

Intranet based Virtual Classroom using Content Management System

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Abstract— In colleges, many times the faculty has to display student's attendance, lecture notes, and assignments. A faculty typically keeps records of data about each and every student. Even for conducting a normal test or an aptitude test usually paper based test is taken into consideration. The sharing of knowledge is limited to books and not widespread up to the current existing technology. The goal of this project is to create a web based portal that will eventually depict a Physical classroom on a Virtual portal. This portal will be able to give a detailed report of attendance, a grade wise download section for the students to have their own copy of notes, pdf's and presentations. In addition to these features we are also going to provide a separate section for carrying out tests. Those tests would be dynamic and objective based test for the students. It would help to decrease the time taken by human evaluation and fasten up the process. A full detailed report of students would be generated. Finally there will also be a feedback section where the students would grade the lecture or the professor in the portal itself. For achieving this task we are going to make use of a "Content Management System". The CMS which we are going to use is Drupal CMS. And this application would be deployed as on "Windows" framework and also an application for "Android" based devices.

Key words: Virtual Classroom, E-learning, CMS

I. INTRODUCTION

A virtual classroom is an online learning environment. The environment can be web-based and accessed through a portal or software-based and require a downloadable executable file. Just like in a real-world classroom, a student in a virtual classroom participates in synchronous instruction, which means that the teacher and students are logged into the virtual learning environment at the same time.

Many schools and businesses have rolled out virtual classrooms to provide synchronous distance education. Virtual classroom software applications often employ multiple synchronous technologies, such as web conferencing, video conferencing, live streaming, and web-based VoIP to provide remote students with the ability to collaborate in real time. To enhance the educational process, applications may also provide students with asynchronous communication tools, such as message boards and chat capabilities. Virtual Classroom is a concept which basically aims at mapping a physical classroom in a virtual world. It is a way of reducing physical efforts put in by the professor and increasing the efficiency of the lecture.

II. PROJECT PROBLEM AND DEFINITION

To develop a Content Management System for Virtual Classroom using Drupal and hosting the portal on intranet for limited and offline use. The concept we are going to use are:

- PHP
- MySQL
- JavaScript
- Android
- Java FX

A. Scope of Project:

The scope of our project is to develop a web application which can be hosted on Intranet and service can be granted to individuals having access to that particular network and provide a user friendly interface for android as well as windows based operating system.

B. Aim and Objective:

Following are the objectives of our project:

- To reduce physical efforts taken by professor.
- To reduce stress on paper.
- To make learning more convenient for the students.
- Provide direct link to reference ebooks.
- Provide a wider scope of learning

III. EXISTING SYSTEM

A. Physical Classroom:

Earlier lectures were conducted in classroom wherein the professors had to put physical as well as mental efforts in deliver the lectures. It is less dynamic way of teaching as many students are shy, and less prone to express their doubts. Knowledge sharing is limited to books in physical lecture, whereas in online it is open to internet.

B. E-learning:

E-learning (or eLearning) is the use of electronic media, educational technology and information and communication technologies (ICT) in education. E-learning includes numerous types of media that deliver text, audio, images, animation, and streaming video, and includes technology applications and processes such as audio or video tape, satellite TV, CD-ROM, and computer-based learning, as well as local intranet/extranet and web-based learning. Information and communication systems, whether free-standing or based on either local networks or the Internet in networked learning, underlie many e-learning processes.

The existing e-learning systems are:

1) Codecademy.com:

Codecademy is an online interactive platform that offers free coding classes in six different programming languages like Python, PHP, Query, JavaScript, and Ruby, as well as markup languages including HTML and CSS. As of January 2014, the site had over 24 million users who had completed over 100 million exercises. The site has received positive reviews from many blogs and websites, including the New York Times and TechCrunch

2) Udemy.com:

Udemy.com is a platform or marketplace for online learning. Unlike academic MOOC programs driven by traditional collegiate coursework, Udemy provides a platform for experts of any kind to create courses which can be offered to the public, either at no charge or for a tuition fee. Udemy provides tools which enable users to create a course promote it and earn money from student tuition charges. No Udemy courses are currently credentialed for college credit; Its students take courses largely as a means of improving job-related skills. Some courses generate credit toward technical certification. Udemy has made a special effort to attract corporate trainers seeking to create coursework for employees of their company.

