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# IoT based Imitated Educational Exam System

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**Abstract:** *The Internet Of Things (IOT) is the inter-networking of physical devices and it provides the ability to transfer a data over a network. In general examination system, there are more chances to get paper hacked i.e. security issues as well as unauthorised access to exam module.to overcome this problems, we are going to provide an efficient education system which helps to avoid the security issues. We erase also generating certificates.*

**Keywords-** *Learning Management System (LMS), Cryptography, Quick Response(QR) Code, Advance Encryption Standard(AES) Algorithm, Service Oriented, Master Shared Key(MSK).*

## Introduction

This aims to identify various vulnerabilities that may violate exam security in m-learning environments and to design the appropriate security services and countermeasures that can be put in place to ensure exam security. It also aims to integrate the resulting Simulated Educational exam system with an existing, open source and widely accepted Learning Management System (LMS) and its service extension to the m-learning environment, namely the Moodbile Project.

To design a Simulated Educational Exam System (SEES) that meets the distinct security requirements of m-learning environments and to integrate it with the current Moodle/Moodbile platform. This will result in a complete LMS that is both equipped with secure exam services and suitable for m-learning. Our intention of integrating SEES with a well-known LMS such as Moodle is so to get the benefits of Moodles readymade services in other learning aspects such as course material administration, documentation, etc. which have been experienced and appreciated for the last 15 years. However, the proposed SEES can also work as a standalone Simulated Educational Exam System for m-learning environments without integration with Moodle.

## Related Work

1. Mobile learning in review: Opportunities and challenges for learners, teachers, and institutions Rachel Cobcroft, Stephen Towers, Judith Smith Axel Bruns Creative Industries Faculty Queensland University of Technology, AUSTRALIA Rapid developments in information and communications technologies (ICT) and evolving learner behaviours require learning institutions to continuously reevaluate their approaches to pedagogy, both in the physical and virtual classroom spaces. The increasing availability of low-cost mobile and wireless devices and associated infrastructure heralds both opportunities and challenges for educational institutions and their teachers and learners. This system advocates the development of a best practice framework to guide future action and thinking.[1]

2. A platform on the cloud for self-creation of mobile interactive learning trails Yiqun Li\*, Aiyuan Guo, Jimmy Addison Lee and Gede Putra Kusuma Negara(2013) a system to create mobile interactive learning trails. The system includes a web portal running on the Amazon cloud server for people without programming skill to create trails for outdoor \_eldtrip learning, and two universal apps for iOS and Android phones respectively to run different learning trails. It enables rapid and easy creation of learning trails within 15 minutes without mobile app development. The learning contents can be customised by teachers, and activated by snapping pictures from physical Objects of Interest (OOI) or entering a geographic area. Image recognition technology is used to identify which OOI that the picture is captured from, and return relevant contents pre-associated with the OOIs.[2]

### 3. Mobile Learning in Mobile Cloud Computing Environment

Author: Stojan Kitanov, Danco Davcev

This paper presents a new model of mobile distance learning system (MDL) in an extended Mobile Cloud Computing (MCC) by using High Performance Computing (HPC) Cluster Infrastructure, as well as some existing videoconferencing technologies enriched with mobile and wire-less devices. This MCC model can be applied everywhere where there is need of fast and intensive computing and analysis of huge amount of data, such as modeling of 3D graphics visualization and animation in ecology, global climate solutions, financial risks, healthcare and medical learning, decoding genome projects, etc. After the MCC model presentation, the experimental system architecture will be provided, as well as its possibilities, with particular reference to mobile learning environment and its potential issues. In this architecture the mobile device may optionally use the open source e-learning course management system platform Moodle, to access the learning material and the relevant data that needs to be transferred to the HPC Cluster Infrastructure for further computing. In order to provide higher quality of presenting the learning material, the Cisco WebEx application will be used to test the distance learning in both fixed and mobile environment.[3]

4. "Extending Moodle Services to Mobile Devices: The Mood-bile Project" Author: Mara Jos Casany, Marc Alier, Enric Mayol, Jord Learning Management Systems (LMS) are widespread among most education and training institutions. Even though LMS are a mature technology, they have left the vanguard of innovation in e-learning to mobile devices and tablets. Mobile Learning (M-learning) may enhance e-learning by increasing communication and conversation opportunities to converts the learning process more collaborative and learner centred. This paper describes a way to integrate mobile devices and educational applications with a LMS as Moodle through web services: The Moodbile Project. Rather than just creating mobile apps that replicates LMS functionalities on a mobile device, Moodbile provides to m- learning developers with the necessary tools to allow mobile devices to interact with the LMS. In this paper, we describe our proposal of an open specification of web services to support the integration of mobile external applications with Moodle.[4]

