
Developing an Open Source Content Management Strategy For E-Government

Abhijeet Chavan

Chief Technology Officer, **Urban Insight**
www.urbaninsight.com

Co-Editor, **Planetizen**
www.planetizen.com

Presented at the
**42nd Annual Conference of the
Urban and Regional Information Systems Association**
November 9th, 2004
Reno, Nevada

Copyright 2004, Abhijeet Chavan

This work is licensed under a Creative Commons License.
See <http://creativecommons.org/licenses/by-nc-nd/2.0/>

Introduction

- How content management systems (CMS) can assist in building and maintaining sophisticated e-government websites
- Why Open source CMSes are suitable for e-government
- Review five innovative approaches to content management

Content Management Systems (CMS)

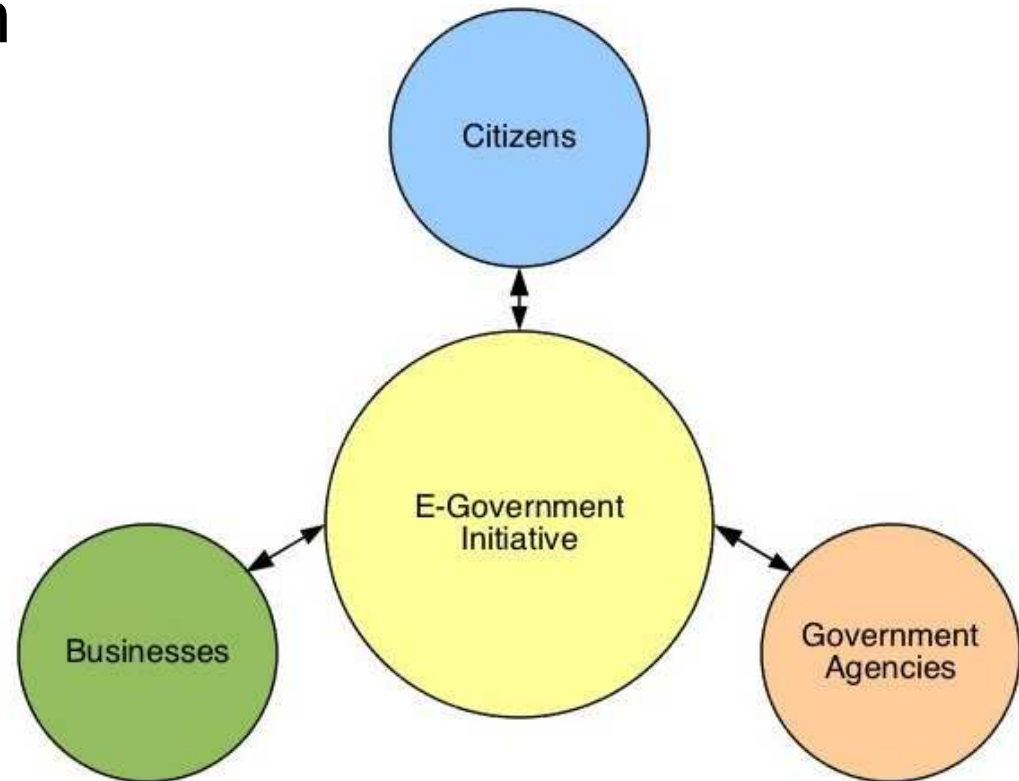
- Software system to facilitate management of website content
- Data is generally stored in a database
- Separation of content and visual display
- Includes tools for managing users and workflow

