AN INTRANET PORTAL FOR A LEARNING INSTITUTION

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Abstract

With the rise of Internet and telecommunication services in recent times, the communication needs of human life have been enhanced progressively. From the earliest times, when communication between people included word of mouth, society evolved from various stages of disseminating information. The problem of insufficient communication and interaction is common in public schools among students and lecturers because of dearth of communication technology. In some schools, communication between faculty members and students are often low. Some students and teachers show resistance to using electronic method of learning and teaching, as a result of several factors including illiteracy. The objective of this study is to develop an intranet portal that handles communication and interaction for a learning institution and also help students improve academically from their comfort zone and outside the lecture hall. The tools engaged in developing this application include ASP.NET and C# as the server side programming, and MySQL as the database. With this application, lecturers and students are able to interact better. The system serves as a medium on which information is communicated and shared. The benefit of using the developed system for effective communication is that it keeps members of the institution regularly updated with current information on happenings and events in the institution. The application will also facilitate collaboration among learners.

Keywords: Communication, Intranet, Learning, Virtual classroom and Portal.

1   INTRODUCTION

The intranet is a system that connects all the computers within an institution. It is a private network that makes use of the Internet protocol to share any part of an organization's data. In the last few decades, the web has changed from a mere hypertext document repository to a powerful communication media. This move has made Web applications suitable for the support of educational activities, which often include collaboration between two or more people [1].

With the rise of Internet and telecommunication services in recent times, the communication need of human life has increased. From the earliest times, when communication between parties included, word of mouth, society has evolved from various stages of disseminating information. Within a learning institution, insufficient communication and interaction between students and lecturers can lead to a disaster, many of the students and faculty members are often ignorant about new developments in the institution, communication between faculty members and students is often low and difficult, most students have little or no interest in going to the library and borrowing books and are mostly attracted to using their computer system.

The meaning of web portal [2] shows a virtual system and a pathway to information storage and processing. The definition suggests that, "when a virtual portal system is built for a university as an example, there is need to identify the target portal users; and decide how many portals are required; also the need to have a clear vision of what the portal will be used for and what levels of security are needed.

As the world is fast becoming a global village, the emergence of Internet has brought about the term e-learning, which is the teaching and learning activities over the internet just like we have electronic services such as e-commerce, e-banking, e-government and e-politics [4]. Electronic learning means the use of information and communications technology (ICT) to support learning in higher education. Although this covers a wide range of systems, from students using e-mail and accessing course work online to programmes offered entirely online [3].

E-learning systems based on social approach provides learning experiences using personal tools and social networks. Adopting a social network approach provides learners with valuable resources for using the web as a tool in order to develop understanding in solving problems – irrespective of location, place or time [4]. The intranet facilities adopted in most schools seem not be well maintained because of the huge amount involved in maintenance in the absence of adequate power supply. The

educational domain which is the basis for the development of future professionals, leaders, researchers, etc. has experience a great turn around which calls for exchange of ideas as well as information about the recent development in the world in real time [5]. Content Management Systems (CMSs) are also called Learning Management Systems (LMS) or a Virtual Learning Environment (VLE). Example of LMS includes Moodle (Modular Object-Oriented Dynamic Learning Environment), which is basically an Open Source e-learning platform that helps educators to create quality courses online [6].

The aim of this paper is to develop an intranet-based portal that handles communications and interaction for a learning institution and also help students to advance their academic knowledge level. The rest of this paper is presented as follows: Section 2 describes the literature review. Section 3 depicts the system design and modelling. Section 4 describes the system implementation and Section 5 concludes the paper.

2 LITERATURE REVIEW

Several studies exist that relates to the work described in this paper. The features found in [7] shows some analyses in various types of portals and groups' portals in four different categories (including search engine-based, Internet service provider-based specialist, vertical, and academic). No single portal is likely to serve all the required needs. Depending on the job at hand, different portals will need different requirements that are suitable for the need at that moment.

