

Building an Online Course Management System for Iraqi Education Colleges

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Abstract

Background/Objectives: E-Learning is an interactive learning system that provides learners with information and communication technologies. It relies on an integrated digital electronic environment that presents courses across electronic networks. **Methods:** The LCMS is an authoring tool which permits teachers to produce and manage their resources. Due to the absence of an active tool to perform e-learning at Iraqi education colleges, this research proposed an important system to do it based on the Internet. The developing of the system is based on the Macromedia Dreamweaver, WAMP applications and tested using the virtual network. **Findings:** With e-learning the learner could acquire his or her own knowledge, thus achieving interactive learning process (learner interaction with teacher, content, colleagues, or educational institution) at any time and from anywhere. The proposed system comprised of three different users: Administrator is responsible for registering other users. A teacher whose role is to create a course, appending its syllabus and timetable to determine its duration, and selecting its members. A student could view course contents and comments on it. **Application:** The proposed system was tested by using the virtual network and results show that adopting it is helpful for promoting traditional (face-to-face) learning but does not consider as an alternative.

Keywords: Content Management System (CMS), E-learning, Learning Content Management System (LCMS), Learning Management System (LMS), Online Learning

1. Introduction

E-learning refers to the combination of learning and information technology, which provides new learning opportunities with less restriction on time and space¹⁻⁴. Every learner could get learning at any time and place. E-learning is delivered through the Internet in a synchronous or asynchronous form. The synchronous form is a situation where lessons are carried out in real-time and led by an instructor, whereas asynchronous form is self-paced in which each individual progresses according to his/here pace⁴⁻⁹.

E-learning is useful to students who encounter difficulties in attending traditional classes. This may be due to distance, personal difficulties, and responsibilities, or

even time constraints. On the other hand, the main drawback of e-learning is the lack of direct interaction between teacher and student and between student and student. Therefore, we recommend using e-learning together with face-to-face education in order to gain the benefits of each one. This situation is called Blended learning^{10,11}.

The Learning Management System (LMS) manages learners, keeping track of their progress and performance across all types of training activities. It also manages and allocates learning resources such as registration, classroom and instructor availability, monitors instructional material fulfillment, and provides the online delivery of learning resources^{12,13}.

The concept of Learning Content Management System (LCMS) is derived from the concept of Course

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Management System (CMS). A course management system is an authoring tool which enables teachers to produce and manage the pedagogical resources¹⁴⁻¹⁶.

The proposed system is comprised of three user accounts: administrator, teacher, and student. The role of the administrator is to register any user of the system, while the role of the teacher is to create a course together with its syllabus and timetable then specifying its members. The student role is to select a certain course, viewing its content, and sending any comments to the author.

In section two, we discuss the structure of the system database tables. Section three overviews the proposed system together with its interfaces. The conclusion is included in section four.

2. The Database Table Structures

In this section, we list the database table structures used in our system.

2.1. Users Table

Table 1 contains some information about any user wants to register in the system.

Table 1. The users table

Field	Type	Attributes
User_id	Int (10)	Primary key
Name	Varchar (100)	
Pic	Varchar (255)	
Birth	Varchar (60)	
Addr	Varchar (100)	
Phone	Varchar (30)	
Email	Varchar (100)	
account	Varchar (40)	
username	Varchar (20)	Unique
password	Varchar (50)	
Active	Tinyint (3)	

2.2. Course Table

Table 2 contains some necessary information about any course to be created.

Table 2. The course table

Field	Type	Attributes
code	Varchar(40)	Primary key

title	Varchar(250)
description	Text
tutor	Varchar(200)
dept	Varchar(40)
material	Varchar(255)
language	Varchar(40)

2.3. Syllable

Table 3 contains syllabus for each course created in the system.

Table 3. The syllable

Field	Type	Attributes
Code	Varchar (40)	Primary key
Syllabus	Text	

2.4. Time Table

Table 4 includes timetable of each course in the system.

