Web-based Course Development using OSS Course Management Systems

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Different DELIVERY Models

- Class Room
- Distance Learning
  - Synchronous
  - Asynchronous
- E-Learning

<table>
<thead>
<tr>
<th>Program Component</th>
<th>Classroom</th>
<th>Distance Learning</th>
<th>e-Learning</th>
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<tbody>
<tr>
<td>Pre-Assessment</td>
<td>Instructor</td>
<td>Instructor</td>
<td>Learning System</td>
</tr>
<tr>
<td>Content</td>
<td>Instructor</td>
<td>Instructor</td>
<td>Learning System</td>
</tr>
<tr>
<td>Instructional Design</td>
<td>Instructor</td>
<td>Instructor</td>
<td>Learning System</td>
</tr>
<tr>
<td>Delivery</td>
<td>Instructor</td>
<td>Instructor</td>
<td>Learning System</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Instructor</td>
<td>Instructor</td>
<td>Learning System</td>
</tr>
<tr>
<td>Administration</td>
<td>Instructor/System</td>
<td>Instructor/System</td>
<td>Learning System</td>
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</table>
Architecture of E-Learning System

- **Learning Portal**
- **Learning Contents**
- **Software Infrastructure**
- **Hardware Infrastructure**
- **Hosting/Maintenance**

**Learners**
Software Architecture of an E-Learning System

Adaptive Learning Engine

Course Management

PORTAL

Databases

Instructional Design DB

Users DB

Content DB

Authoring

Corporate Information System

E-Commerce Transactions

Instructional Design DB

Users DB

Content DB
Learning Management System

Collaboration support

Service support

Content delivery/management/construction

Pedagogical Considerations
E-Learning Framework

(Student learning through:
acquiring skills → constructing knowledge and understanding → participation and interaction)

Administration
- e-mail, calendar tools, web pages
- web resources, electronic files/documents, digital audio/video, etc.

e-Enhanced
- assessment tools, discussion tools, student submission of materials

e-Enabled
- collaborative working tools, asynchronous chat, video conferencing, portal

e-Essential

(Center for Learning and Teaching, 2003
http://www.wlv.ac.uk/celt/oltips/3what.html)
## Make or Buy?

<table>
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<tr>
<th></th>
<th>Commercial</th>
<th>Own Development</th>
<th>Open Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>Medium</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Flexibility</strong></td>
<td>Medium</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td><strong>Integration</strong></td>
<td>Problematic</td>
<td>Good</td>
<td>Medium</td>
</tr>
<tr>
<td><strong>Support</strong></td>
<td>Good</td>
<td>Costly</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Vendor Lock</strong></td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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</table>
Procedure in Developing Web-based Course

1. Conduct Instructional Analysis
2. Developing & Preparing Learning Object Materials
3. Developing Program Mapping
4. Apply for Web-based Class
5. Log in to the Online Class
6. Configuring the Online Class Tools
Procedure in Developing Web-based Course (cont.)

7. Preparing/Managing Class Calendars (weekly, monthly, one semester)
8. Uploading LOMs into the system
9. Arranging LOMs using the Course Tools based on Program mapping
10. Managing Students (registering, grouping, tracking, etc.)
11. Managing communications (e-mail, discussion forum, chatting)
12. Managing Assignment (quizzes, exercises, examination)
13. Monitoring & Evaluation
Flowchart of Developing Web-based Course

1. Apply for Web-based Class
   - Log in to the Class
   - Configuring the Class Tools
   - Managing Class Calendars
   - Uploading LOMs

2. Instructional Analysis
   - Developing & Preparing Learning Object Materials (LOMs)
   - Program Mapping
   - Managing Students
   - Managing Communications
   - Managing Assignments/Assessment

