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HtmLearn, an E-learning Platform for Private Learning

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Abstract. A new learning management system, namely HtmLearn has been introduced in this paper. The software platform has been designed to cover the requirements of individual learning method. Students can be registered at any time and different courses can be assigned to them. After studying lessons, each student submits his assignments which are put in their tutor's assignment queue. Communication and feedback features help the supervision of the learning process. Calculation of scores and issuing an online certificate are among the other features of the platform.

Keywords: Learning Management System (LMS), Open-Source, correspondence learning

1. Introduction

Several Learning Management Systems (LMS) have been offered to the eLearning market. A few of the more famous ones are Blackboard [1], Moodle[2] and Sakai[3]. The existing LMS software are offered either as a proprietary or open source form. The open source software systems are free in most of the cases while propitiatory solutions are not cheap and are provided with support, training and similar services. Smaller companies and organizations prefer open source and free software because of the lower initial costs. Most of the available solutions are built around the idea of providing an alternative to traditional classes. In such environments, teacher interacts with the class using the software platform and facilities for collaboration of students help the teacher in this process. Most of the time, the teacher would announce a course schedule with which students should proceed with the course, submit their assignments and sit for tests.

In this paper we introduce HtmLearn[4] which is another open source and free LMS software. The software has been developed using LAMP open source and free stack which includes Linux, Apache, MySQL and PHP. The LMS software itself is also provided for free. HtmLearn LMS system has been designed with tutor to student private teaching in mind. In this system, students do not necessarily start a specific course at the same time. Each student might register and start at any time. Each student will therefore have his personal course schedule with which the tutor will supervise the learning process. Student proceeds with the course content, submits assignments and performs tests. The tutor then corrects the assignments, gives comments and advises and finally confirms the completion of the course and graduation of the student. In other word, the LMS being presented is a student centric design in contrast to class and course centric designs. Similar educational procedure has been used by traditional correspondence learning companies in past. However, electronics media and communication methods replace the conventional books and written assignments in the mentioned methods. Online private learning companies and organizations may benefit from software created with this approach.

Gathering the requirements and design of the environment have been the initial steps of the development of HtmLearn. Requirements have been gathered based on the needs of an existing online learning website and by investigating the distance education needs of several other organizations and websites. After prioritizing the features, the most important ones have been selected for the first version of the software. The organization of the remaining of the paper is as follows: Section 2 discusses design and educational goals of

HtmLearn learning system. Section 3 presents the available features of the system and discusses a sample educational scenario and finally section 4 concludes the paper.

2. Design and Educational Goals

As described earlier the main idea behind the HtmLearn eLearning software is to support private distance education through the internet. Several companies and organizations provide tutor-to-student courses in which every student has his personal tutor and learning schedule. As soon as a student registers for a course, a tutor is assigned to him who will supervise the learning process. Access to the course content is provided gradually (based on the advancement of the student) or as a whole. In a fee based course in which the fee is paid in instalments the learning provider should be able to limit access to the learning objects and provide it gradually. Student learns the course content and submits the assignments and possibly performs lesson tests. The tutor will see the assignments and tests and assigns a score to each of them. In case answers to tests and assignments can be automatically corrected (such as multiple choice, fill in the blanks and similar types of questions), the software will immediately assign a grade to the student for that lesson. However if the assignments and tests contain free text answers, intervention of the tutor will be necessary. The tutor will see the answers, give advice and comments and return the assignment to the student for further work if necessary and finally assign a grade to that lesson. After finishing all the lessons, the software can calculate the final grade of the student automatically (or following confirmation of the tutor). An online certificate of completion is provided immediately. Student might put web page links to his certificate page and the page can be viewed by public with or without a pass phrase.

3. Software Platform

The software has three separate panels at the time being considered for system managers, tutors (and course authors) and students. In the following sections responsibilities and features related to each of these positions will be discussed.

3.1. Management Features

System managers are responsible for creating and maintaining the users which include tutors and students. Managers are also responsible for creating courses and assigning them to tutors. However, managers do not create course content. Tutors may have access to create and modify course contents, supervise students or both of these functions. Upon creation of a student user, the manager can register the student to any of the available courses. A tutor is also assigned to each student which supervises the learning process.