A survey to appraise institutional take up of e-learning was carried out in [1]. The survey was an attempt to provide an up-to-date evidence-based account of how e-learning has been taken up at European higher education institutions. The results of the survey shows that practically all higher education institutions of the sample have started to embrace e-learning. Most of the surveyed institutions were using blended learning (91%), integrating e-learning into conventional teaching, but surprisingly 82% of institutions also indicate that they offer online learning courses [8]. The aim of the research in [9] was to investigate the merit of the e-learning portal for adult learning who have enrolled their studies in distance education. Data were collected from a sample of 1084 undergraduate learners through questionnaire. The data revealed that the learners agreed that they benefited from using the portal. Most learners agreed that E-learning portal adds value to their learning.

The study in [10] looked at the impact of web portal on e-learning among undergraduate students. It considers the benefits of using the portal and the problems encountered when engaging the portal. A pure qualitative method using descriptive survey approach was embarked upon. The data collection method used during the survey was focused group discussion method. The results revealed that most of the respondents confirm that web portal positively impact e-learning in several ways. The purpose of the paper in [11] was to study the problems with current e-learning platforms and recommend ways to improve the effectiveness and efficiency of e-learning platforms.

The paper in [12] explored the development of a framework for interoperability that will bridge the existing gap between research and education in the universities and ultimately deployment in the corporate world. This will further encourage the ability to develop a whole new breed of educational tools and technologies that could benefit learners in their professional spheres and workplaces. The research in [13] suggested an approach to e-learning that places emphasis on active and open collaboration, and also the incorporation of other services that contribute to the process of learning. This approach aims at having an enhanced learning environment that is linked to other systems within the surrounding environment.

The study in [14] took advantage of the new features of Joomla open source in building a system used by lecturers to develop the skills and capabilities of students through the electronic portal and to raise their educational level. The work in [15][16] explored the opportunities of using Free and Open Source Software (FOSS) in developing an e-learning portal, which could function in an e-learning institution, or as a training section inside the intranet of a company. Mobile Telephony application was also reported in several studies including [[17].

3   SYSTEMS DESIGN AND MODELLING

Figure 1 shows the interaction between the user object and the chat control which involves sending a message from the Chat GUI to the Chat Control, which stores the input of the GUI and displays it to all users online. It then sends a message to the user entity. Figure 2 shows the collaboration diagram for message composition.
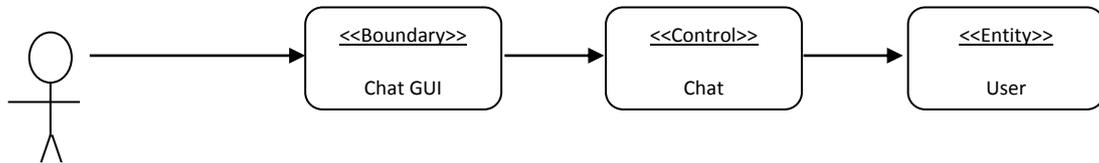

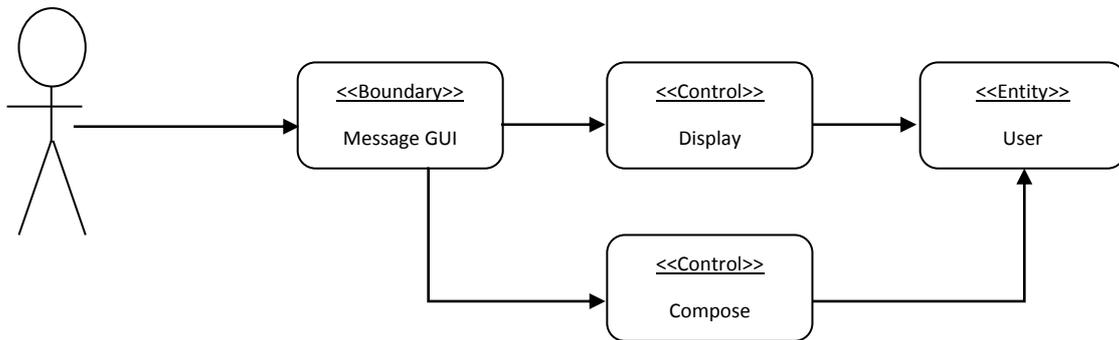Figure 1: Collaboration diagram for the online chat.