3. Monitoring & Evaluation
   - Arranging LOMs
Source of CMS Information

www.edutools.info
Some Open Source & Free CMS

- .LRN (OSS)
- ATutor 1.4 (OSS)
- Bazaar 7 (OSS)
- Bodington (OSS)
- BSCW 4.0.6 (Free)
- Claroline 1.5 (OSS)
- ClassWeb 2.0 (OSS)
- Colloquia 1.3.2 (Free)
- COSE 2.051 (Free)
- CourseWork (OSS)
- Eledge 3.1 (OSS)
- ETUDES (Free)
- Fle3 (OSS)
- ILIAS (OSS)
- Internet Course Assistant 2.0 (Free)
- Jones e-education V2004 (Free)
- KEWL 1.2 (Free)
- LON-CAPA 1.1 (OSS)
- Manhattan Virtual Classroom 2.3 (OSS)
- MimerDesk 2.0.1 (OSS)
- Moodle 1.1 (OSS)
- WebWork (Free)
- Whiteboard 1.0.2 (OSS)
Overview

.LRN is the world’s most widely adopted enterprise-class open-source software for supporting learning and research. Originally developed at MIT, .LRN today is used by nearly half a million users in more than eighteen countries worldwide. With a powerful underlying development framework that promotes scalable innovation for collaborative education, .LRN is used by higher education institutions, as well as K-12, government, and non-profit organizations. .LRN also provides a total cost of ownership significantly lower than custom or commercial solutions.

Register and participate in our online and blended learning discussions or our more technical forum.

The .LRN application suite is backed by a thriving user community and by the .LRN Consortium. Consortium member institutions work together to support each other’s deployments and to accelerate and expand the adoption and development of .LRN. To this end, the Consortium ensures software quality by certifying components as .LRN-compliant, coordinates software development plans, and maintains ties with OpenACS, the open source toolkit which forms the basis for .LRN.
ATutor 1.4 (OSS): www.atutor.ca

What is ATutor?
ATutor is an Open Source Web-based Learning Content Management System (LCMS) designed with accessibility and adaptability in mind. Administrators can install or update ATutor in minutes, and develop custom templates to give ATutor a new look. Educators can quickly assemble, package, and redistribute Web-based instructional content, easily retrieve and import prepackaged content, and conduct their courses online. Students learn in an adaptive learning environment.

Why ATutor?
ATutor is the first fully inclusive LCMS, complying with the W3C WCAG 1.0 accessibility specifications at the AA+ level, allowing access to all potential learners, instructors, and administrators, including those with disabilities who may be accessing the system using assistive technologies. Conformance with W3C XHTML 1.0 specifications ensures that ATutor is presented consistently in any standards compliant technology.

ATutor has also adopted the IMS/SCORM Content Packaging specifications.
Welcome to Bazaar.

- About Bazaar
- Change Log
- Developer List
- Examples of Bazaar at Work
- Tools
- System Requirements
- Admin FAQ
- User FAQ
- Announcements
- RSS Importing Samples
- Guest Book
- ADLib RSS: Recent Learning Objects
- Bazaar Demo Site

Courses
A complete list of courses hosted by this system.

Journals
Athabasca supported scholarly journals

Projects
Container for AU supported web page and portal projects

Committees
AU Committees Settings

Bazaar Documentation
Tutorials and help for general, admin, and developer users.
Claroline 1.5 (OSS)
www.claroline.net

Claroline is an open-source software-based learning management system. It's a collaborative environment for education institutions and administrators to work online.

The system provides tools for forums, chat, document repositories, course management, and profile administration.
ClassWeb 2.0 (OSS)
http://classweb.ucla.edu

ClassWeb was designed to let instructors easily create and control class websites. We learned a lot. We made a lot of mistakes. Think of this open source distribution as a “full-disclosure” of how we did what we did. To make use of it, you will have to create your own database and alter our templates to fit your needs. Where it’s possible to use only certain modules on their own, we make note of that on the Download page. ClassWeb is freely distributed under the GNU Public License.

