

Case Study on Moodle as Academic ERP

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Abstract— Academic ERP is software that provides facilities to execute academics related task. An idle ERP contains student records, quiz, assignment, feedback and many other blocks of an academic. In this paper, we explored possibility of Moodle as academic ERP. We initially bogged down most important features of any Academic ERP and then we map this features with Moodle functionality. Our research and exploration suggest that we do not need to purchase any costly academic ERP software rather we can use Moodle efficiently and effectively for all academic activities.

Keywords— Moodle, academic ERP, student, feedback, quiz, attendance

I. INTRODUCTION

An Enterprise Resource Planning (ERP) system is a generic term for an integrated enterprise computing system. ERP is a customized software system that handles the majority of an enterprise's information based requirements. It has a common database and it works on a single development environment. ERP systems can be customized to support an organization's business processes.^[1]

ACADEMIC ERP

As ERP system handles majority of information, Academic ERP system handles all information about academic process. It includes student records, upcoming events, online quiz, assignment, journal, feedback and many other blocks of an academic.

INTRODUCTION OF MOODLE

Moodle is free software that allows you to create powerful, flexible, and engaging online learning experiences^[5]. The word Moodle was originally an acronym for Modular Object-Oriented Dynamic Learning Environment. In this paper, we tested MOODLE as Academic ERP. In moodle, student records can be stored and student can be enrolled to particular course. Online attendance of students is recorded. Students can take a look of their attendance. Course wise online quiz of students can be taken. Information about notice or upcoming events can be notified under upcoming events section. Moodle provides all this features of an academic ERP.

II. ACADEMIC ERP

As we are testing moodle as Academic ERP, An academic ERP system is required to have the following characteristics:

- Modular design comprising many distinct modules such as courses, attendance, quiz, feedback, student, etc.
- Use centralized common database management system (DBMS).
- The modules are integrated and provide seamless data flow among the modules, increasing operational transparency through standard interfaces.
- Flexible and offer best business practices.
- The modules work in real time with online and batch processing capabilities.
- Messaging, Feedback, Forum.

BENEFITS OF ERP

There are many reasons to start down the ERP path. One of the main advantages to ERP is improved access to information. With some legacy systems it is challenging to develop reports or to tap into transaction data stored on the computer. Modern ERP systems often improve upon this process and provide a strong foundation for moving to a data warehouse that can provide even more capability to extract data from administrative information systems.^[4]

Another reason to consider ERP is to improve workflow and efficiency as an example; online requisitions can be completed and workflow processes can forward the form along the approval path more rapidly than with traditional paper processes. Another reason to consider ERP is the ability to improve controls and to program alerts. Alerts, for example, can be programmed to warn students about attendance and to implement controls that prevent students.

III. MOODLE AS AN ACADEMIC ERP

Moodle is a software package for producing Internet-based courses and web sites. It is a global development project designed to support a constructionist framework of education. Moodle is provided freely as Open Source software. It can be run on Windows and Mac operating systems and many flavors of linux (for example Red Hat or Debian GNU). The word Moodle was originally an acronym for Modular Object-Oriented Dynamic Learning Environment. Moodle provides various features with concept known as block and module. It contains role based registration of students and teachers. It uses PHP and MYSQL as front-end and back-end respectively. These both are reliable, best and open source software.

MOODLE: SOCIAL CONSTRUCTIONISM

Moodle is designed to support a style of learning called *Social Constructionism*. This style of learning is interactive. The social constructionist philosophy believes that people learn best when they interact with the learning material, construct new material for others, and interact with other students about the material. The difference between a traditional class and a class following the social constructionist philosophy is the difference between a lecture and a discussion.

