

Implementation Of Caas Learning Management System

S.Sahana

Research Scholar, Department of Computer Science, Tamil University, Thanjavur, India.

Email: 25sahana@gmail.com

Abstract: An education industry is an undergoing major transformation of predominant development and new innovative ideas of the future. A ubiquitous computing is a strategy to mature as a discipline and it plays a vital role in the country's education system. This paper examines the concept in the field of an education. Around the world, many Universities and teaching sectors try to provide the Ubiquitous eTeaching & eLearning (UTiLearn) techniques to train their faculties and students. The main advantage and flexibility in the education sector is distance eTeaching and eLearning phenomena. Distance eTeaching and eLearning (DTL) is on the rise among digital natives alongside our evolution towards smart communities. The Learning material supports self-learning, self-paced learning in the trainees, increases the interest levels of the students. To integrates the concept of context-awareness and context-adaptable system in the existing framework of dandelion. Such techniques are critical in providing vital services to target consumers; they also present a plethora of challenges and possibilities for software developers to enhance the usability and scalability of the ubiquitous computing system, such a proposed system is termed as CAAS.

In this paper implement the proposed Context Aware and Adaptable System framework was tested with a real time case study of learning management system environment. The research goal is carried out by the ensemble generic algorithm of "Optimization Algorithm" integrates with Context Aware and Adaptable System (CAAS) framework within a ubiquitous computing scenario that works with any session-based concept and multi-device setting in learning management system.

Keywords: Ubiquitous Computing (UC), Context Awareness, Context Adaptability, Session timeout, Learning Management System.

1. INTRODUCTION

Human-computer interaction (HCI) [2] is an interdisciplinary field of research that explores how humans (users) communicate with computers, especially in terms of design, implementation, and evaluation. HCI has since expanded to include virtually all forms, from the design of information technology, although it was originally concerned with computers. This concept was automatically represented with the emerging technology of computers, to make the human friendly, more interactive and efficient working environment with the machine. In the research domain, human-computer interaction takes place at the intersection of architecture, behavioral sciences, computer science, media studies, and several other fields of study.

Over the last few decades, information and communication technologies have been the subject of a series of evolutionary innovations and have improved the quality of human life significantly. Computing and communication face an ever increasing number of major challenges and innovative advances in the era of the 21st century. In the domain of HCI a ubiquitous computing concept play a vital role.

Ubiquitous Computing is a post-desktop approach to human-computer interaction in which data processing is seamlessly integrated into everyday objects and events. Pervasive computation, environmental intelligence, and other terms have been used to characterize this paradigm. In our lives, this is an almost invisible technology. UbiComp has potential applications in many fields, such as healthcare, disaster prevention and management of business systems, irrigation of agricultural land, and empowering the common man to improve the quality of life. UbiComp can create a ubiquitous environment that incorporates network technology (wireless and otherwise) and intelligent applications with processors and sensors. This combination of technologies can provide a smart environment in an efficient way.

Smart environments link computers and other smart devices to everyday settings and tasks. Smart environments aim to satisfy the experience of individuals from every environment, by replacing the hazardous work, physical labor, and repetitive tasks with automated agents. From that smart environment, in this paper explore the teaching-learning process via Context Aware and Adaptable System (CAAS) learning management system. It mainly focus the concept of session timeout in the LMS platform.

The popular option of a session timeout [5] is used with caution. It has been used to see how lengthy a gadget can be authenticated on a virtual switch it before needs to be authenticated once more. The session doesn't really expire by default, but once a gadget is authorized, it can remain in until it disables, the switch restarts, or the gadget is issued a CoA.

The remainder of the paper is divided into the following categories: Section II requires you to finalise a related work in the discipline. Section III presents the implementation of the CAAS framework; Section IV concludes with a conclusion and future work.

2. RELATED WORK

Et.al Varela, G. [1] tackles the challenge of designing user interfaces for ubiquitous computing as well as ambient intelligence systems. For UC (Ubiquitous Computing) and AmI (Ambient Intelligence) systems, an author proposed a UI (User Interface) abstraction framework that significantly improves their portability among both environments and for various users. A authors presented a Dandelion framework, which is a set of UC user interfaces that can be customized for various applications. Dandelion, rather than relying on an ad hoc blend of technology solutions, can significantly reduce the costs in the development effort needed to build UC user interfaces.

Et.al Golkarifard [3] relies on the idea of a unified code offloading system for wearable technology that uses D2D to leverage nearby computation resources and offloads the cloud. The authors presented a Dandelion framework java based annotation, a lighter weight offloading provider, as well as a run - time scheduler to make offloading decisions. The researcher suggested a framework for continuing to increase computational capacity in wearable devices while lowering energy consumption. In future work, the researcher would like to have the buddy researcher to look into the feasibility of migrating the system to certain other platforms.