CMS Benefits

- 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

E-Government Initiatives

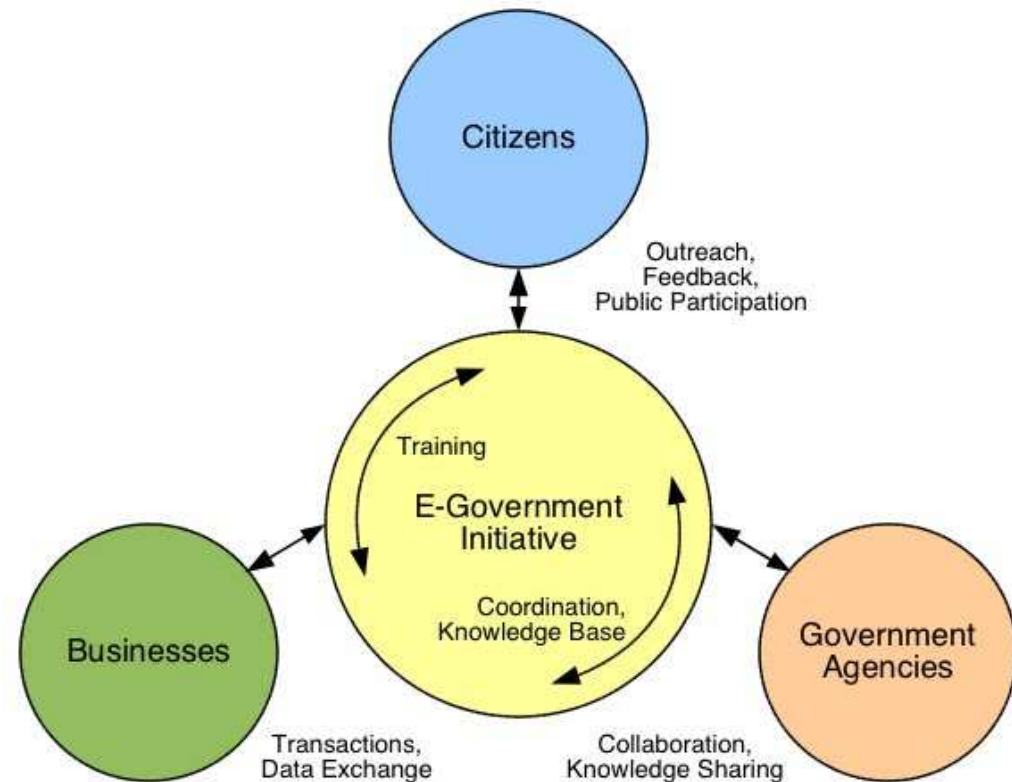
- Govt. to Citizens
 - Access to information and services
- Govt. to Govt.
 - Sharing and integrating data
- Govt. to Business
 - Streamline data collection and eliminate redundancies