Table 4. The timetable

Field	Type	Attributes
Code	Varchar (40)	Primary key
Startdate	Varchar (30)	
Enddate	Varchar (30)	

2.5. Courser User Table

Table 5 contains all relations existent between every course and its members.

Table 5. The course_rel_user table

Field	Type
Code	Varchar (40)
User_id	Int (10)

2.6. Comment table

Table 6 includes all comments made by students on their courses.

Table 6. The comment table

Field	Type
Code	Varchar(40)

User_id	Int(10)
comment	Varchar(255)

3.The Proposed System Overview

This section shows the web pages (interfaces) of our system together with some explanations on them. The web pages developed and tested on a laptop computer which possesses the following attributes, Table 7. The portal homepage of our system is illustrated in Figure 1. As mentioned earlier, the developed system is composed of three main parts that correspond to the different roles of the users who take part in the learning-teaching process.

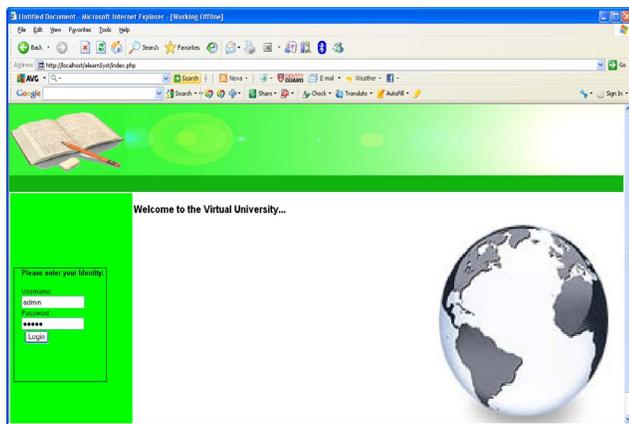


Figure 1. The portal homepage.

1. For administrators, the main functionality of an administrator is to manage information of any new user want to register to the system (Figure 2 and 3).

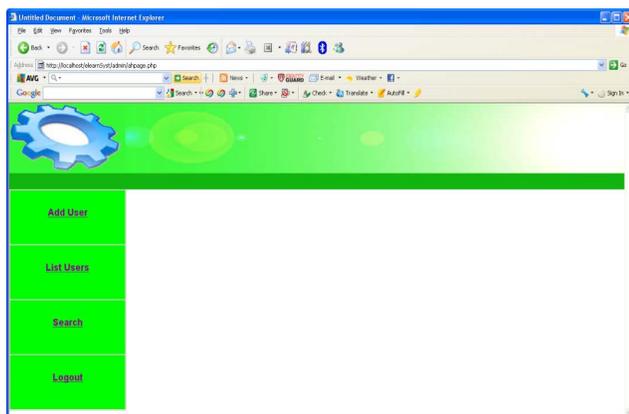


Figure 2. Administrator main page.

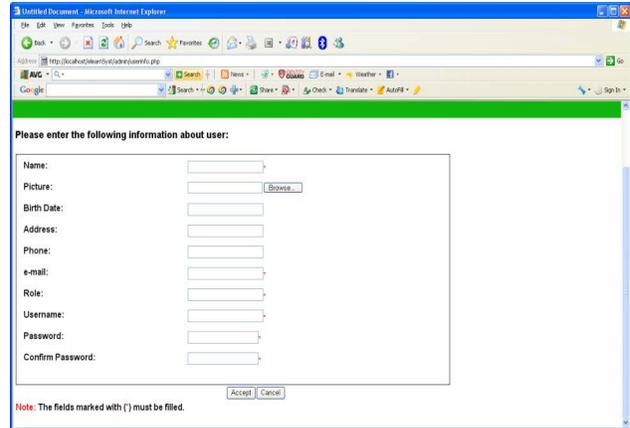


Figure 3. Add user (admin session).