The concept of user session identification of session timeout on web site is focused on in this [4] work. Xinhua, He, and Wang Qiong proposed the session identification algorithm based on dynamic timeout and another algorithm is the basis of the traditional timeout algorithm, which combined with accessing habits of web users and the characters of different pages. The author compares the experiment with the traditional timeout algorithm and its improvements show that the new algorithm proposed for better performance on session identification, which improves the accuracy of data preprocessing. Author model outcomes of the modified algorithm average time depend on the web page, using the algorithm to separate session's better reality than using single constant values for the algorithm.

3. IMPLEMENTATION - CONTEXT-AWARE AND CONTEXT-ADAPTABLE SYSTEM FRAMEWORK

Smart devices, such as kinetic sensors, smart gadgets, and other smart devices, are used to achieve ubiquitous learning technology. This work implements the optimization algorithm in the Context Aware and Adaptable System (CAAS) framework of learning management system.

Validation:

The purpose of this research is to make comparisons the actions of the Resource Controller in these two use cases for each of the defined algorithms (ESA and SOA):

Case # 1: Each 6 seconds, a system runs a provider that accesses the gadget (kinect, RFID, Bluetooth, etc.) resource.

Case # 2: The system runs two services that periodically access different capabilities via RFID, Bluetooth, or any other gadget at quite a frequency of 5 as well as 12 seconds.

Within those cases, author ignores the discovery moment as well as makes the assumption that the Bluetooth service being used is well-known. The Discovery component (that also utilizes the Bluetooth resource) would be required if Bluetooth abilities were unknown. As a result, discovery is modeled as yet another system that allows the Resource Controller to access resources.

Algorithm

Pseudo code of Session Optimization Algorithm

(J_{Cy} ,) setPriority (Priority.HIGH)

1: add to R_{Hx}

2: if S_x is used by J_{Cz} with Priority.LOW then

3: release(S_x) from J_{Cz}

4: assign(S_x) to first element of R_{Hx}

5: wait() until S_x is assigned to J_{Cy}

6: return

(J_{Cy} ,) setPriority (Priority.LOW)

1: add to R_{Lx}

2: if S_x is not used then

3: assign(S_x) to first element of R_{Lx}

4: wait() until S_x is assigned to J_{Cy}

5: return

(J_{Cy} ,) releaseResource ()

- 1: release(S_x) from J_{Cy}
- 2: assign(S_x) to first element of R_{Hx}

Research and work in the area of the Learning Management System (CAAS) platform, this platform enhances the synchronization of educators and learners in a digital scenario. There are a hierarchy of user roles defined that are, administrator, teacher and student.

CASE STUDY

The university has conducted the online examination in the CAAS learning management system platform. For a case study, choose Tamil subject for 60 students in the CAAS platform that are mentioned below with an appropriate screen shot view of teachers and students point of view.