– Source: www.egov.gov

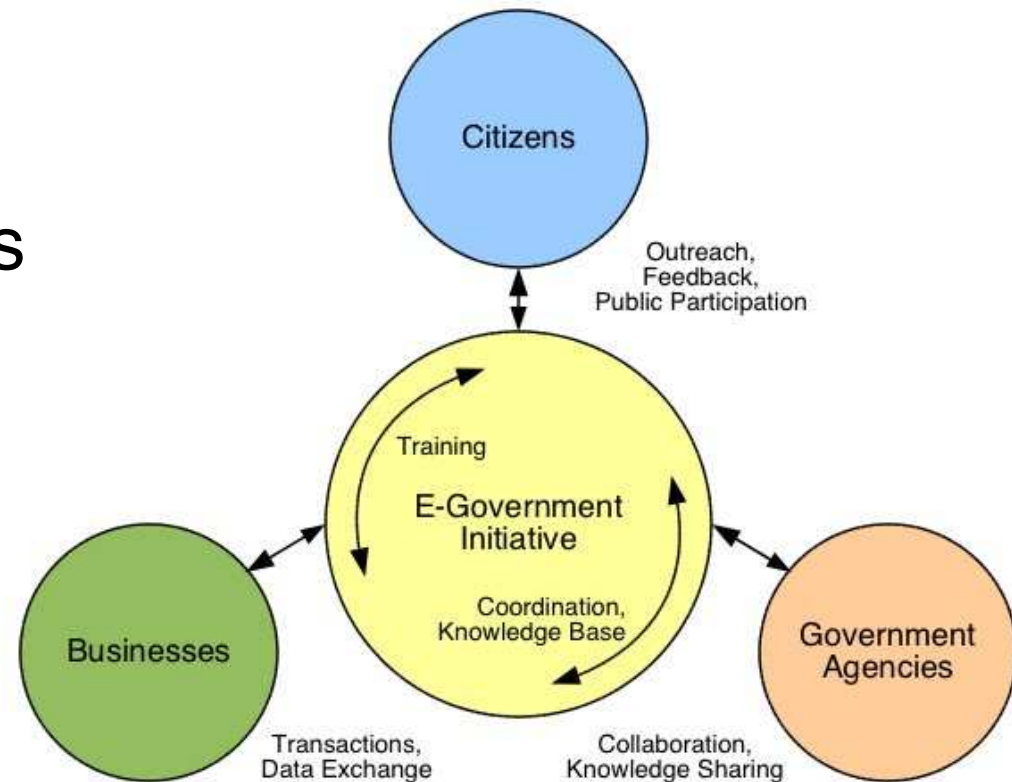
CMS Strategies for E-Government – 1

- Communicating with Citizens
 - Outreach
 - Feedback
 - Participation
- Communicating with Businesses
 - Services
 - Transactions
 - Data exchange



CMS Strategies for E-Government – 2

- Inter-agency collaboration
 - Shared knowledge bases, discussions, document repositories
 - Access to databases
- Intra-agency collaboration
 - Internal coordination and documentation
 - Training



Pre-built Proprietary CMSES

- Quick complete solution
- Technical support
- Are you buying more than you need?
- Entrusted with public data -- vendor “lock-in” can be a problem
- Expensive licensing costs
- Closed source may hinder customization
- Restrictive license may prevent redistribution

