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Teacher-Student Portal for Pangasinan State University – A Proposed System Design

Cristeta G. Tolentino
crg.tolentino@gmail.com
Pangasinan State University

Abstract – A portal is a network service that brings together content from diverse distributed resources using technologies such as cross-searching, harvesting, and alerting, and collates this into an amalgamated form for presentation to the user. This presentation is usually via a Web browser, though other means are also possible. For users, a portal is a, possibly personalized, single point of access where searching can be carried out across one or more than one resource and the amalgamated results viewed. Information may also be presented via other means, for example, alerting services and conference listings or links to e-prints and learning materials. The design of a Web-based Teacher-Student Portal for Pangasinan State University will certainly be advantageous to both teachers and students for it will enable them to expand the teaching and learning process.

Keywords – Framework, web portal,

INTRODUCTION

The significance and role of technology in an organization and in society is widely appreciated and considered across the world. People, organizations and governments enthusiastically embrace all that technology has to offer, whereas others are more cautious or even positively resistant. With the benefit of highly significant constellations of technologies, people often imply today that these technologies are shaping and changing our society and our lives.

Computer-based information systems must be interpreted broadly. Computers themselves are but one part of a constellation of technologies that we will consider, and to which we must certainly add communications and network technologies. These technologies are important and interesting to study, but we should appreciate at the outset that this unit is not just (or even mainly) about these technologies in an isolated sense, but about what we do with them, why we become involved with them, how we proceed, and all the management problems and issues this raises. (Conford, 2001)

With the rapid phase of the changing generation, the youth is now more demanding in acquiring technologies that will suit to their needs, especially in when it is applied to their studies. Certainly, the access in Internet or in the World Wide Web is easy and there are many benefits can be gained.

The use of this accessibility is applied mostly on the professionals such as medical practitioners, business tycoons, and even government officials. The purpose of their usage the Internet is different in terms of their needs and various marketers also applied their expertise on it. Apparently, the growing numbers of users are members of different social networking sites and most of them are students.

The impact of the Internet on education is an important issue that has caught both educators' and practitioners' attention in recent years. Three new modes of education delivery make online education distinctive. They are (1) adjunct mode: using networking to enhance traditional face-to-face education or distance education; (2) mixed mode: employing networking as a significant portion of a traditional classroom or distance course; (3) pure online mode: relying on networking as the primary teaching medium for the entire course or program. Among these three education delivery modes, the pure online mode has caught the most attention. Several successful cases or critical factors of pure online education have been reported. (Yang, 2003)

The Pangasinan State University provides its students with exposure to technology with which new gadgets, software development tools and web-based technology are introduced as support in their schoolwork. With exposure to such technology, students are capable to explore new trends and try possibilities that help them expand their knowledge, share information and be up-to-date with the latest trends.

The faculty members of PSU enthusiastically incorporate technology to their teaching methodologies in order to provide exposure to students and let them experience and practice the uses of these technologies in reality. Because faculty members are expected to know an amazing amount of information or have the skills and knowledge to obtain current information and have the ability to impart these skills and knowledge to students, the Internet is also a great advantage to them.

Likewise, Internet is advantageous to students because of their need to research and study. It is most often their source of information whenever their teachers require them to research about anything.

As the university's primary objective to provide quality of IT education to its students, it explores ways to deliver quality education to its clients. It has installed high-end computers to its laboratories for students to enhance their skills in applications development, has installed overhead projectors to these laboratories as support to faculty members' teaching methodologies and is continuously enhancing its curriculums to enable students to adapt with the evolving technology and equip them with the skills they need.

With all these to assist in the teaching-learning process in the university, the researcher realizes the significance of designing a useful tool that will enable teachers and students to enjoy a collaborative teaching-learning experience. The design of a Web-based Teacher-Student Portal for Pangasinan State University that creates a common gateway for data that students and teachers throughout the university need to effectively share information and educational resources to expand a collaborative teaching learning process.

METHODOLOGY

The researcher intends to utilize the RAD or Rapid Application Development as the appropriate software development methodology for the design and potential development of the Web-based Teacher-Student Portal for PSU. RAD enables the researcher to build a software application faster, better, and cheaper.

Rapid application development (RAD) is a software development methodology that uses minimal planning in favor of rapid prototyping. The "planning" of software developed using RAD is interleaved with writing the software itself. The lack of extensive pre-planning generally allows software to be written much faster, and makes it easier to change requirements.