3.2. Design and Preparation of Course Content

Course content includes rich text (in HTML form) and attached files (PDF or any other type). Tutors currently need to author the course from inside the provided web based tutors panel. Each course includes a number of lessons. Each lesson as mentioned has a main content section in the form of HTML text. Colours, pictures, tables and other major HTML elements are supported by the text editor of the software. It is possible to attach more content in the form of PDF e-books and text to each of the lessons. Tests and assignments are the elements of lessons being used to evaluate learning results. More details about the testing process and features are given in next section. Figures 1 and 2 show snapshots of "course information page" and the page used for "creating the content of individual lessons" respectively.

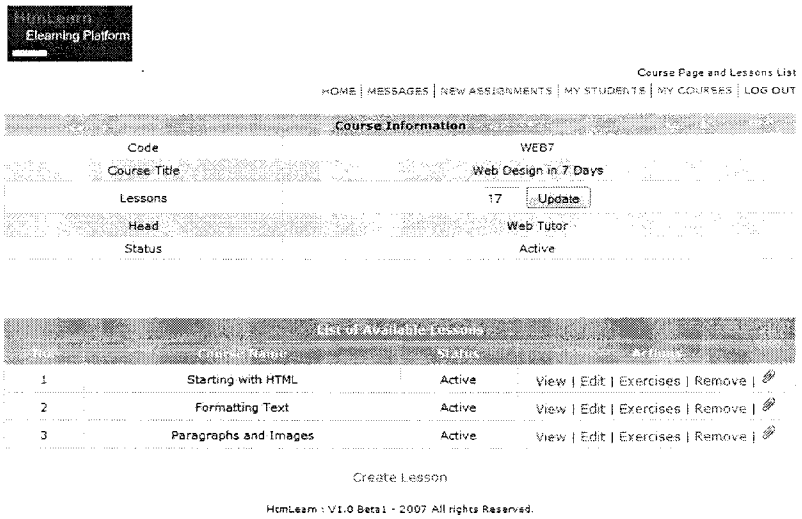

Fig. 1: Course Information Page

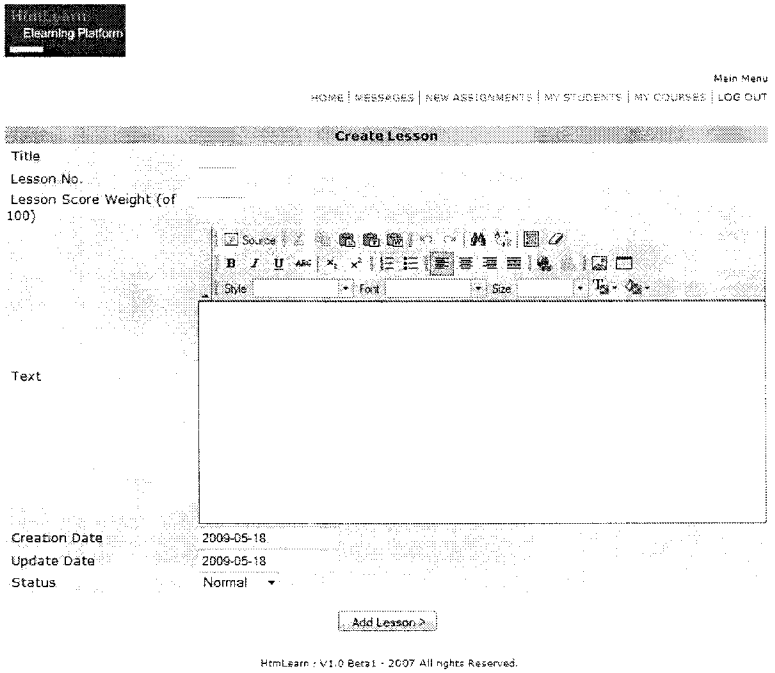

Fig. 2: Creating a Lesson and Its Content

3.3. Teaching and Testing Process

At the time of registration, a student has access to limited number of lessons in each course (depending on the system settings). Tutors are able to give access to more lessons for individual students. Each lesson can contain any number of tests and assignments. The evaluation of the student work is performed by these means. After studying the course content, student shall complete tests and assignments of the lesson. Student has the opportunity to add to his responses or to modify the work before final submission. After final submission the responses cannot be changed until tutor feedback or score is received. If the assignment or test result is not satisfactory the tutor may return the assignment or test for further work to the student. Score weight for each test and separate lessons are determined at the course design time. Upon correcting each test item (or assignment) tutor assigns a score between 1 and 100 to each items. Based on the pre-determined weights, the total score of the course is calculated immediately after course completion. If the tutor confirms the completion of the course, an online certificate is issued for the student. Figure 3 presents a snapshot of the main page of the student panel.

