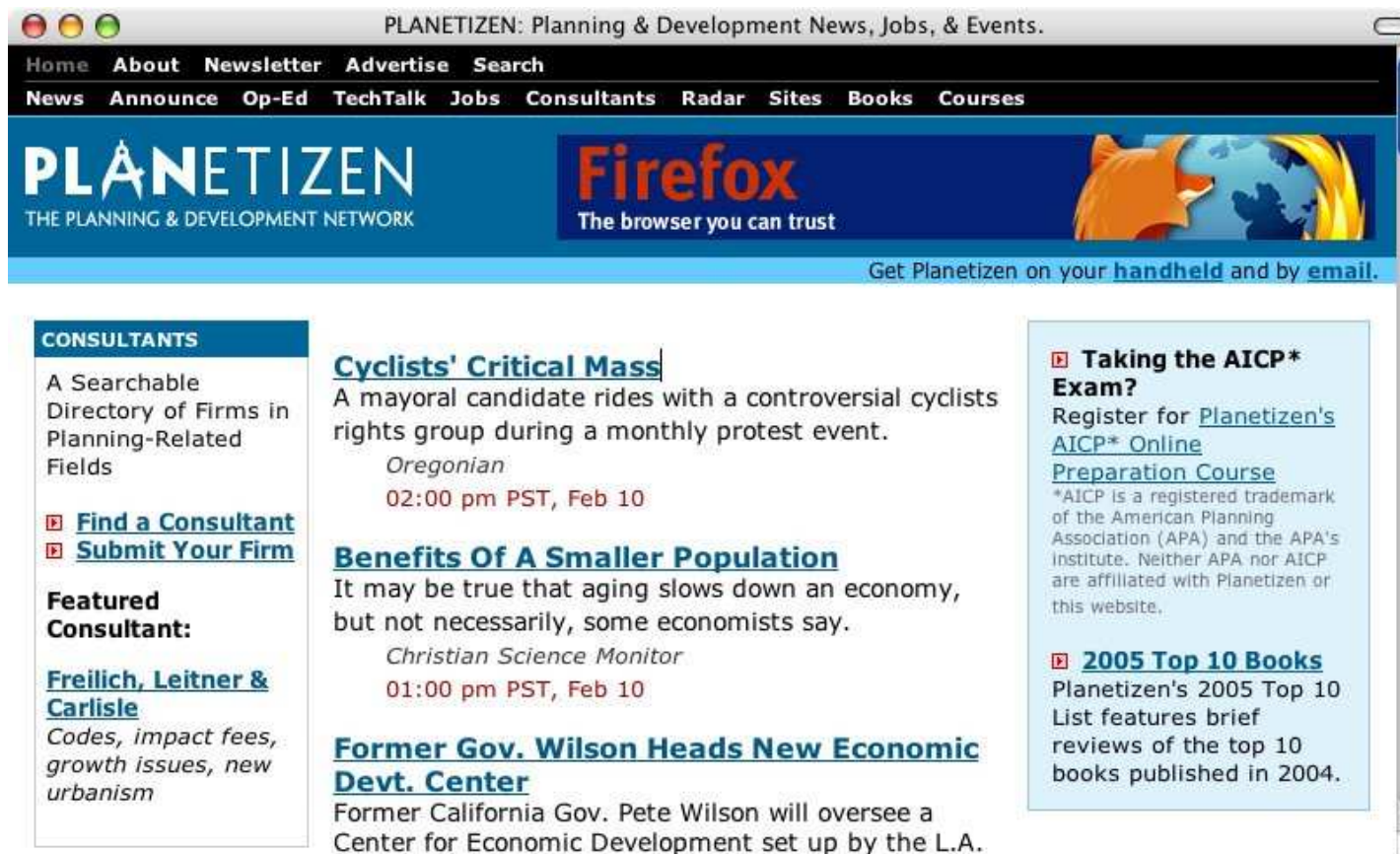
# Open Source LAMP Platform

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# Planetizen

- Custom-built CMS using open source
- Community website for urban planners



PLANETIZEN: Planning & Development News, Jobs, & Events.