3) Coursera.org:

Coursera is a for-profit educational technology company founded by computer science professors Andrew Ng and Daphne Koller from Stanford University that offers massive open online courses (MOOCs). Coursera works with universities to make some of their courses available online, and offers courses in physics, engineering, humanities, medicine, biology, social sciences, mathematics, business, computer science, and other subjects. Coursera has an official mobile app for iOS and Android. As of September 2014, Coursera has 9.2 million users in 750 courses from 111 institutions.

IV. PROPOSED SYSTEM

Our virtual classroom can be accessed with the help of either an Android smartphone or a Windows based PC. It uses the intranet for building up a network and accessing the portal through IP address. Then users (Students and Teachers) can log into the portal and gain access to the content.

A. Advantages of Proposed system:

- To reduce physical efforts taken by professor.
- To reduce stress on paper.
- To make learning more convenient for the students.
- Provide direct link to reference eBooks.

V. CONTENT MANAGEMENT SYSTEM (CMS)

A content management system (CMS) is a computer application that allows publishing, editing and modifying content, organizing, deleting as well as maintenance from a central interface. Such systems of content management provide procedures to manage workflow in a collaborative environment.

The function and use of content management systems is to store and organize files, and provide version-controlled access to their data. Distinguishing between the basic concepts of user and content. The content management system (CMS) has two elements:

Content Management Application (CMA) is the front-end user interface that allows a user, even with limited expertise, to add, modify and remove content from a Web site without the intervention of a Webmaster.

Content Delivery Application (CDA) compiles that information and updates the Web site.. A content management system (Web CMS) is a bundled or stand-alone application to create, deploy, manage and store content on

Web pages. A CMS system may also provide tools for one-to-one marketing. One-to-one marketing is the ability of a Web site to tailor its content and advertising to a user's specific characteristics using information provided by the user or gathered by the site (for example, a particular user's page sequence pattern). For example, if you visit a search engine and search for "digital camera," the advertising banners will advertise businesses that sell digital cameras instead of businesses that sell garden products.

The Web-based publishing feature allows individuals to use a template or a set of templates approved by the organization, as well as wizards and other tools to create or modify Web content. The format management feature allows documents including legacy electronic documents and scanned paper documents to be formatted into HTML or Portable Document Format (PDF) for the Web site. The revision control feature allows content to be updated to a newer version or restored to a previous version. Revision control also tracks any changes made to files by individuals. An additional feature is indexing, search, and retrieval. A CMS system indexes all data within an organization. Individuals can then search for data using keywords, which the CMS system retrieves.

VI. VIRTUAL CLASSROOM

A virtual classroom is an online learning environment. The environment can be web-based and accessed through a portal or software-based and require a downloadable executable file. Virtual Classroom platform lets you engage with and teach your students face-to-face, just as you would in a physical classroom.

A. Features of Virtual Classroom:

- Material sharing
- Docs
- Pdfs
- eBooks
- Spread Sheets
- Knowledge expansion
- Online PowerPoint Presentation
- Live chat
- Examination portal
- Feedback System

VII. DRUPAL

Drupal is content management system software that is beloved by a large and thriving developer community. The ever-evolving magnum opus of developer Dries Buytaert, the system, its modules, and its users and developers value the flexibility, simplicity and extensibility in the CMS coding.

The theory here seems to be making the core files light on the features – a veritable blank canvas on which to create. This philosophy obviously isn't for everyone. Drupal's installation files are small, but that's because you will need to install and tweak numerous plugins before you can design the website of your dreams. Drupal contains a basic framework and interface with which you can become familiar and comfortable. The features it includes allow you to create a bare-bones website with content, user groups and more.

Drupal is a free software package that allows you to easily organize, manage and publish your content, with an endless variety of customization. Drupal is Open Source.

Drupal content management framework is written in PHP and distributed under the GNU General Public License. The standard release of Drupal, known as Drupal core, contains basic features common to content management systems.

The core Drupal distribution provides a number of features, including:

- Access statistics and logging
- Advanced search
- Blogs, books, comments, forums, and polls
- Caching and feature throttling for improved performance
- Multi-level menu system
- Multi-site support
- Multi-user content creation and editing

VIII. CONCLUSION

By developing this portal for a classroom it would be much easier to spread knowledge with less physical efforts and more on intellectual knowledge. And also online examination would reduce paper waste and faster evaluation time.

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