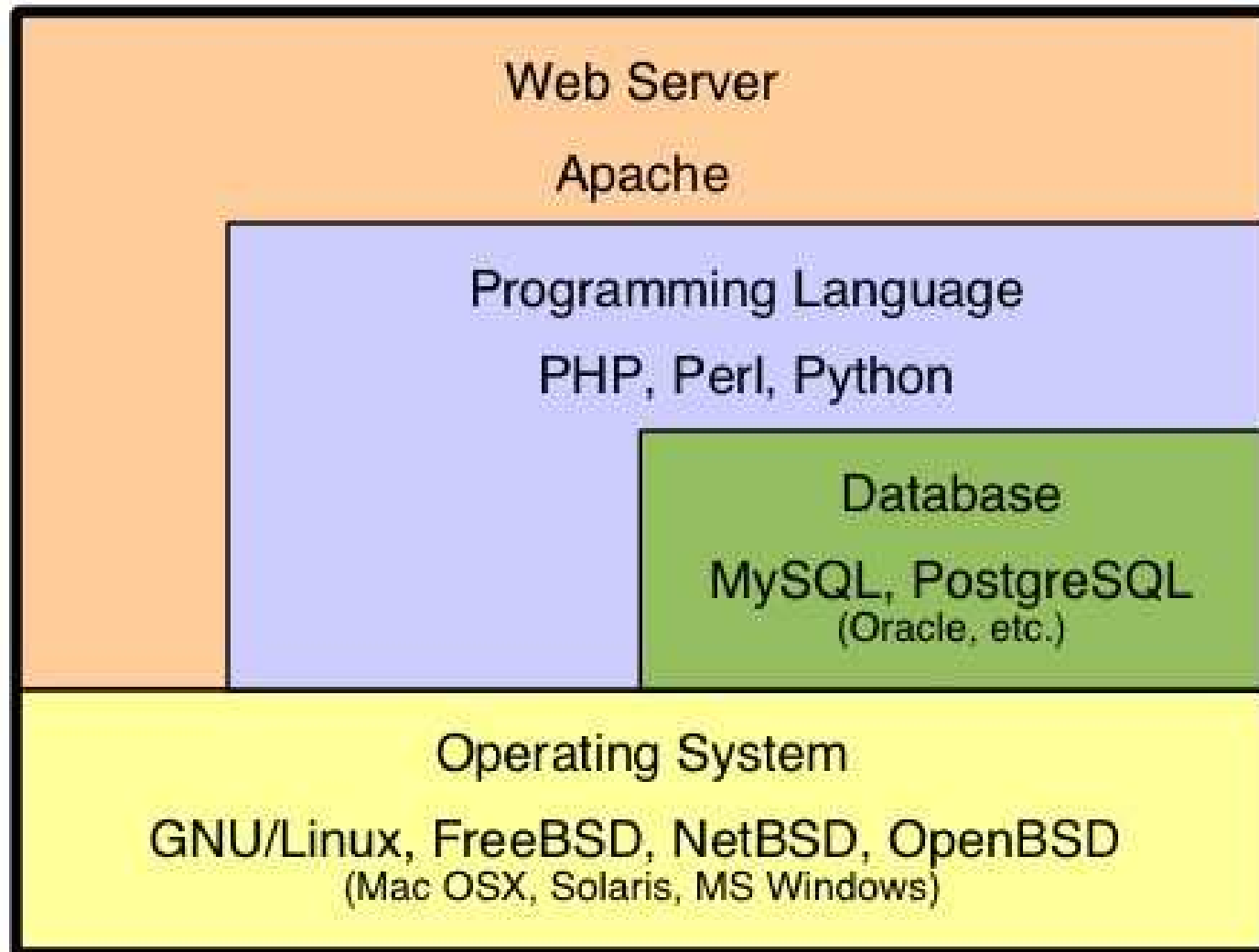
Custom Built CMSEs

- Built to your specifications
- Not dependent on a commercial vendor
- 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?

Open Source CMSes

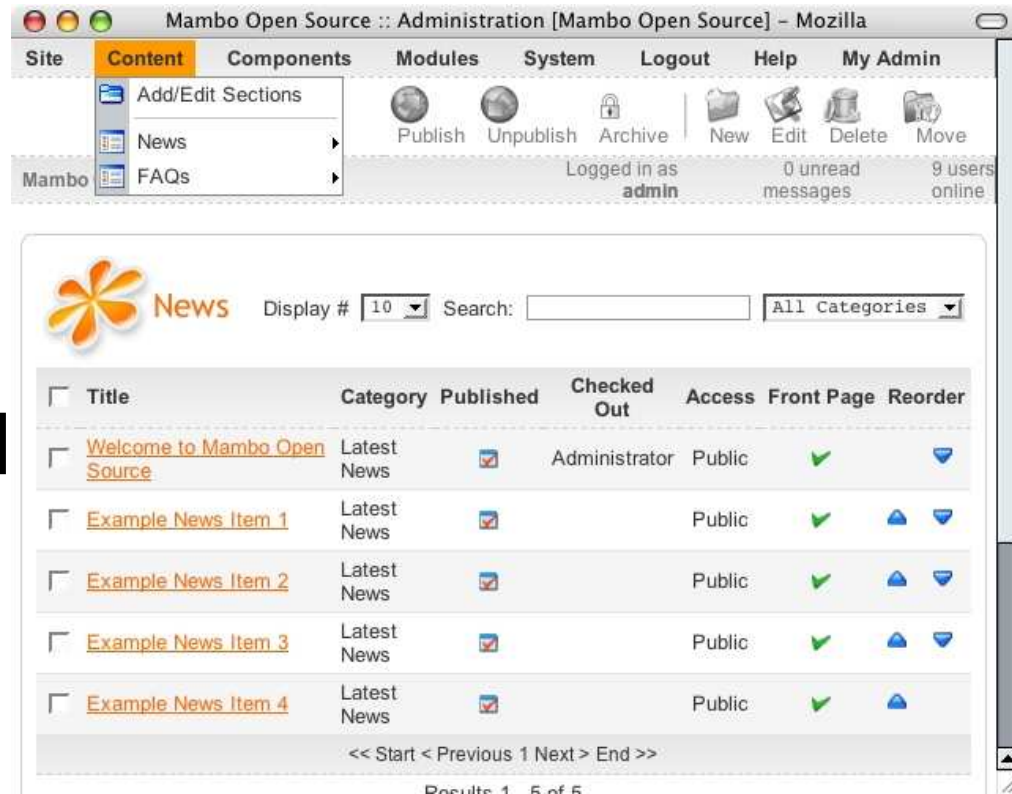
- Open source CMSes: pre-built but customizable
- Source code is available
- Can be customized and redistributed
- No licensing costs
- Numerous alternatives to match different requirements and platforms
- Commercial technical support may be available
- Control your own data and CMS strategy