About ClassWeb
- Executive Overview
- Features
- Technical Overview
- License & Copyright Info
- Contact Info

Download & Instructions
- Change Log
- Requirements Version: 2.03
- Installation Instructions Version: 2.03
- Multilingual Readme Wiki
- Maintenance
- Download ClassWeb Version: 2.03

Latest News
- 06-15-05 Taking down demo for security reasons.
- 02-12-04 Restored functionality of ClassWeb demo site and verified integrity of ClassWeb distribution files.
- 09-26-02 Released ClassWeb 2.03 here, SourceForge, and Freshmeat.
- 09-18-02 Created a public Wiki site to support the development of new language files for Multilingual ClassWeb 2.03.

ClassWeb in Use at UCLA
- UCLA Social Sciences Classes
- Examples of ClassWeb Use
CourseWork (OSS)

http://getcoursework.stanford.edu

Overview of CourseWork

CourseWork is an open source course management system, designed to provide an open, modular framework for learning objects. It uses OKI APIs whenever possible.

It is written primarily in Java, using the Java servlet technology. Stanford's implementation of CourseWork runs with the Apache web server, using TomCat 4.0 for the Java servlet server. DTL (Display Template Language), developed at Stanford, is used to create the presentation displays. The database back end is Oracle. CourseWork has been run on both Sun Solaris and Linux.

Other institutions have ported CourseWork to work with PostgreSQL, and we expect that it is compatible with other SQL implementations as well.

Version 3.0 ships with a simple authentication system, but this can be easily removed so that an institution can integrate it with their own campus authentication systems.

CourseWork Demo

A CourseWork demo server is available to view the software from the student's perspective. You can register for an account on the server and log in at http://coursework-demo3.stanford.edu/coursework. Demo courses to examine the administration interfaces will be available in the near future.

Please note that we reserve the right to delete any materials posted on the demo server.
Eledge Open Learning Management System

Welcome to the Eledge home page.
Our mission is to give educators the electronic edge in management of online educational and instructional web sites.

Open Source Software

This software is distributed as a free download under the terms of the GNU General Public License. It comes with NO WARRANTY whatsoever, not even the implied warranty of merchantability or fitness for a particular purpose. This method of distribution was chosen to:

- ensure that the software will always be freely available
- to allow users to customize the software to meet their individual needs
- to encourage collaborative development and support of the best possible software products

Course Management Software

This software is designed to provide the framework for creating a web site for online instruction, including student registration, authentication, content creation, quizzes, exams, homework graders, report uploads, instructor gradebook, class calendar, and online help. Eledge does not provide knowledge content; we only provide a convenient, flexible way for instructors to make their course materials accessible to students over the Internet.

Open Source Supporting Software

Eledge consists of a collection of Java servlets that utilize a MySQL database back end to store information and course content. The Java programming language, MySQL database, and Eledge itself are all open
Fle3 (OSS): http://fle3.uiah.fi/

Our environment 1.5

Log into Fle3.

13 May 2005

Something new here - a test.

This is just a test. And here is a link to FLOSSGE Posse the group blog writing about free and open source software in education. And here is a picture from somewhere. Another test.

24 April 2005

New demo courses started

The new version of the Fle3 has been released. This is it - Fle3 1.5. If you want to test this you can use username/password - admin/admin. The demo is normally available for everyone.
LON-CAPA 1.1 (OSS)

Open Source Freeware Distributed Learning Content Management and Assessment System

Sharing and using online learning and assessment materials across institutions and disciplines. Today.

What is LON-CAPA?
- Features
- Presentations
- Awards and Recognitions
- Reviews
- Demos

Community
- Conferences/Workshops/Events
- Visiting our Group
- User Institutions
- Cluster Map
- Partner Organizations
- Shared Content Repository
- Mailing Lists
- Sponsorship Information
- LON-CAPA Academic Consortium Document (pdf)
Welcome to Manhattan!