Figure 2: Collaboration diagram for messages.

The activity diagram as presented in Figure 3 shows workflow of activities in the proposed system. It starts from the home page and on to the login module once the user has been validated. It then redirects the user based on his / her role and is given access to functions / activities based on the role. If the user is not validated he can register and has to wait for the administrator to validate his / her account. When the user is done he / she will have to log-out.

4   SYSTEMS IMPLEMENTATION

The tools engaged in developing this application include ASP.NET and C# as the server side programming, Apache as middle ware and MySQL as the database. With this application, lecturers and students are able to interact better.
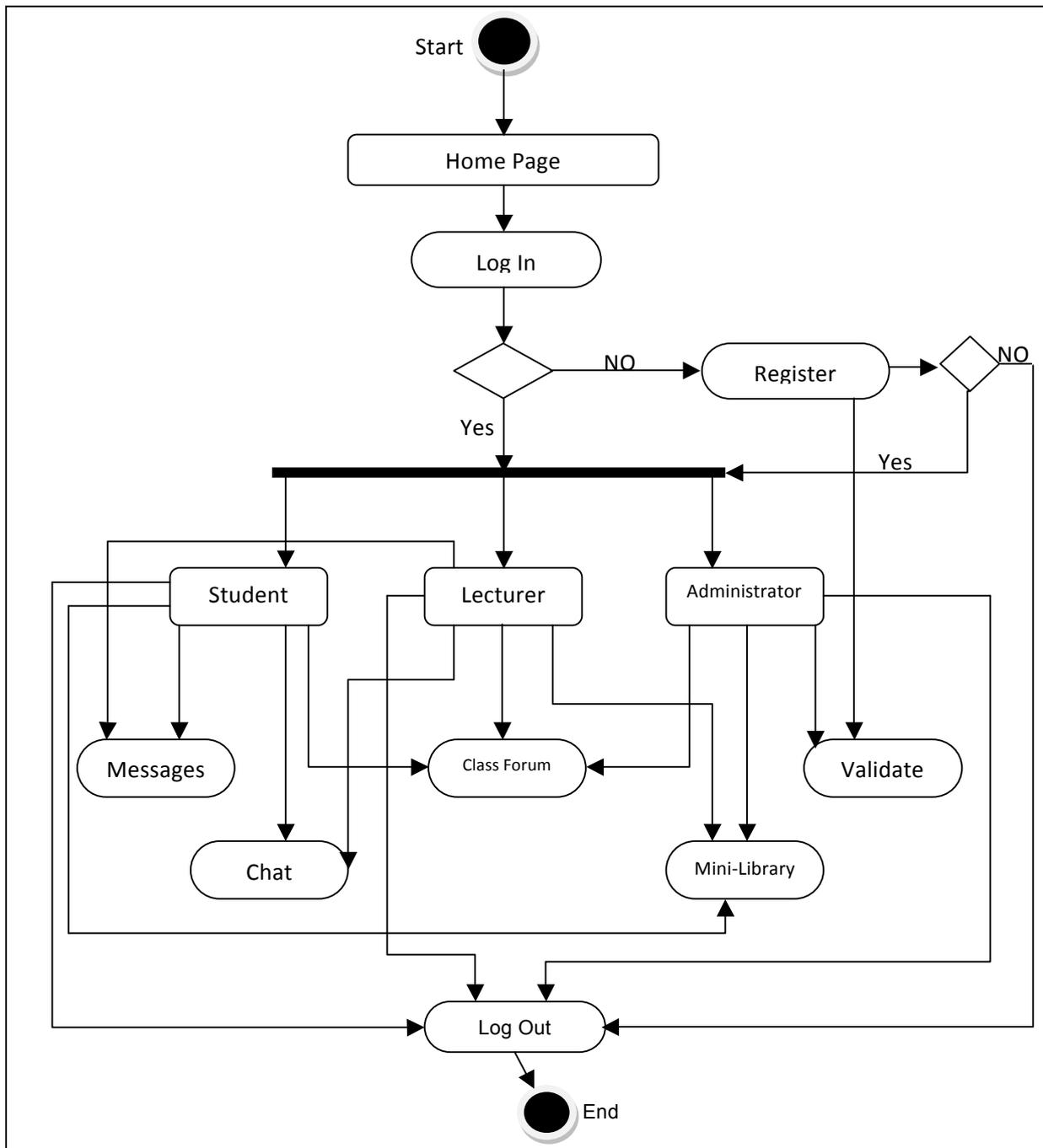
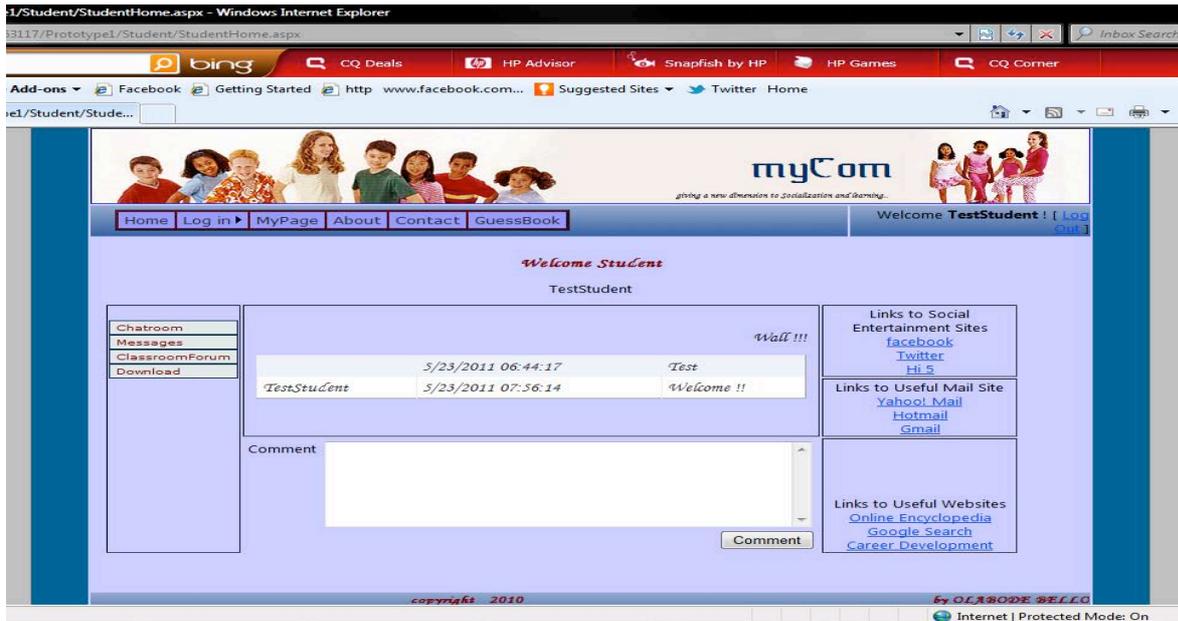Figure 3. Activity diagram of the system.