Home About Newsletter Advertise Search

News Announce Op-Ed TechTalk Jobs Consultants Radar Sites Books Courses

**PLANETIZEN**  
THE PLANNING & DEVELOPMENT NETWORK

**Firefox**  
The browser you can trust

Get Planetizen on your [handheld](#) and by [email](#).

**CONSULTANTS**

A Searchable Directory of Firms in Planning-Related Fields

[Find a Consultant](#)

[Submit Your Firm](#)

**Featured Consultant:**

[Freilich, Leitner & Carlisle](#)  
*Codes, impact fees, growth issues, new urbanism*

**[Cyclists' Critical Mass](#)**  
A mayoral candidate rides with a controversial cyclists rights group during a monthly protest event.  
*Oregonian*  
02:00 pm PST, Feb 10

**[Benefits Of A Smaller Population](#)**  
It may be true that aging slows down an economy, but not necessarily, some economists say.  
*Christian Science Monitor*  
01:00 pm PST, Feb 10

**[Former Gov. Wilson Heads New Economic Devt. Center](#)**  
Former California Gov. Pete Wilson will oversee a Center for Economic Development set up by the L.A.

**[Taking the AICP\\* Exam?](#)**  
Register for [Planetizen's AICP\\* Online Preparation Course](#)  
\*AICP is a registered trademark of the American Planning Association (APA) and the APA's Institute. Neither APA nor AICP are affiliated with Planetizen or this website.

**[2005 Top 10 Books](#)**  
Planetizen's 2005 Top 10 List features brief reviews of the top 10 books published in 2004.

# Planetizen – 2

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- Built with GNU/Linux, Apache, PHP, MySQL
- Started development in early 2000
- Low hardware costs
- No software costs
- Development tools: Emacs, VIM, CVS.
- Launched in June 2000

# Planetizen – 3

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- Easily customized
- “Look-n-feel” different from pre-built CMSes
- Great learning opportunity
- Slow to introduce new features as they required extra development effort and time
- Migrating to an established pre-built open source CMS.
- [www.planetizen.com](http://www.planetizen.com)

# UIPublish

- Custom CMS using open source components
- Released under GNU General Public License



The screenshot shows a Mozilla browser window titled "UIP: - Mozilla". The address bar is empty. The menu bar includes File, Edit, View, Go, Bookmarks, Tools, Window, and Help. The page content features the UIPublish logo (a radio tower with colorful waves) and the text "UIPublish" with a "Website" link. Below this is a navigation bar with buttons for "Main", "News", "Calendar", "FileManager", and "Help". The main content area is titled "Sections: News" and "Manage News". A legend indicates "Item Online" (yellow) and "Item Offline" (grey). A table lists news items with columns for ID, Title, Status, Approval, Post Date, Expire Date, and Visibility. Each row has a "Modify" button on the left and a "Delete" button on the right.

	ID	Title	Status	Approval	Post Date	Expire Date	Visibility	
<input type="button" value="Add"/>	Add a new item							
<input type="button" value="Modify"/>	19	State Assembly Field Forum on AB 1221	Online	Approved	May 02, 2003	No date	High	<input type="button" value="Delete"/>
<input type="button" value="Modify"/>	18	Reform of tax clear hurdle	Online	Approved	Apr 30, 2003	No date	High	<input type="button" value="Delete"/>
<input type="button" value="Modify"/>	17	State Assembly Field Forum on AB 1221	Offline	Pending	Apr 17, 2003	No date	High	<input type="button" value="Delete"/>
<input type="button" value="Modify"/>	13	Budget-cut targets go to voters	Online	Approved	Mar 02, 2003	No date	High	<input type="button" value="Delete"/>

# UIPublish – 2

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- Publishing articles, announcements, events, etc.
- Integration with a static website
- Started in 2000
- First GPL release in 2001



# UIPublish – 3

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## Benefits of GPL release:

- Encouraged code cleanup and maintenance
- Improved documentation
- Users submitted bugs and suggestions
- Used other GPL code for enhancements
- Clients considered GPL license as a strength

[uipublish.sourceforge.net](http://uipublish.sourceforge.net)

# Benefits of Open Source CMSes - 1

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- Open source CMSes: pre-built but customizable
- Source code is available
- Can be customized
- Can be redistributed
- No licensing costs

