Session Timeout Mechanism in Learning Management System - Case Study

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Abstract: Rapid development occurs in the education sector, although this pandemic situation requires us to use the technology of the ubiquitous learning concept. In this learning technology, as an extension of the growth of electronic learning (e-learning) and mobile learning (m-learning) offers more than just the latest educational ideas or methods. Internet and intelligent devices era, unrestricted access to on-line references, learning materials and archives are available. These millennial learners are intelligent learners, accessible 24 hours a day. The existence of digital education platforms in higher education institutions was vital to maintaining the learning activities of millions of students around the world. In this study, we sought to evaluate the changes that occurred in the teaching-learning process during the pandemic COVID-19, and what was the perception of Tamil University students and professors regarding learning and how it was implemented. This paper seeks to elaborate on the session handling concept used in the top most LMS platform of Modular Object-Oriented Dynamic Learning Environment (MOODLE) software tool for developing security and usability in the Institute of Tamil University, Thanjavur. This type of solution is essential during this time where social distancing and lockdown protocols are in place.

Keywords: Human Computer Interaction (HCI), Ubiquitous Computing (UC), Context-aware, Context-adaptable, Session handling.

1. INTRODUCTION

In this Covid-19 pandemic, there is a great deal of stagnation in the majority of the field, especially in the domain of the education sector also. Over the globe an education institution has closed down temporarily, to secure students and teachers from possible infection. An examination by UNESCO says that almost 1.2 billion students in 143 countries are affected the process of teaching-learning by the pandemic. In this situation, Ubiquitous learning can accommodate students and their learning styles by providing adequate information anytime and anywhere based on their characteristics, needs, and desire to improve academic performance.

Ubiquitous learning, labeled as u–learning, is the transformation of the traditional physical method of learning. This ubiquitous method of learning is an daily learning environment that is facilitated by some of the gadgets such as computers, mobile phones and networks. It includes both synchronous and asynchronous types of learning, where students and their learning styles by providing adequate information anytime and anywhere. Even during this lockdown period, both of these services are extremely useful in catering the requirements of the leaner. This ubiquitous learning is carried out by the portal of Learning Management System (LMS), in the digital space.
A Learning Management System is a phrase used to illustrate a web-based technology, plan to designed, implementation, and access a particular learning process. It is very essential to students and lecturers in this day and age; we can see clearly rapid changes and developments in technology. Students and teachers benefit from educational technologies because they enable them to learn through interactive and collaborative methods. The LMS is used by institutions to replace conventional face-to-face delivery, distance education where faculty members develop and share digital learning materials via the Internet. A learning management system (LMS) is an application that is used to monitor, manage, and administer a learning system, and is most often used in a learning environment. The most widely adopted LMS in the region are Blackboard, Sakai, KEWL, and MOODLE.

Modular Object-Oriented Dynamic Learning Environment (MOODLE) is free and open source software. It allows students to connect in groups or individually. These platforms help the learners to get access to lectures through handouts or videos. These platforms can help teachers to publish activities and tests for their students and assess them. Some of these platforms are commercial like Blackboard, and others are free and provide open-access for both the teacher and his group like MOODLE. In Tamil University they used MOODLE because of it is free and open source software.

This article deals with the advantages of e-learning that happens with the help of technology, and the necessity of this mode of learning and its ubiquity in the present-day scenario.

The rest of the paper is categories as accompany of below: In Section II provides a review of associated work in the discipline. Section III we give a background details of MOODLE LMS. In Section IV, an initiation case study in the using the CAAS framework together with a preliminary example of the implementation of specific features and attributes are using it. In the end of the paper, Section V, we present some of the conclusions and future work.

2. LITREATURE SURVEY

The authors [4] focus on student attitudes, behaviors and knowledge in the field of social networking sites (SNS) in online learning. The author conducted on-line surveys and interviews to gather data analyzed using the NSS and LMS to improve online learning. The authors illustrate the major factors of the proposed model: resource sharing, communication, collaboration, utility, ease of use and social influence. The SNS model is often used by a some of the students who are interested in computer literacy only. The authors identify the disadvantages of security of the SNS model, privacy, reliability, network problems (speed of access, real-time synchronization and efficiency) the Facebook and (Modular Object-Oriented Dynamic Environment) MOODLE are outliers. The authors suggest improving students by providing advice, training, planning, organizing, integrating SNS and LMS, as well as guidance to further refine and adapt SNS models in e-learning or from other establishments.