Open Source LAMP Platform



Choosing an Open Source CMS

- CMS for conventional websites: Mambo
- Review five innovative approaches to CM
- All examples licensed under the GNU General Public License (GPL)

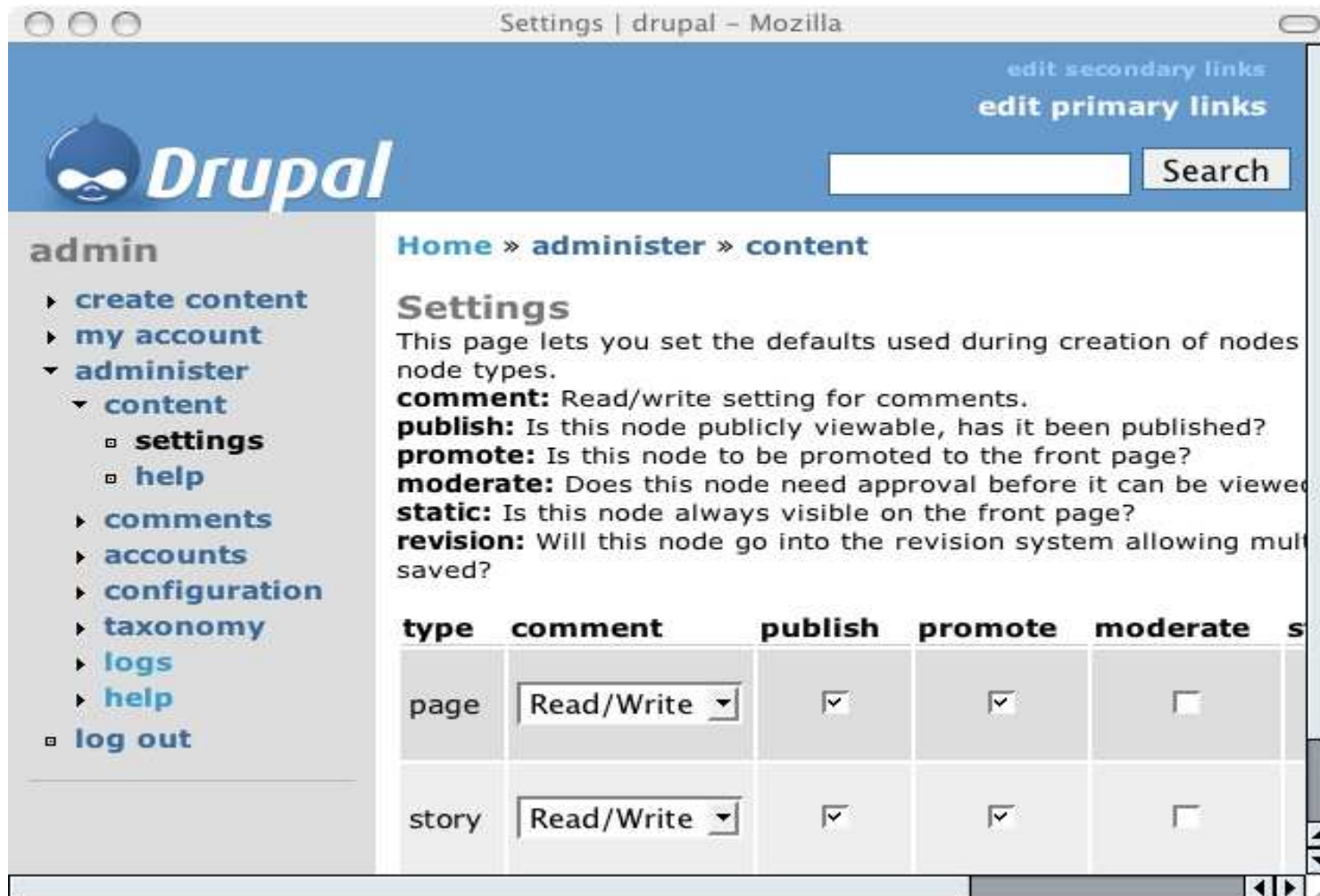


Community Website / Portal

- An information “hub”
- Both distribute and 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 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", and "static". 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

- Periodic “posts” by single or multiple authors
 - Links, summaries, commentary, comments
- Not just for “bloggers” writing online journals
- Simple and familiar interface
 - Format benefits authors as well readers
- Friendlier face to a complex collection
 - “Personal voice” provides a guided tour
- Effective single-purpose CMS
- Internal use: project log, documentation

WordPress

- www.wordpress.org MySQL, PHP