Martin (1991), in his book first coining the term, wrote, "Rapid Application Development (RAD) is a development lifecycle designed to give much faster development and higher-quality results than those achieved with the traditional lifecycle. It is designed to take the maximum advantage of powerful development software that has evolved recently."

Design models such as block diagrams, data flow diagrams were used to illustrate the different activities conducted in the design process and to define that relationship between the major structural elements of the portal. The system was decomposed into interacting components and is expressed as a block diagram defining an overview of the system structure – features of the components and how these components communicate with each other to share data.

The researcher used the general model of design process as shown in Figure 1 as basis for identifying the activities needed to be conducted to be able to come up with a reliable design.
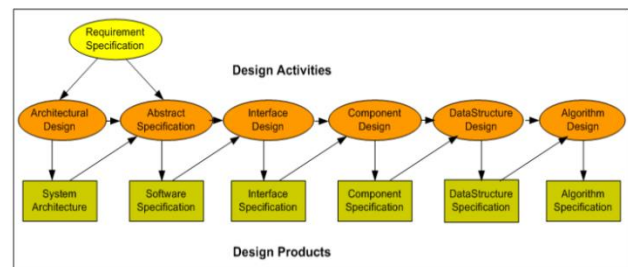

Figure 1 General model of design process

RESULTS AND DISCUSSION

A.   *System Architecture*

The portal will cater both faculty members and students of the university. The web portal will have two user level accounts: the faculty account and the student account. Each account will be capable of accessing data from the database whenever they successfully login to the portal. Interaction between the two users through the portal is shown in Figure 2.
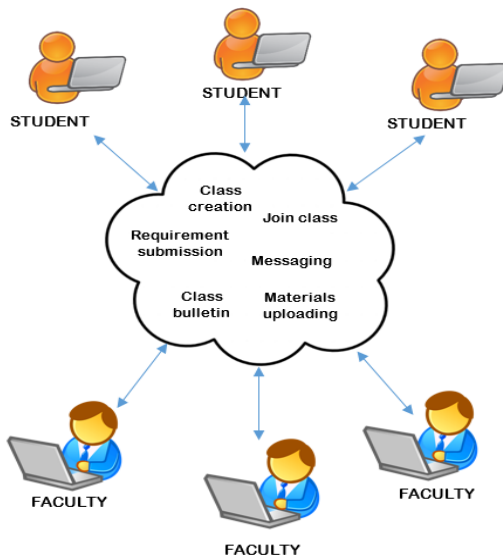
Figure 2 Faculty and students interaction

Faculty members and students are required to create and login their own user accounts for them to be able to perform their respective functions and access data to and from the database as shown in Figure 3.
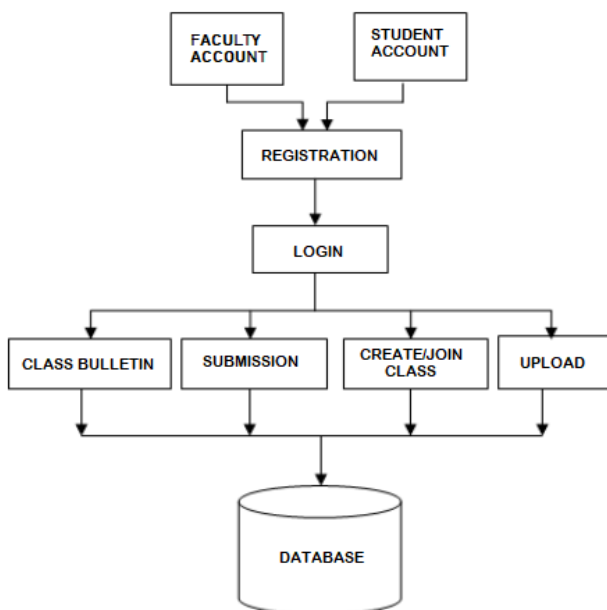

Figure 3 User process

The portal will allow students to join classes, view class materials, submit class requirements and send messages to their instructors. These processes are shown in the student level data flow diagram in Figure 4.
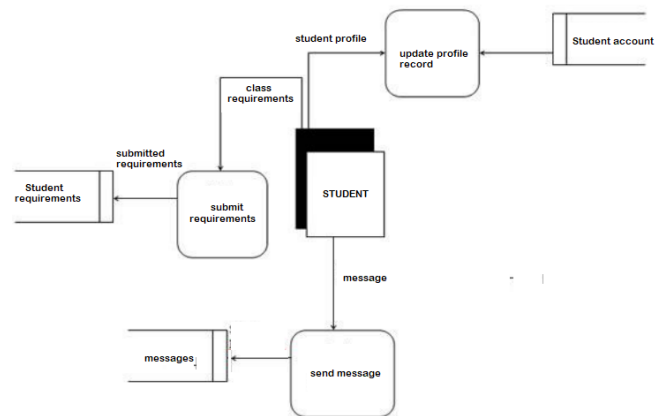