# Benefits of Open Source CMSes - 2

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- Numerous alternatives to match different requirements and platforms
- Community technical support can be strong
- Commercial technical support may be available
- Control your own data and CMS strategy
- Faster & less expensive than building it yourself

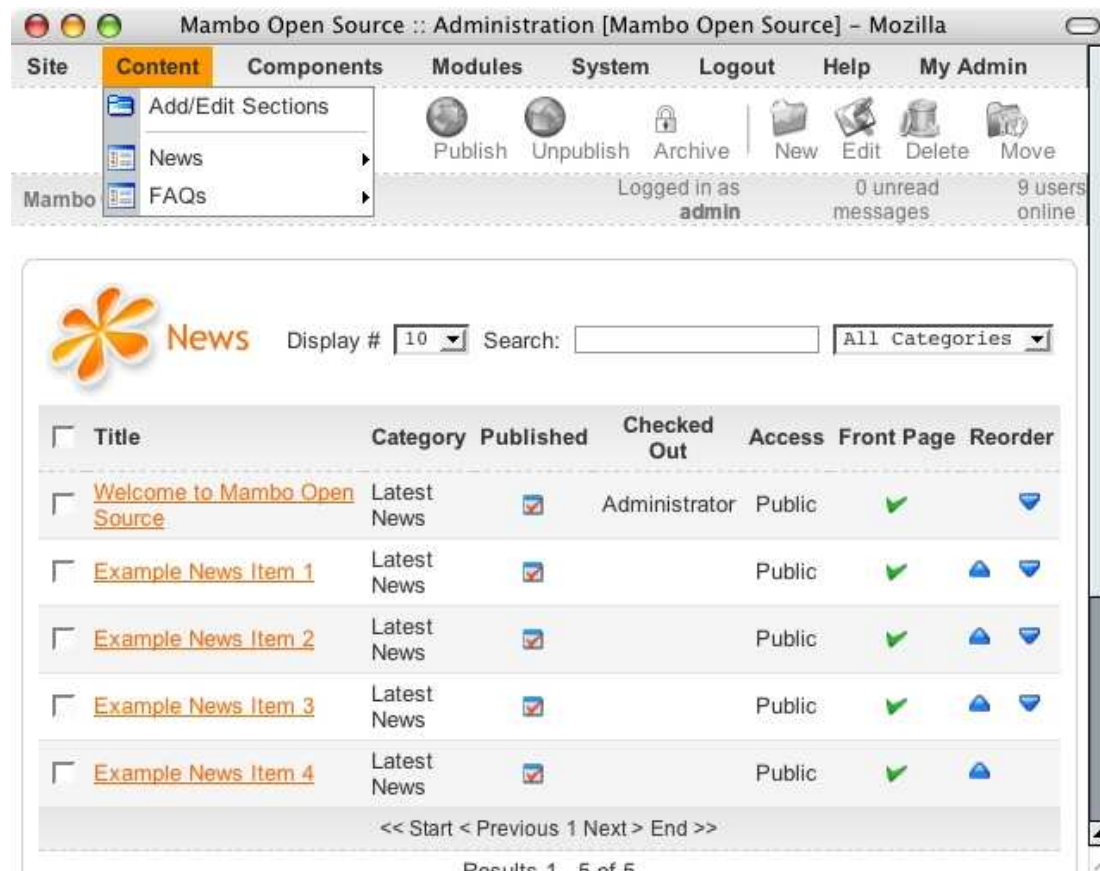
# Examples of Open Source CMSes

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- Review pre-built open source CMSes
- Innovative approaches to content management
- All examples licensed under the GNU General Public License (GPL)
- Most examples use LAMP

# Mambo

- CMS for conventional websites
- MySQL, PHP [www.mamboserver.org](http://www.mamboserver.org)



The screenshot displays the Mambo Open Source Administration interface. The top navigation bar includes tabs for Site, Content (selected), Components, Modules, System, Logout, Help, and My Admin. The Content menu is open, showing options for Add/Edit Sections, News, and FAQs. The main content area shows the News section with a search bar and a table of news items.