The screenshot shows the WordPress admin 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", "Profile", "View site »", and "Logout (site admin)". A tabbed interface shows "Posts" selected, with "Comments" and "Awaiting Moderation" also visible. The main content area contains a search form for posts, with a dropdown menu set to "May 2004" and a "Show Month" button. Below that is another search form for posts containing specific text, with a "Search" button. A table lists the posts:

ID	When	Title	Categories	Comments	Author	Edit	Delete
1	2004-05-25 8:28:03 pm	Hello world!	General	1 comment	site admin	Edit	Delete

Below the table is a "Comments" section with one comment:

1. 2004-5-25 @ 8:05:03 pm [[Edit](#) - [Delete](#) - [Unapprove](#)]
Mr WordPress (mr@wordpress.org / <http://wordpress.org>) (IP: 127.0.0.1)

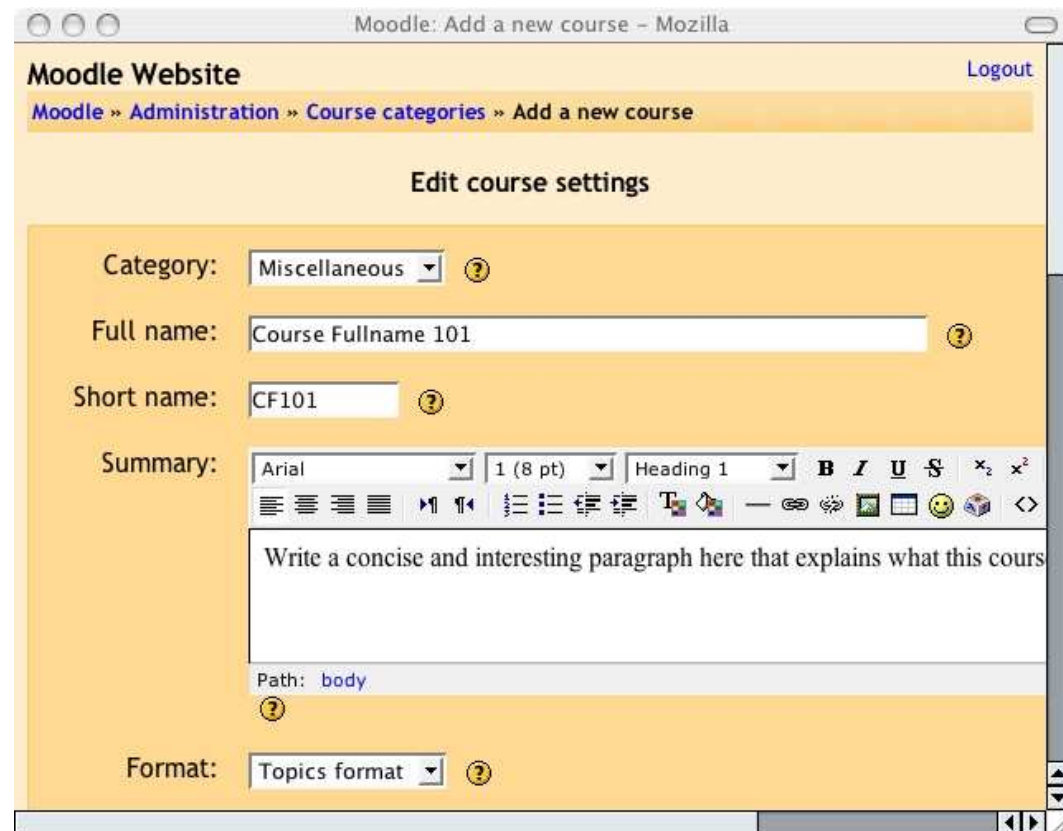
Hi, this is a comment. To delete a comment, just log in, and view the posts' comments, there you will have the option to edit or delete them.