Figure 4. Student's home page.

The home page of the system is presented in Figure 4. It provides a wall for communication to the students. The chat room page presented in Figure 5 is used by logged in users to interact with each other. It displays the online users and the message from each user in real-time. The page presented in Figure 6 is used to compose new messages to be sent to another user. It consists of text boxes that allows user to type a message and send to intended recipient.
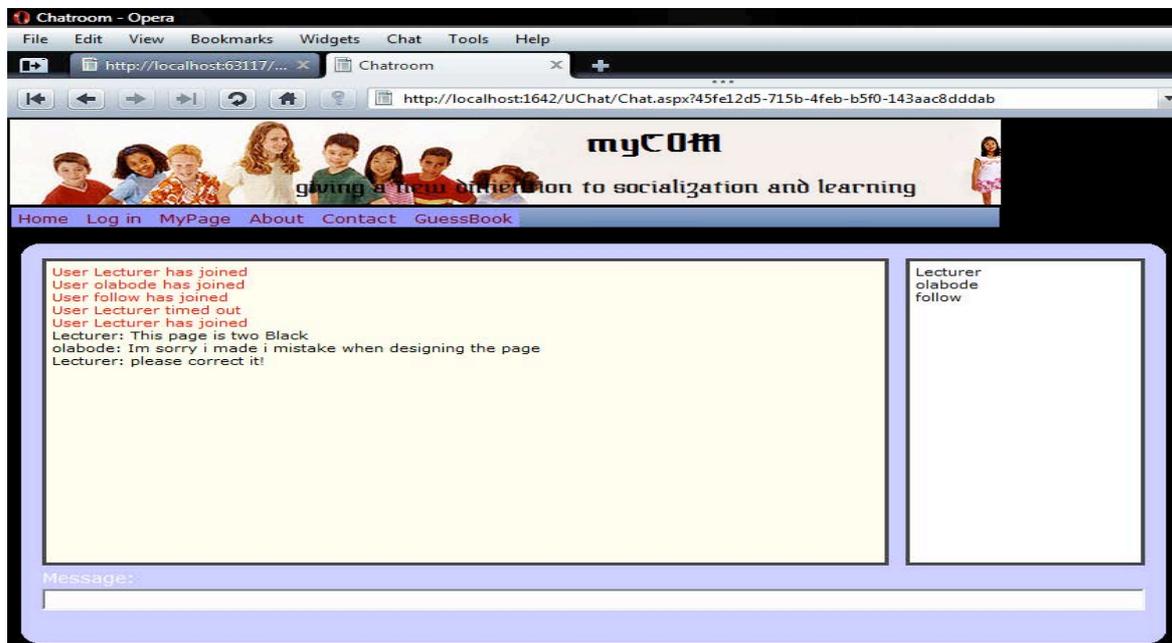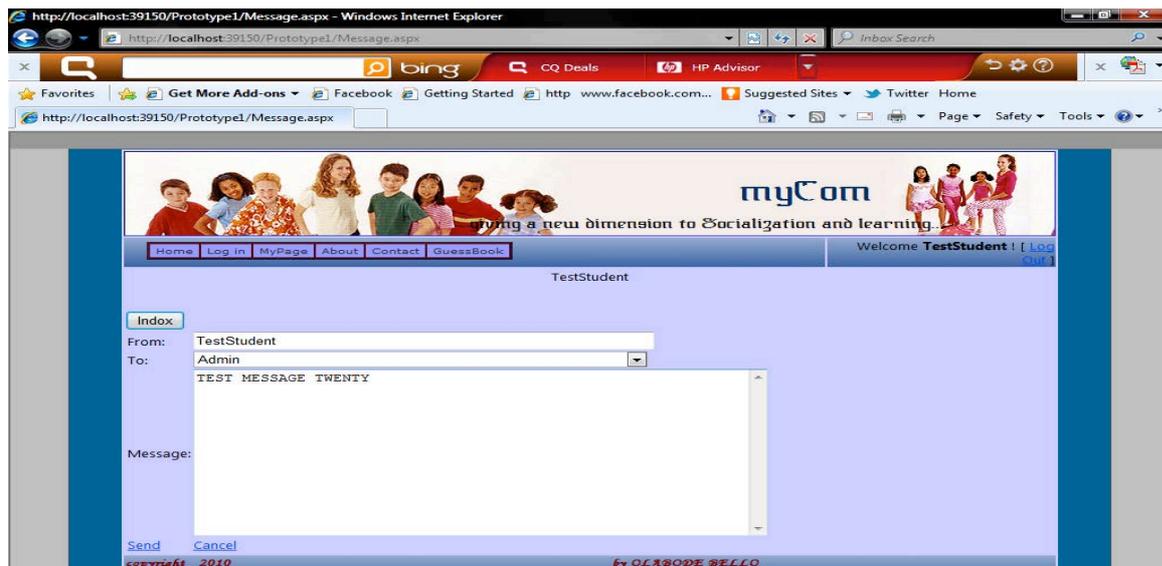

Figure 5: Chatroom Page.

Figure 6: Compose Message Page.

5   CONCLUSION

In this paper, an Intranet for a learning institution was developed. The basic features of the intranet portal include: send and receive email, accessible anywhere and any time, security, teamwork and collaboration. The Intranet portal helps to increase workflow productivity, improves efficiency of administration, and also to enhance distance learning.

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