News Display # 10 Search: All Categories

<input type="checkbox"/>	Title	Category	Published	Checked Out	Access	Front Page	Reorder
<input type="checkbox"/>	<a href="#">Welcome to Mambo Open Source</a>	Latest News	<input checked="" type="checkbox"/>	Administrator	Public	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<a href="#">Example News Item 1</a>	Latest News	<input checked="" type="checkbox"/>		Public	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<a href="#">Example News Item 2</a>	Latest News	<input checked="" type="checkbox"/>		Public	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<a href="#">Example News Item 3</a>	Latest News	<input checked="" type="checkbox"/>		Public	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<a href="#">Example News Item 4</a>	Latest News	<input checked="" type="checkbox"/>		Public	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<< Start < Previous 1 Next > End >>

Results: 1 of 5

# Community Website / Portal

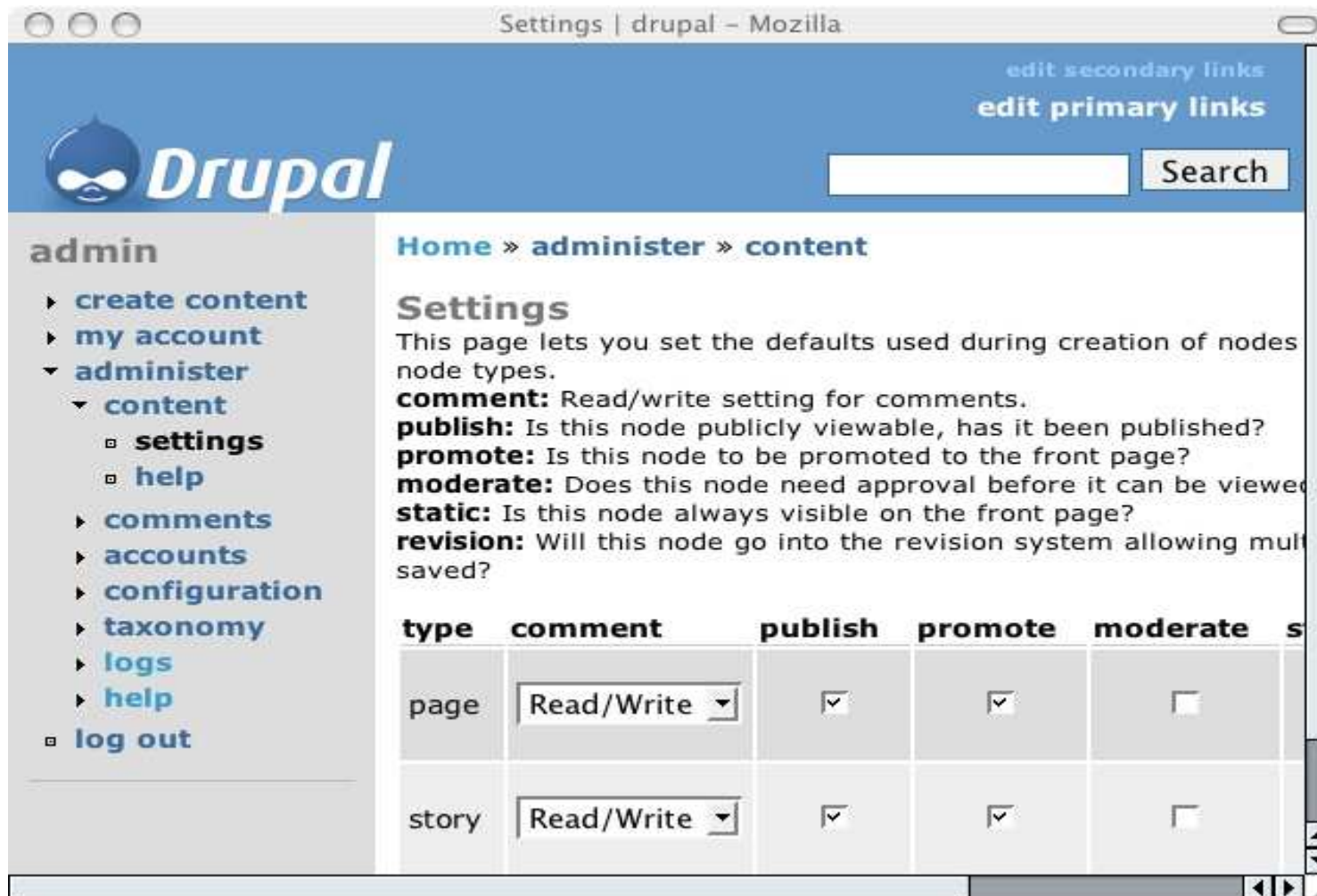
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Information “hub”: Distribute & collect information