The Manhattan Virtual Classroom is a password protected, web-based course management system that includes a variety of discussion groups, live chat, areas for the teacher to post the syllabus and other handouts and notices, a module for organizing online assignments, a grades module, a surveys module, and a unique, web-based email system open only to students in the class. Developed at Western New England College, Manhattan is free, and is released under the GNU General Public License.

2005-05-05 Alpha code released

Posted by smartmont on Friday 06 May 05:30:14 (read: 415 times)

The May 05, 2005 edition of the Manhattan version 3 Alpha code has been posted. It includes code-reviewed versions of...

Read More... 1073 bytes more
Moodle 1.1 (OSS): moodle.org

Welcome to Moodle!

Moodle is a course management system (CMS) - a free, Open Source software package designed using sound pedagogical principles, to help educators create effective online learning communities. You can download and use it on any computer you have handy (including webhosts), yet it can scale from a single-teacher site to a 40,000-student University. This site itself is created using Moodle, so check out the Moodle Features demos, the Demonstration Courses or read the latest Moodle Buzz.

Moodle Community

Moodle has a large and diverse user community with over 50,000 users registered on this site alone, speaking 60 languages in 115 countries. The best place to start is Using Moodle, which is where the main international discussions are held in.
Whiteboard 1.0.2 (OSS)

Whiteboard Courseware System

Project Home Page

Description
Whiteboard is a fully-featured and integrated courseware system, targeted toward colleges and universities. It supports multiple departments and courses (including cross-listed courses), simple migration of courses to new semesters; grade storage, checking, and calculation; assignment submission and testing, and submitted assignment retrieval; documents; announcements; and discussion boards. It is written in PHP with a MySQL back-end, and is fully administrable through its web interface.

License
Whiteboard is distributed under version 2 of the GNU General Public License.

Demo
And now, what you really wanted... the demo. When you need to log in, use username "demo" and password "demo". Note that this server is sometimes rather slow during peak browsing times and after new releases, so if you are having trouble using the demo please try again later or download it and play with it on your own server.

Current Version
The latest version of Whiteboard is v1.0.3, released August 8, 2003. This release fixes a few minor bugs in v1.0.2. All Whiteboard users are encouraged to upgrade. See readme for details.
Course Management Software Evaluation

- Online Syllabus
- Course materials/student home pages
- Interactivity
- Assignments
- Announcements
- Course Management
- Content
- Testing
Course Management Software

Evaluation

Online Syllabus

- Little or no HTML knowledge required
- Password and username security
- Search tool for course material
- Desktop-based file management for uploading file to server
- Addition of file links for course material is easy
Course Management Software

Evaluation

Course materials/student home pages

- Student presentation area
- Instructor can assign specific course material to an individual or to a group of students
- Students can create pages for course
Course Management Software Evaluation

Interactivity

- Electronic mail
- Bulletin Board/Newsgroup
- Chat facility
- Logged chat
- Additional items like Java are easy to add
Assignments

- Homework assignments
- Upcoming events
- Exams
Announcements

- Date of when announcement is posted
- Alert sound or mass email post to all students
Course Management Software Evaluation

Course Management

- Ability to add and delete students
- Ability to assign user ids & passwords
- Ability to create and edit home pages
- Ability to manage any open discussion groups
- How important is it for you to have the course id and password administered in this package automatically?
Course Management Software
Evaluation

Content
- Automatic glossary tool
- Automated index tool
- Searchable help files
- Uploading capabilities
Course Management Software Evaluation

Testing

- Little or no HTML required
- Multiple choice self-question tutorial questions (automatic marking)
- Essay exams
- Customized feedback to tutorial questions
- Time quizzes (graded with permanent retention marks)
- On-line marking and grades management of timed quizzes
- Generate a random set of questions from a pool
  Redirect tutorial path depending on answer
- Student can view their grade and compare to a class summary data
- Ability for instructor to email grades to students
Course Management Software Evaluation

Overall Features

- Easy & fun to use
- Intuitive interface and design
- Easy to support
Next is How to Manage Online Course

Using Manhattan Virtual Class