Table 7. The components of our PC

Component	Descriptions
Processor	Intel core™2 Duo 1.66 GHz
RAM	1GB
HDD	120GB
OS	Windows XP SP2
WAMP (Windows-Apache-MySQL-PHP) Server	WAMP5_1.3
Dreamweaver	Macromedia MX 2004
Internet Explorer	I.E. version 6

2.For teachers, the main functionalities are offered:

- Definition and managing of courses together with their related syllabus and time table (Figures 4-8).

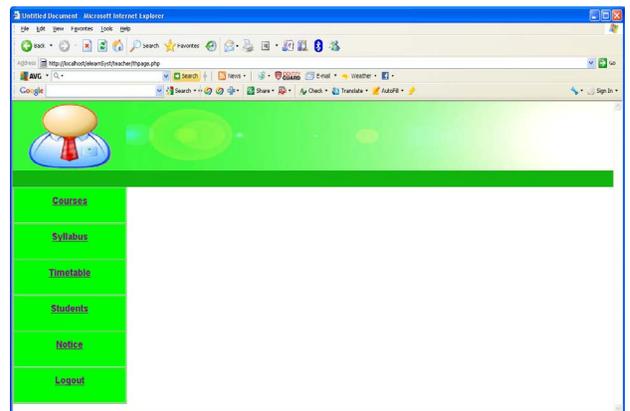


Figure 4. Teacher main page.

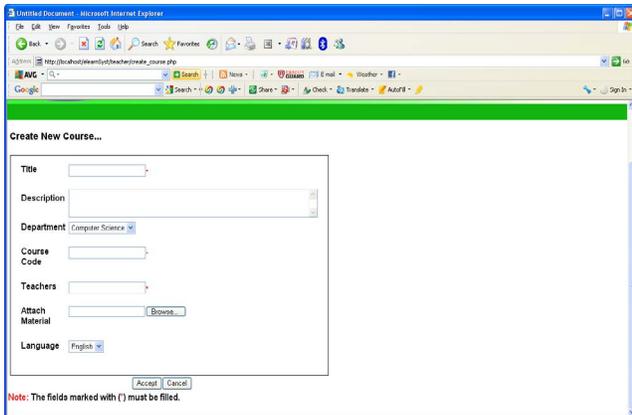


Figure 5. Create course (teacher session).

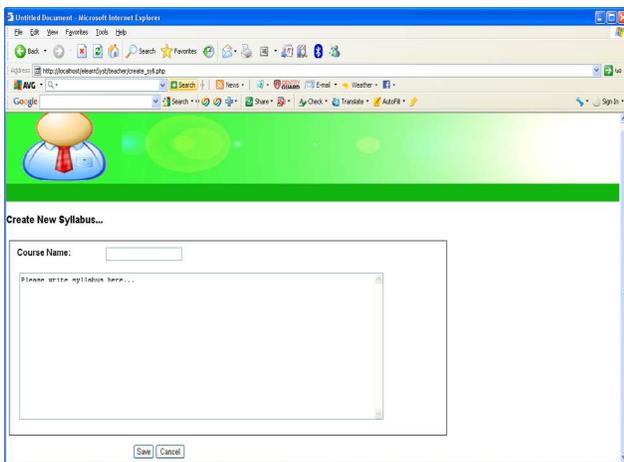


Figure 6. Create syllabus (teacher session).

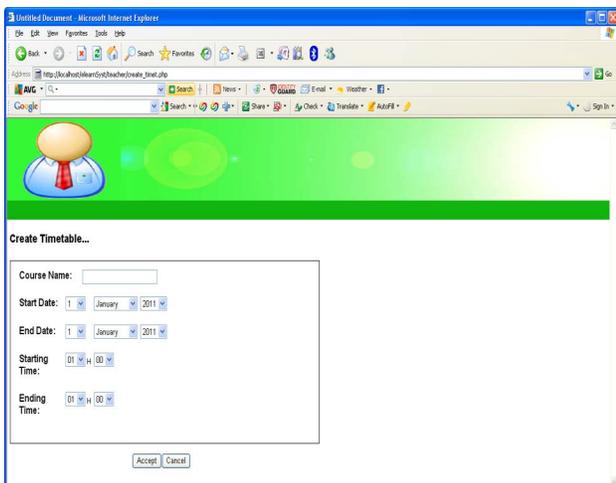


Figure 7. Create timetable (teacher session).