Moodle does not require you to use the social constructionist method for your course but still it supports this method. Like, Moodle allows you to add several kinds of static course material. This is course material that a student reads, but does not interact with:

- Web pages
- Links to anything on the Web (including material on your Moodle site)
- A directory of files
- A label that displays any text or image

Moodle also allows you to add interactive course material. This is course material that a student interacts with, by answering questions, entering text, or uploading files:

- Assignment (uploading files to be reviewed by the teacher)
- Choice (a single question)
- Lesson (a conditional, branching activity)
- Quiz (an online test)

Moodle also offers activities where students interact with each other. These are used to create social course material:

- Chat (live online chat between students)
- Forum (you can have zero or more online bulletin boards for each course)
- Glossary (students and/or teachers can contribute terms to site-wide glossaries)
- Wiki (this is a familiar tool for collaboration to most younger students and many older students)
- Workshop (this supports the peer review and feedback of assignments that students upload)

In addition, some of Moodle's add-on modules add even more types of interaction. For example, one add-on module enables students and teachers to schedule appointments with each other.

IV. MOODLE BLOCKS

As in this paper we cannot discuss all various functionalities. Moodle provides many blocks (Add-ons), out of them 3 blocks are most important block. Attendance, quiz,

and Feedback are required activities of any academic area. We thought these three are main academic blocks. Our papers focus is on these main three modules.

QUIZ MODULE

In any academic system, evaluating student is very important aspect but it is also very tedious activity. Moodle provides all the familiar forms of assessment including true-false, multiple choice, short answer, matching question, random questions, numerical questions, embedded answer questions with descriptive text and graphics.

There are three steps to create a quiz.

1. Create quiz and adjust settings.
2. Create questions, organize into categories.
3. Add the questions into the quiz and assign points.

Fig. 1 create quiz and adjust settings.

Fig. 2 Create questions, organize into categories.

Attempts: 2
Showing graded and ungraded attempts for each user. The one attempt for each user that is graded is highlighted. The grading method for this quiz is **Highest grade**.

#	First name / Surname	Started on	Completed	Time taken	Grade/10	#1	#2
1	Bhoomika Sukhadiya	5 April 2014, 04:38 PM	5 April 2014, 04:38 PM	11 secs	5/5	0/5	5/5
2	Dharmangi Dalva	5 April 2014, 04:35 PM	5 April 2014, 04:37 PM	1 min 30 secs	5/5	5/5	0/5
Overall average					5	2.5/5	2.5/5

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Preferences just for this page
 Show / download: ☐ all attempts
 Show / download: ☐ only the attempt that is graded for each user (**Highest grade**)

Your preferences for this report
 Page size: 30
 Show / download marks for each question: ☐ Yes ☒ No

Save preferences

Submit

Save without submitting | Submit page | Submit all and finish

Fig. 3 adds questions into the quiz.

Fig. 1 describes that how to create quiz. Different settings are also available. Display style and steps of creating quiz differ from one version to another version of moodle. Fig. 2 shows the look of quiz that appears to student. Fig. 3 shows report of quiz as after conducting quiz we need reports.

ATTENDANCE MODULE

Adding an Attendance Module to Course: -

Attendance can be taken by Attendance module for all courses. We will add only one module of Attendance for one course. We can configure attendance module as follow:

1. Enter the course,
2. Go to the topic where you want the attendance to be placed,
3. Click on the Add an activity dropdown menu,
4. Select Attendance (You will be redirected to the Editing Attendance page),
5. Type in a "Name" for the Attendance.
6. Set a "Grade" for the attendance to be added in the Grade book
7. Click "Save and display"
8. From "Add" tab, add your classes' sessions' dates (This function allows you to create multiple sessions in one simple step),
9. Click "Add Session", and your classes will be created.

Taking Attendance

1. Click on attendance section of your course.
2. Opposite to the session of your choice, click the green dot
3. You will be redirected to the attendance page, you can set the status of each student to either **A: Absent**, **P: Present**, **E: Excused** or **L: Late**.
4. Sessions where attendance has already been taken do not have the green button, but instead the description is a link that takes you to the screen to modify the attendance record for that session.