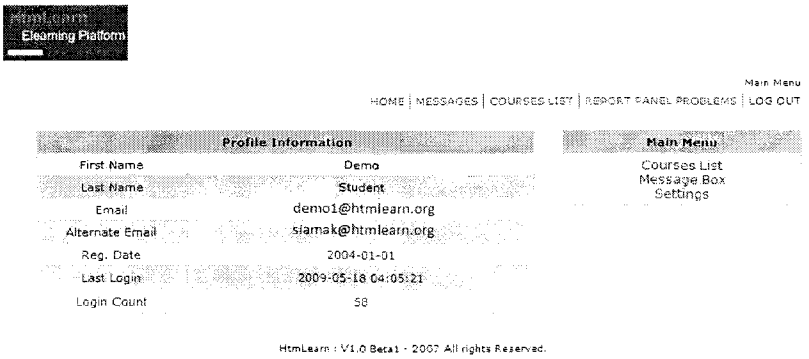

Fig. 3: Main Page of Student Panel

3.4. Reports

Managers and tutors have access to different reporting tools which help them in their duties. Tutors can see a list of newly submitted assignments or tests (assignment and test queue). They can also query the status and progress of individual students (including number of visits and date of the last visit), have a list of active students in each course and several other useful information. Managers can see general information about users (tutors and students) including number of visits and last visit. Figure 4 is a snapshot of the student progress page in tutors panel.

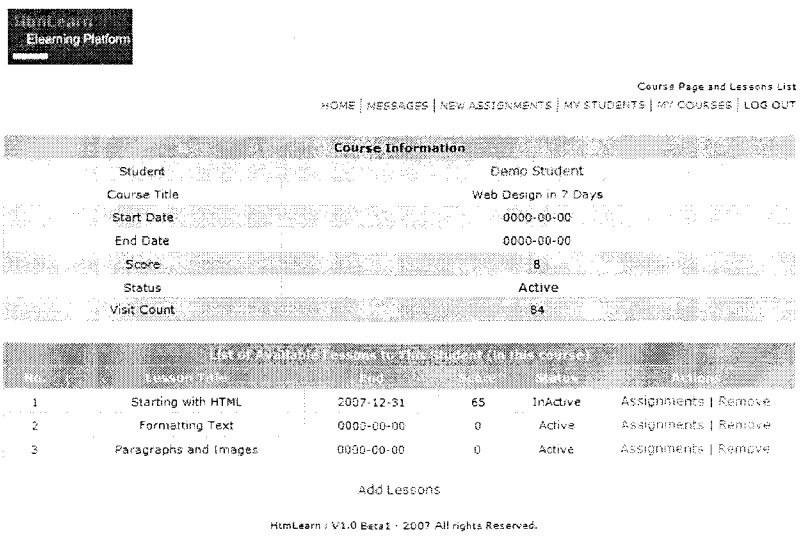

Fig. 4: Summary of Student Progress

3.5. Messaging and Communications

The software environment provides an internal mail function. This function includes most of the required features like composing messages, replying and forwarding the messages and contacting the manager of the system. A discussion board for each of the courses has been developed and will be added to the system in next version.

4. Conclusion

We have designed and developed a new open source e-learning system which supports education process and relations of individual students and teachers. Each student can register at any time and have a separate learning schedule. Upon finishing a course, the total score is calculated and an online certificate is issued for each student. Future versions of the software shall cover more useful features including the support of

SCROM[5] standards, course content backup for teachers and tutors, billing and better course authoring facilities.

5. References

[1] "Blackboard Home," May 2009; http://www.blackboard.com .

[2] "Moodle: open-source community-based tools for learning," May 2009; http://Moodle.org .

[3] "Sakai Project: Home," May 2009; http://sakaiproject.org .

[4] "HtmLearn Open Source LMS," May 2009; http://htmlearn.org .

[5] "Sharable Content Object Reference Model (SCORM) Home," May 2009; http://www.adlnet.gov/Technologies/scorm/.