- Discussions: Create a community
- Personalization: Customized view
- Syndication: Distribute content to other sites
- Aggregation: Pull in content from other sites
- Metadata: Categorize information
- Retrieval: Indexing and search
- Workflow: Author, preview, edit, publish

# Drupal

[www.drupal.org](http://www.drupal.org) Apache/IIS, MySQL/PostgreSQL, PHP



The screenshot shows the Drupal administration interface. The browser title is "Settings | drupal - Mozilla". The page header includes the Drupal logo, the text "Drupal", and links for "edit secondary links" and "edit primary links". A search box is present. The left sidebar shows the "admin" menu with options like "create content", "my account", "administer", "content", "comments", "accounts", "configuration", "taxonomy", "logs", "help", and "log out". The main content area shows the breadcrumb "Home » administer » content" and the "Settings" page. The settings page explains that it allows setting defaults for node creation and lists several settings: "comment", "publish", "promote", "moderate", "static", and "revision". A table below shows the settings for "page" and "story" node types.

Settings | drupal - Mozilla

edit secondary links  
edit primary links

Drupal

Search

admin

- ▶ create content
- ▶ my account
- ▼ administer
  - ▼ content
    - settings
    - help
  - ▶ comments
  - ▶ accounts
  - ▶ configuration
  - ▶ taxonomy
  - ▶ logs
  - ▶ help
- log out

Home » administer » content

### Settings

This page lets you set the defaults used during creation of nodes node types.

**comment:** Read/write setting for comments.  
**publish:** Is this node publicly viewable, has it been published?  
**promote:** Is this node to be promoted to the front page?  
**moderate:** Does this node need approval before it can be viewed?  
**static:** Is this node always visible on the front page?  
**revision:** Will this node go into the revision system allowing multiple saved?

type	comment	publish	promote	moderate	s
page	Read/Write ▾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
story	Read/Write ▾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

# Weblog / Blog - 1

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- Periodic “posts” by single or multiple authors
- Links, summaries, commentary, comments
- Not just for “bloggers” writing online journals



# Weblog / Blog - 2

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- Effective single-purpose CMS
- Simple and familiar interface
- Format benefits authors as well readers
- Friendlier face to a complex collection
- “Personal voice” serves as a guided tour
- Can be adapted for multiple uses
- Blog, project log, documentation, simple websites, anything else you can fit into the blog format

# WordPress

www.wordpress.org MySQL, PHP



The screenshot shows the WordPress administration interface in a Mozilla browser window. The title bar reads "WordPress > my weblog > Posts - Mozilla". The main heading is "WordPress". Below it are navigation links: "Write", "Edit", "Categories", "Links", "Users", "Options", "Plugins", "Templates", and "Profile". There are also links for "View site »" and "Logout (site admin)".

The "Posts" tab is selected, showing a list of posts. Above the list are filters: "Show Posts From Month of..." with a dropdown menu set to "May 2004" and a "Show Month" button; and "Show Posts That Contain..." with a search input field and a "Search" button.

ID	When	Title	Categories	Comments	Author	Edit	Delete
1	2004-05-25 8:28:03 pm	<a href="#">Hello world!</a>	<a href="#">General</a>	<a href="#">1 comment</a>	site admin	<a href="#">Edit</a>	<a href="#">Delete</a>

**Comments**

- 2004-5-25 @ 8:05:03 pm [ [Edit](#) - [Delete](#) - [Unapprove](#) ]  
**Mr WordPress ( [mr@wordpress.org](mailto:mr@wordpress.org) / <http://wordpress.org> )** (IP: 127.0.0.1 )  
  
Hi, this is a comment. To delete a comment, just log in, and view the posts' comments, there you will have the option to edit or delete them.