Report of an attendance also can be generated. Export to excel sheet option is also available in moodle.

Attendance for the course :: Computer

Visible groups: All participants | Session Date: 5 April 2014, 01:00, "Regular class session"

#	First name / Surname	P	L	E	EP	A	Remarks
1	Dharmangi Dalva	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
2	moshin hasan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
3	Bhoomika Patel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
4	nimisha ranipa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
5	Bhoomika Sukhadiya	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

OK

Status:
 P - Present
 L - Late
 E - Excused
 EP - Poor Excused
 A - Absent

Fig. 4 Taking Attendance

Visible groups: All participants | 31.03 - 6.04 | All | All taken | Months | Weeks | Day

First name / Surname	5.04 (01:00) Common	P	L	E	EP	A	Grade	%
Dharmangi Dalva	P	1	0	0	0	0	2/2	100.00%
moshin hasan	L	0	1	0	0	0	1/2	50.00%
Bhoomika Patel	E	0	0	1	0	0	1/2	50.00%
nimisha ranipa	EP	0	0	0	1	0	1/2	50.00%
Bhoomika Sukhadiya	A	0	0	0	0	1	0/2	0.00%

Status:
 P - Present
 L - Late
 E - Excused
 EP - Poor Excused
 A - Absent

Fig. 5 Report of an attendance

FEEDBACK MODULE

In most university and colleges, Feedback system is in place to improve the academic process. Hence students give feedback and based on feedback changes will be done to course, teacher and various other aspects like assignment. But most of time we saw that feedback never get any effect on system because it is too boredom to analyse feedback form. But using Moodle we can do it more easily, effectively and without wasting resource. With the Feedback activity you can survey your students with a custom survey. The feedback can be set as anonymous if desired. The results of the survey can be viewed in detail or as a graph giving an overall summary.

Adding a Feedback

From your course homepage, choose Feedback from the **Add an activity** menu in the week or topic you would like to place for survey. The main Feedback page will prompt for the name and description of the Feedback activity. The timing option allows you to limit the availability of the Feedback module.

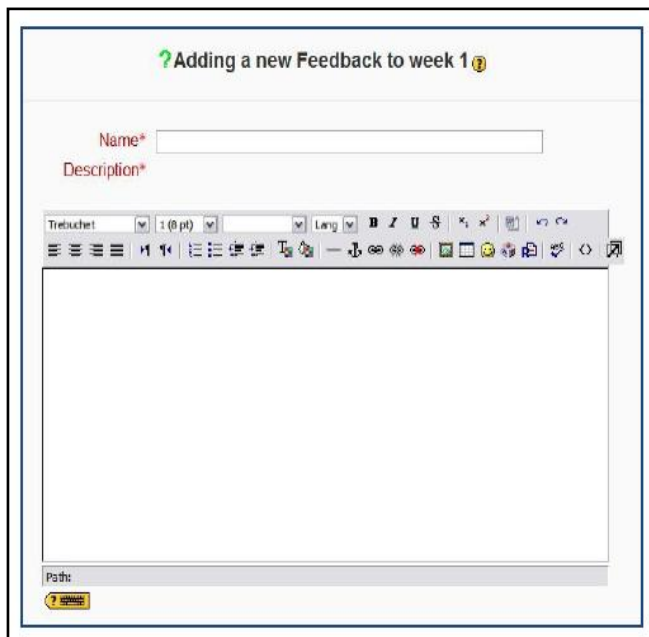


Fig. 6 Add a new Feedback to week

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Adding Questions

Once your general settings have been entered, select the **Edit Questions** tab. Click on the down arrow of the dropdown box and choose the type of question you would like to create.



Fig. 7 Add question to activity.

V. CONCLUSION

Moodle contains almost all blocks that can be used in an academic area. It provides many options for activities when compared to other software. It is open source, no need to invest huge money, plenty of support options available. It's easy to install it and use for academic activities, as it has covered all requirements.