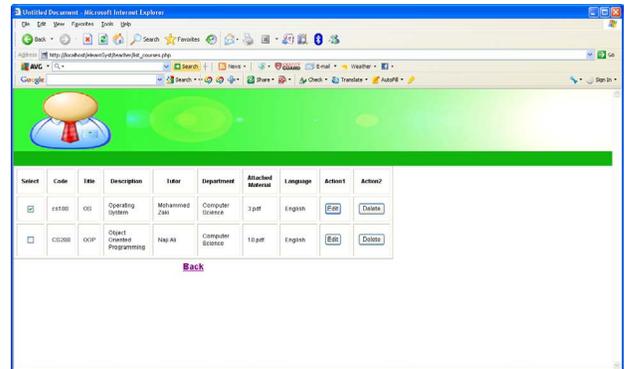


Figure 8. List courses (teacher session).

- Allowing sign up for students to the courses (Figure 9).

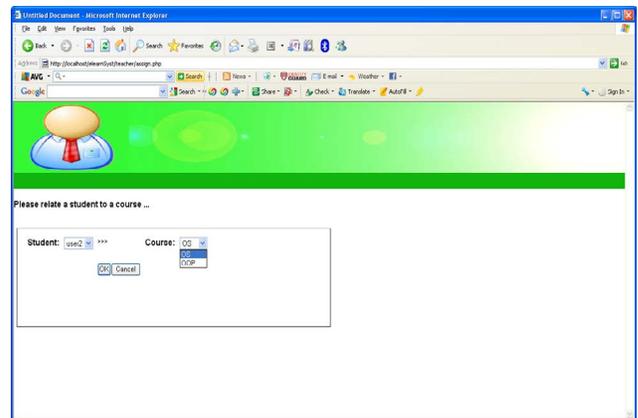


Figure 9. Sign up a student to a course.

- Getting information about students as well as viewing their comments on the courses (Figures 10-12).

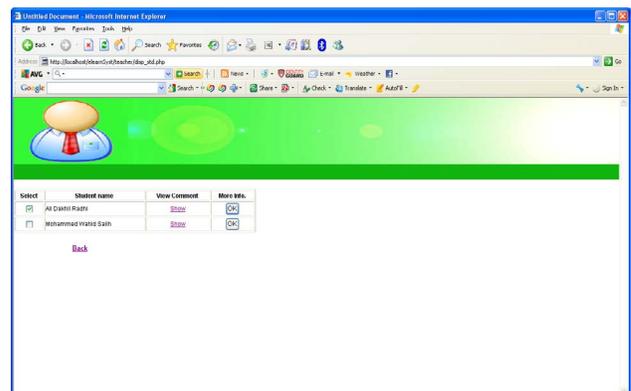


Figure 10. Participant students in OS (example).

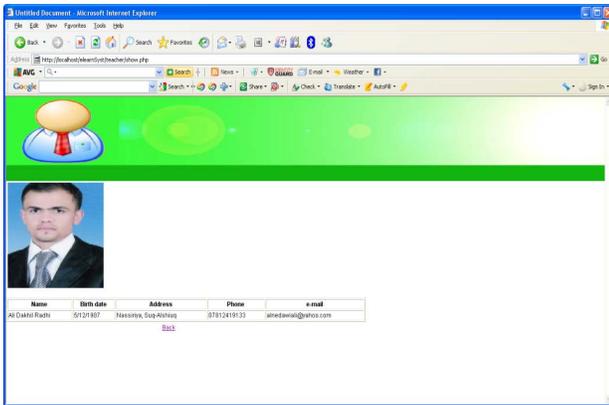


Figure 11. Student's information (example 1).