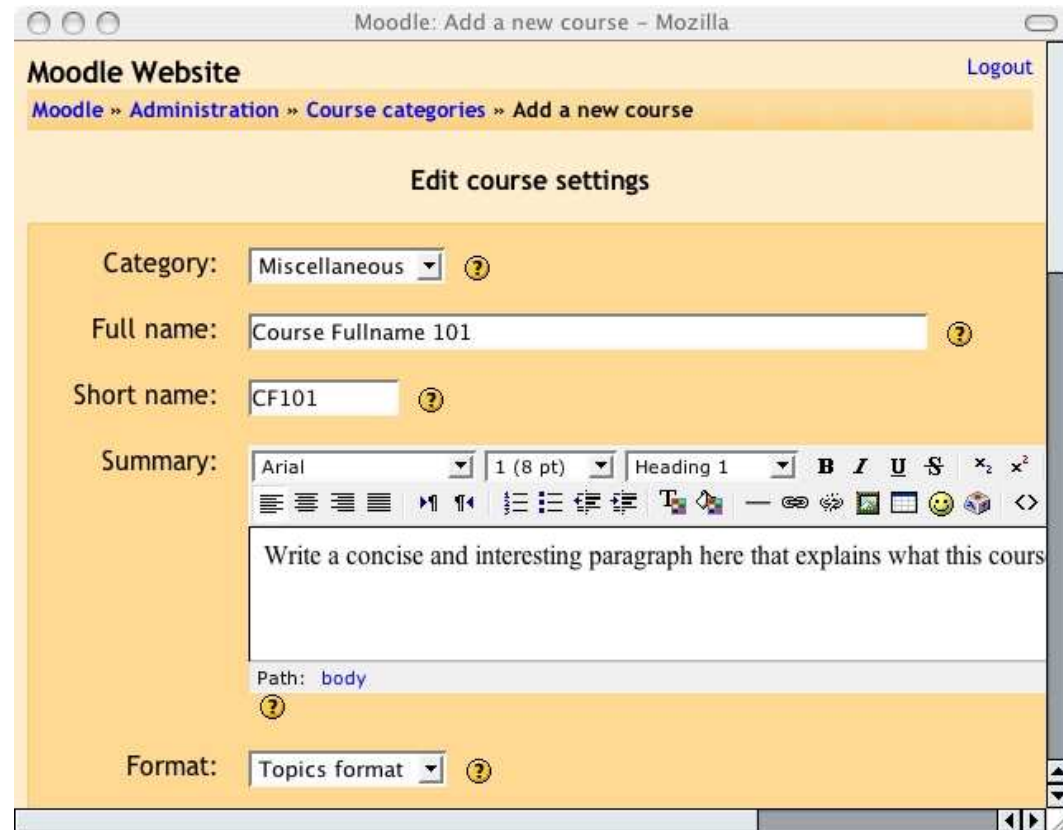
# Learning Management System

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- Conduct online education
- Supplement face-to-face instruction
- Uses:
  - Internal staff training
  - Virtual teamwork
  - Build institutional knowledge
- Open source LMSes provide affordable alternatives to high-cost proprietary LMSes

# Moodle

- Multiple courses
- WYSIWYG Editor
- Chat
- Glossaries
- Multimedia delivery
- Email integration
- MySQL, PHP
- [www.moodle.org](http://www.moodle.org)



The screenshot shows a web browser window titled "Moodle: Add a new course - Mozilla". The page content is as follows:

- Page title: Moodle Website
- Navigation: Moodle » Administration » Course categories » Add a new course
- Section: Edit course settings
- Category: Miscellaneous (dropdown menu)
- Full name: Course Fullname 101 (text input)
- Short name: CF101 (text input)
- Summary: A WYSIWYG editor with a toolbar (font: Arial, size: 1 (8 pt), heading: Heading 1, bold, italic, underline, strikethrough, link, unlink, image, table, smiley, help) and a text area containing the placeholder text "Write a concise and interesting paragraph here that explains what this course is about".
- Path: body (text input)
- Format: Topics format (dropdown menu)

# Wikis

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- Collaborative hyperlinked writing
- “Quick” - no need to know HTML
- Flexible structure - meant to evolve over time
- Combination of system and social rules
- Version control: “Roll back changes”
- Knowledge bases, internal documentation
- Intra-agency collaborative writing, brainstorming

# TikiWiki

[www.tikiwiki.org](http://www.tikiwiki.org) MySQL, PHP

The screenshot shows a Mozilla browser window titled "TikiWiki - Mozilla". The address bar displays "This is Tiki v1.8.1 -Polaris- © 2002-2004 by the Tiki community Mon 30 of Aug, 2004 [10:32] // debug". The browser's menu bar includes "Preferences", "MyTiki", "Messages", "User Files", "Favorites", "Tasks", "Bookmarks", "Modules", "Notepad", and "Watches".