Figure 4 Student Level Data Flow Diagram

The portal will allow faculty members to create classes, upload class materials such as assignments, lectures and requirements and post announcements through an electronic class bulletin board system. This is shown in the faculty level data flow diagram in Figure 5.
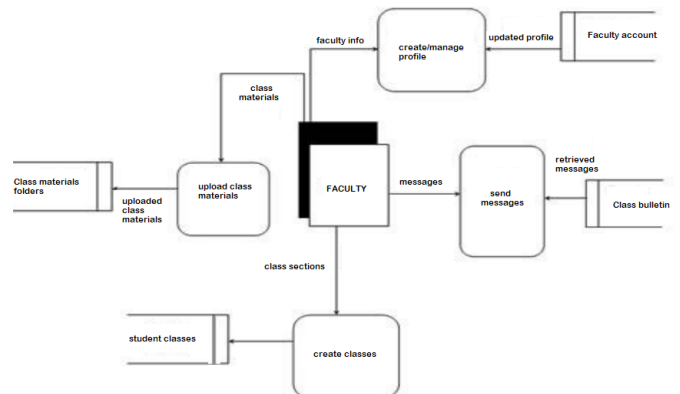

Figure 5 Faculty level data flow diagram

B.   Features of the Web Portal

The Class Creation Module that allows teachers to create and populate classes of students and remove or delete students from class. Students added in classes will be able to view the class electronic bulletin, view uploaded materials by their instructors, submit individual requirements and send messages to their instructors.

The User Accounts Module that allows the students and teachers to manage their profile (modify, create, delete) such as add details to their profile.

The Class Bulletin Board Module that provides users (teacher and students) the capability to post announcements, broadcast messages and notices. Simple text announcements consist of a title and a brief description.

Features that allow students to join a class to enable them download lectures, assignments and requirements, view announcements posted by their teachers, and post their enquiries are as follows:

The Join Class Module allows students to join classes, which will enable him/her of viewing lectures, requirements and announcements. Once added by their instructor to his/her class, students may be able to join interactive class discussion.

The Document Management Module provides users with a browseable hierarchical type technique to present documents on the portal. This feature shown in Figure 6 makes it easier for students to view uploaded documents in chronological order.

The portal supports documents of these types: word processing, presentation documents, spreadsheets, PDF, videos and images.

Allot restricted time for students to download lectures, assignments and requirements. This allows teachers to ensure security of their lectures and assignments.
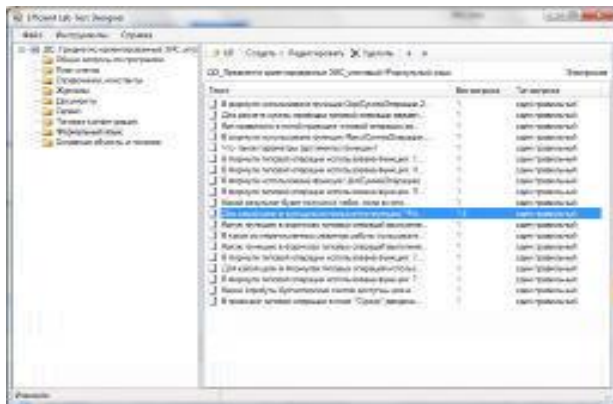

Figure 6 Document Management Module

Finally, the feature that allows instructors and students to exchange exclusive conversation in text format through a messaging system.

The **Messaging System Module** allows exclusive conversations in text format between students and teachers. This feature allows students to ask questions and exchange conversations with their teachers and fellow students for a collaborative group discussions pertaining their topics and concerns.

CONCLUSION

This paper presents an attainable design for a web portal for faculty and students of Pangasinan State University that will allow faculty members to create a class of students, upload lectures and assignments and requirements and post announcements through an electronic class bulletin board system, allows students to join a class to enable them download lectures, assignments and requirements, view announcements posted by their teachers, and post their enquiries, and allows instructors and students to exchange exclusive conversation in text format through a messaging system.

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Name: CRISTETA G. TOLENTINO
Contact No: +639425595967
Email Address: crg.tolentino@gmail.com