In [2] Dandelion, a unified code offloading system for wearable computing, is presented. The author suggested work to leverage computer resources in close proximity by D2D and cloud off-loading. The authorship model can significantly increased the computational power and reduce the energy consumption of wearable devices for Android OS like as Google Glass. In the future, researchers will be able to examine the possibility of migrate the system to other platforms, as well as security and compatibility issues aimed at integrating them into the next generation design.
The author [6] placed emphasis the concept of abstract technology for user interaction devices in the context of ambient intelligence and ubiquitous computing. The authors have developed a dandelion frame with multi-agent technologies to construct a GIP-based physical user interface. The authors have achieved the framework techniques of the model-driven approach with device distributed abstraction for developing physical UIs. The authors model the results in a way that reduces the coupling between systems and final devices for implementing physical interfaces.

3. MOODLE ENVIRONMENT

MOODLE is a phrase for Modular Object-Oriented Dynamic Learning Environment, was founded by Martin Dougiamas, a scientist and educator. It is free web-based learning software under the GNU License [3, 1]. MOODLE is designed to improve learner requirements by providing the quality of online courses written in PHP with SQL as the associated database [5]. MOODLE is very user-friendly compared to other LMS and has been used by various groups, not only the formal education world, not-for-profit organizations and private businesses also have numerous uses. MOODLE is also easy to develop with right security and administration support. Using MOODLE, a teacher can create a learning environment where the instructor can provide materials, provide a place to gather work, conduct quizzes and various other online activities. In comparison with others, MOODLE uses the Internet extensively, with features such as Quiz, Assignment, Feedback, Forums, chats, newspapers, automated test and scoring tools, and student tracking.

4. CASE STUDY: LEARNING MANAGEMENT SYSTEM IN COLLEGE

Ubiquitous learning technology is achieved through the integration of digital smart devices, such as kinetic sensors, smart gadgets and so on. A pilot project took place in 2020 with the group of 20 students, under the direction of professors from the Computer Science Department at the Tamil University of Thanjavur. Research and work in the area of the Learning Management System (MOODLE) platform, this platform enhances the synchronization of educators and learners in a digital scenario.

We conducted a survey to determine the extent to which teachers accept and use various elements of LMS, and what teachers perceive to be the main barriers to developing LMS. Based on the survey result, we discover that the concept of session management does not take over in the MOODLE system, as teaching-learning activities unfold.

The primary intensity of overcoming the problem is making the system framework of context-aware and adaptable system (CAAS). The framework consists in the integration of dandelion into the MOODLE platform. CAAS consists of Logic unit, control unit, mapping unit, protocol unit, object unit and monitoring unit. This proposed architecture is designed as light-weighted plug-in to support usability and its throughput.
Figure 1: Represent the flow diagram of a MOODLE session handling.

Figure 1 illustrates the organization flow diagram of a MOODLE session management mechanism. Begin the process first, and then the next step in the flow movement of the session process. While awaiting the session process begins, when users log into their MOODLE account, homepage of MOODLE is Figure 2. The session handling mechanism allows the server to log out automatically after being idle for some time, here we give the minimum time is 5 minutes. In this process, it follows the registered information of the students and as they access the data of different web pages by granting permission for further use. If users do not upload a new page within the specified time period, MOODLE will terminate their session and log them off with the website administrator via the alert information. The global rights for managing the mechanism such as setting the time of the session, tracking the details of the session are managed by the MOODLE administrator. The idea to alert the user about a session timeout will occur and give the possibility to prolong the session, is great. Those are represented in the Figure 3. But in its present state, in my view, the function can frustrate the user. If a user returns to his computer after a certain time, he will see the following message on the MOODLE tab/window:
SCRENNSHOTS

**Figure 2: Showing Login Page**

**Figure 3: Represent the Session timeout**
5. RESULTS AND DISCUSSION

This system only permits an administrator with valid credentials to log into the system and manage users and system content. The administrator registers each user; a student or teacher must be registered by the administrator so that he or she can register and log into the system. The security and usability concept are takeover by the CAAS framework.

From this work on-line education was identified as a good option during the pandemic period. However, should this pandemic continue, it is important to start thinking about a comprehensive strategy and accompanying policies that can address a potential change in the current paradigm of it is meant by higher education and its inherent activities

REFERENCES