The main content area is titled "User Menu" and features a navigation menu on the left with items: Home, Contact us, Stats, Categories, Calendar, Wiki, Image Galleries, Articles, Blogs, Forums, File Galleries, and Admin (click!).

The "User Menu" section includes a row of icons representing various site features. Below the icons is a search box with the label "Find:" and a "find" button. A table below the search box has columns for "x", "Pos", "Name", "URL", and "Mode". The table shows one entry with "x" in the first column and "Page: 1/0" below it.

Below the table is a section titled "Add or edit an item" with a form containing fields for "Name", "URL" (pre-filled with "/tiki/tiki-index.php"), "Position" (pre-filled with "1"), and "Mode" (pre-filled with "replace window"). A "save" button is at the bottom of the form.

On the right side of the page, there is a "Login" section showing "logged as: admin" and "Logout" links, along with a "user:" input field.

The footer of the page contains several logos: "Powered by TikiWiki", "MADE WITH CASCADING STYLE SHEETS", "W3C XHTML 1.0", "powered by pear", "ADOdb DATA POWER", "powered by php", "smarty TEMPLATE ENGINE", and "RDF Powered". Below these logos is a row of RSS feeds for "Wiki", "Blogs", "Articles", "Image galleries", "File galleries", "Forums", and "RSS".

# Intranet

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- Need most features discussed in previous examples
- Customizable workflow
- Flexible task delegation

# Plone

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- Complete cross-platform solution
- Can be used as public website, intranet, or both
- No need to install web server or database
- Can use Apache, other databases
- Based on Zope web application server



# Plone

www.plone.org Zope web application server

The screenshot shows a Mozilla browser window with the title "plone.org - Welcome to plone.org - Mozilla". The page features the Plone logo (a circle with three dots) and the word "Plone" in a large, light blue font. A search bar is located to the right of the logo, with a dropdown menu set to "all of plone.org" and a "search" button. Below the search bar is a navigation menu with links for "home", "about", "news", "downloads", "documentation", and "development". A status bar indicates "you are not logged in" and provides "log in" and "join" links. The main content area is divided into three columns. The left column contains a "navigation" sidebar with links to Home, About Plone, News, Downloads, Documentation, Development, Events, and Plone Foundation, and a "books" section for "The Definitive Guide to Plone" by Andy McKay. The middle column has a "Welcome to plone.org" heading, a sub-heading "This is the development and community site for Plone, a user friendly and powerful Content Management System.", and a section titled "What is Plone?" with a large illustration of a button on a ribbon, labeled "Plone Conference Vienna". The right column contains a "news" sidebar listing recent releases: PloneWebMail 0.95 (August 26), PloneFormMailer 0.2 RC1 (August 24), Plone 2.0.4 (August 16), PloneGazette 0.3 and PloneExtendedTypes 0.1 (August 10), and PloneCalendar 1.0-beta2 (August 10).

# Zope

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- Open source application server
- Used to build CMSes and web applications
- Primarily written in Python
- Hundreds of companies and thousands of developers contribute to its development
- [www.zope.org](http://www.zope.org)

# Tips

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- Choose stable open source CMSes
- Commercial technical support may be available for certain CMSes
- Check CMS for web accessibility (Section 508)
- Test CMSes: Open Source CMS  
<http://www.opensourcecms.com>
- Compare CMSes: The CMS Matrix  
<http://www.cmsmatrix.org>

# Resources

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Web Content Management With Open Source Software

Abhijeet Chavan

[www.urbaninsight.com/~chavan/2005/scale](http://www.urbaninsight.com/~chavan/2005/scale)

## Recent Articles

Open-Source Learning Management with Moodle

[www.linuxjournal.com/article/7478](http://www.linuxjournal.com/article/7478)

Developing an Open Source Content Management Strategy For E-Government

[www.urbaninsight.com/~chavan/2004/urisa-cms](http://www.urbaninsight.com/~chavan/2004/urisa-cms)

## Email

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