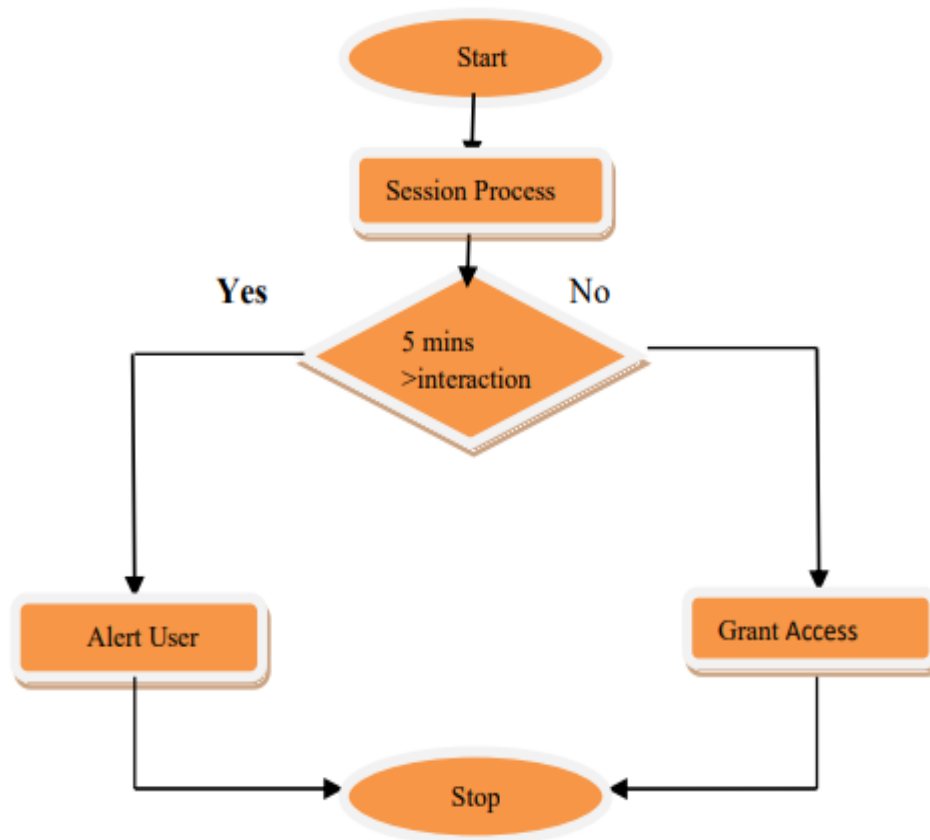


FIGURE: 1 CAAS Session Handling

A CAAS session management mechanism's organization process flow is shown in the diagram below (figure 1). Begin the process initially, and after that keep moving onto next step of the flow of the session. The LMS webpage appears as user logged into their own CAAS account as well as stay for such session process to start (figure 1). After such a period of inactivity, which in this case is set to 5 minutes, the session handling mechanism allows the system to log out instantly. It tracks the students' registered information as they access data from various web pages and grants permission for further use. If users do not upload a new page within the agreed period, CAAS will terminate their sessions and log them off with

the website administrator via the warning information. The CAAS administrator is in charge of the mechanism's global rights, such as setting the session time and monitoring the details of the session.

A concept of notifying the user when their session is about to expire and giving them the opportunity to extend it is brilliant. This is portrayed in (figure 2). Even so, in its present state, I believe the characteristic can frustrate customers. The CAAS tab/window would then exhibit the following message if a customer returns to his machine over a certain amount of time:

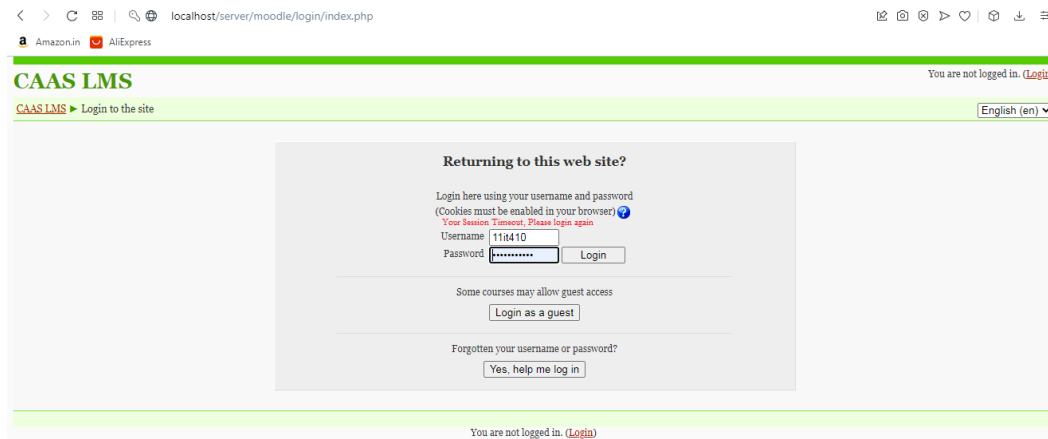


FIGURE 2: Session Timeout

4. CONCLUSION AND FUTURE WORK:

This system allows only an administrator with valid credentials to log in and manage users and device content. The administrator registers each user; in order to register and log into the system, a student or instructor must be registered by the administrator. The CAAS system takes over the protection and usability concepts. Online education was established as a viable alternative during the pandemic as a result of this research. However, if the pandemic persists, it is critical to begin planning a comprehensive strategy and related policies to resolve a possible shift in the current model of what higher education and its associated activities entail. From this scenario, it is justified that the optimization algorithm is provide the robust solution for the session timeout mechanism of the security purpose, and also provide the logged details increase the modularity devices.

Acknowledgments

I wish to express my sincere thanks and gratitude to my research supervisor for the continuous support of my PhD study and research work Dr.A.B.Karthick Anand Babu, Assistant Professor, Department of Computer Science, Tamil University, Thanjavur. Reach him through Karthickanandbabu.ab@gmail.com.

5. REFERENCE

- [1] Varela, G., Paz-Lopez, A., Becerra, J. A., & Duro, R. (2016). A framework for the development of context-adaptable user interfaces for ubiquitous computing systems. *Sensors*, 16(7), 1049.
- [2] Card, Stuart K., ed. *The psychology of human-computer interaction*. Crc Press, 2018.

- [3] Golkarifard, M., Yang, J., Huang, Z., Movaghar, A., & Hui, P. (2018). Dandelion: A unified code offloading system for wearable computing. *IEEE Transactions on Mobile Computing*, 18(3), 546-559.
- [4] Xinhua, He, and Wang Qiong. "Dynamic timeout-based a session identification algorithm." *2011 International Conference on Electric Information and Control Engineering*. IEEE, 2011.
- [5] Shushma, Develapalli, N. Joshi Padma, and Suresh Akella. "User Identity Verification for Secure Internet Services using CASHMA." (2018).