Learning Management System

- 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 and
- Glossaries
- Multimedia delivery
- Email integration
- MySQL, PHP
- www.moodle.org



The screenshot shows a web browser window titled "Moodle: Add a new course - Mozilla". The page content includes a breadcrumb trail: "Moodle » Administration » Course categories » Add a new course". The main heading is "Edit course settings". The form fields are as follows:

- Category:** A dropdown menu set to "Miscellaneous" with a help icon.
- Full name:** A text input field containing "Course Fullname 101" with a help icon.
- Short name:** A text input field containing "CF101" with a help icon.
- Summary:** A rich text editor with a toolbar showing options for font (Arial), size (1 (8 pt)), heading (Heading 1), bold (B), italic (I), underline (U), strikethrough (ABC), link (x₂), unlink (x²), list, indent, outdent, undo, redo, and help. The text area contains the placeholder: "Write a concise and interesting paragraph here that explains what this course is about". Below the text area is a "Path: body" label with a help icon.
- Format:** A dropdown menu set to "Topics format" with a help icon.

Wikis

- 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 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 features. Below the icons is a search box with the text "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" (containing "/tiki/tiki-index.php"), "Position" (containing "1"), and "Mode" (containing "replace window" with a dropdown arrow). A "save" button is located at the bottom of the form.

On the right side of the page, there is a "Login" section with the text "logged as: admin", a "Logout" link, and a "user:" label followed by an 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: "RSS Wiki", "RSS Blogs", "RSS Articles", "RSS Image galleries", "RSS File galleries", "RSS Forums", and "RSS".

Intranet

- Features
 - All discussed in previous examples
 - Customizable workflow
 - Flexible task delegation
- Plone CMS
 - Complete cross-platform solution
 - No need to install web server or database
 - Web usability and accessibility (Section 508)
 - Can be used as public website, intranet, or both

Plone

www.plone.org Zope web application server

The screenshot shows the Plone website homepage in a Mozilla browser window. The browser title is "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, stylized font. A search bar is located in the top right corner, 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 several sections:

- navigation:** A vertical sidebar with links for Home, About Plone, News, Downloads, Documentation, Development, Events, and Plone Foundation.
- books:** A section titled "The Definitive Guide to Plone" by Andy McKay, with a "log in" button below it.
- Welcome to plone.org:** A central section with the heading "Welcome to plone.org" and the text "This is the development and community site for Plone, a user friendly and powerful Content Management System." Below this is a section titled "What is Plone?" and a large illustration of a button with the text "Plone Conference" and "Vienna" below it.
- news:** A vertical sidebar on the right with a list of recent news items, including "PloneWebMail 0.95 released" (August 26), "PloneFormMailer 0.2 RC1 released" (August 24), "Plone 2.0.4 Released" (August 16), "PloneGazette 0.3 and PloneExtendedTypes 0.1 released" (August 10), and "PloneCalendar 1.0-beta2 released" (August 10).

Tips

- Choose stable open source CMSes
- Commercial technical support may be available for certain CMSes
- Check CMS for web accessibility (Section 508)
- Security