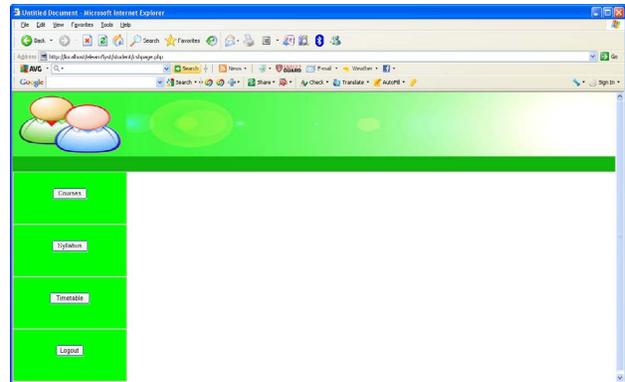


Figure 14. Student main page.

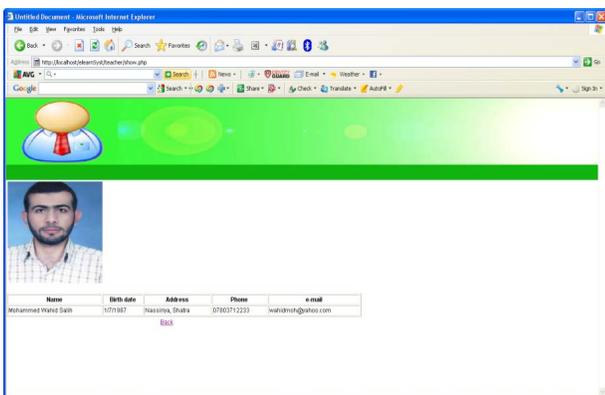


Figure 12. Student's information (example 2).

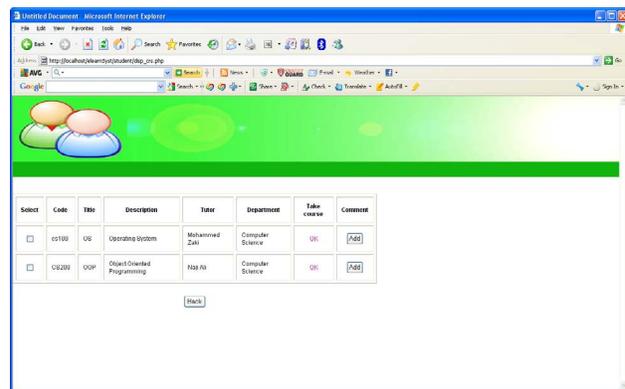


Figure 15. Courses (student session).

- For students, it offers the possibility of selecting the desired department and then showing the contents of a selected course as well as its syllabus and timetable. Moreover, it allows the student to make comments on a course and then sending them to the required teacher (Figures 13-15).

4. Conclusions and Future Work

In this paper, we have described an online course management system that we have developed for the definition courses, their syllabus, and their timetable as well as uploading any learning material to the course from the side of teacher. At the side of student, he/she could study a course, if it is allowed by author, after selecting appropriate department (Computer Science, Mathematics, Biology, Chemistry, and Physics) then he/she could send a suitable comments on that course. The system had been tested using virtual network. We recommend applying this software at the Iraqi education colleges to help and enhance learning process for the students there. The proposed system could be extended to include other departments and colleges. In addition, an assessment tool could be attached to the system in order to track the performance of students. Moreover, other tools could be attached to this work such as videoconference and chat.

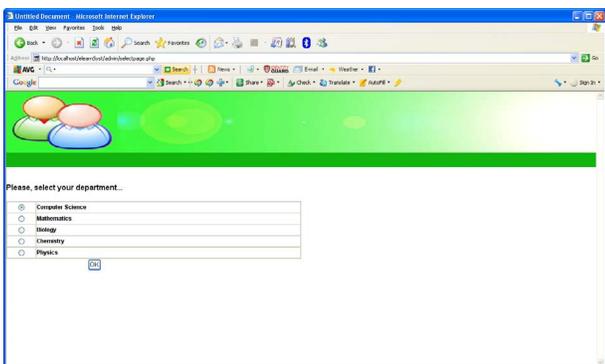


Figure 13. Select department.

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