5. Secure Online Exams Using Students Devices (2012)

Authors: G. Frankl, P. Schartner, and G. Zebedin

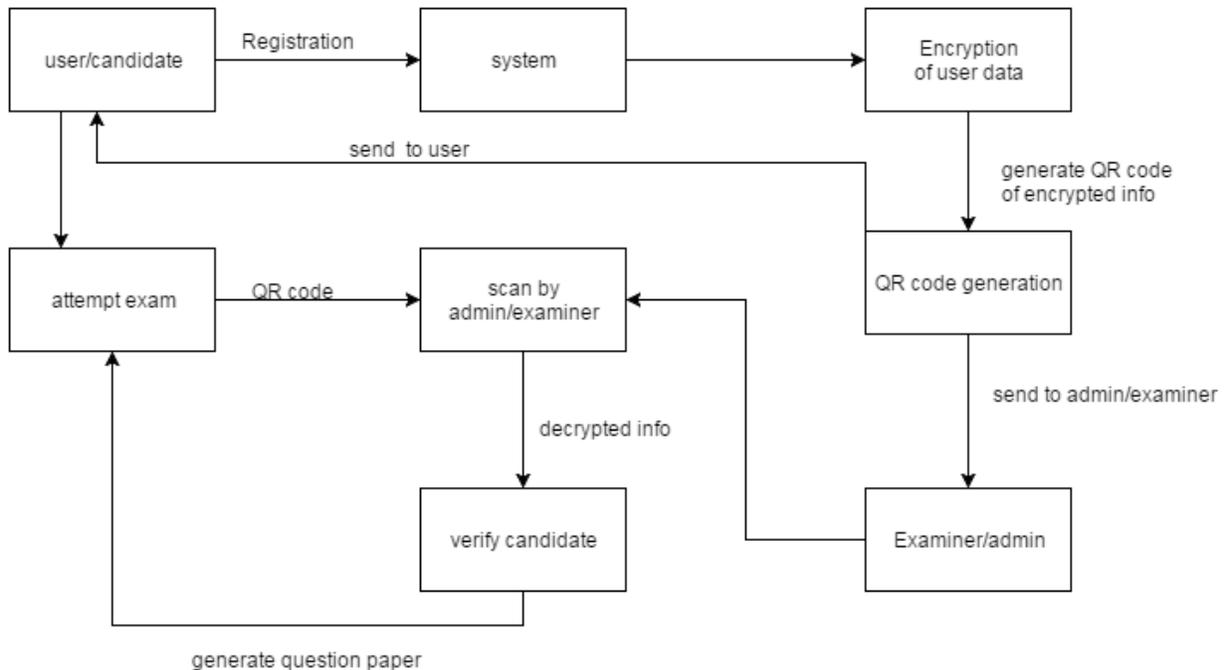
With the augmented use of Learning Management Systems (LMS) like Moodle, the demand to perform exams online is higher than ever. Providing a dedicated exam room with up to hundreds of computers is a possible but very expensive solution. However, performing exams on student laptops increases the number of simultaneous exams but also the possibility for cheating. This paper describes the Secure Exam Environment (SEE) implemented at the AAUK to support exams based on Moodle to be held on student laptops without access to local \_les or the Internet. Additional programs like Excel or Java applications can be installed and used during the exams.[5]

6. Security in the Online E-learning Environment (2005) [?]

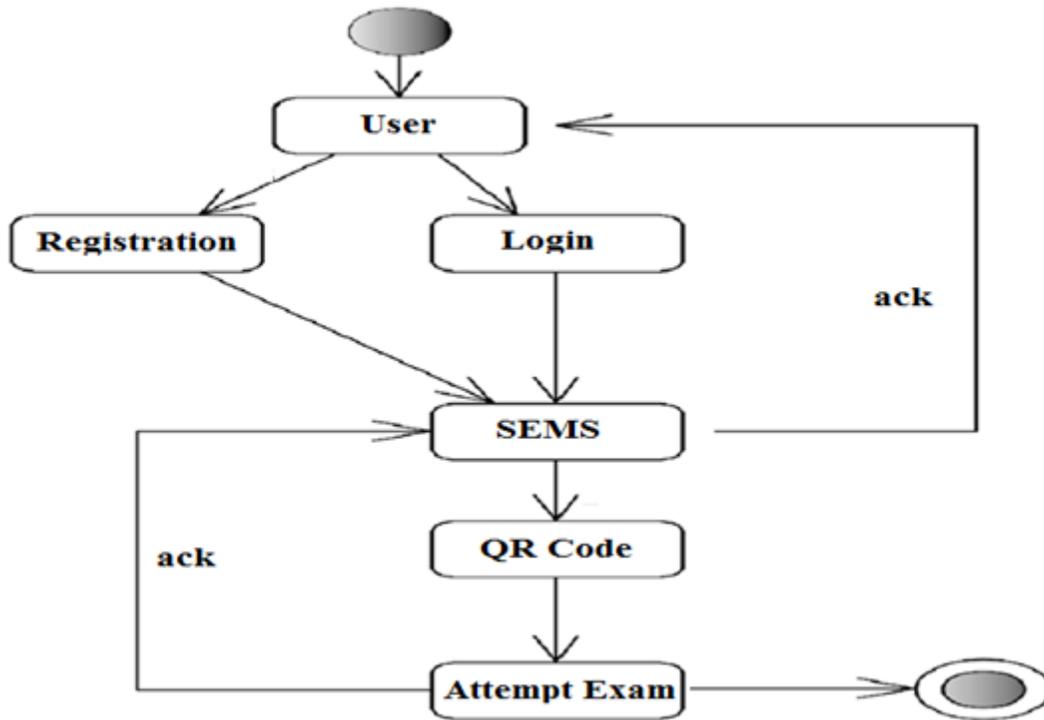
Authors: R. Raitman, L. Ngo, N. Augar, and W. Zhou

This paper addresses the role of security in the collaborative e-learning environment, and in particular, the social aspects of security and the importance of identity. It represents a case study, completed in Nov 2004, which was conducted to test the sense of security that students experienced whilst using the wiki platform as a means of online collaboration in the tertiary education environment. Wikis, fully editable Web sites, are easily accessible, require no software and allow its contributors (in this case students) to feel a sense of responsibility and ownership. A comparison between two wiki studies will be made whereby one group employed user login and the other maintained anonymity throughout the course of the study. The results consider the democratic participation and evolution of the work requirements over time, which in fact ascertains the nonvalidity of administrative identification.[6]

**System Architecture**



### Activity Diagram System

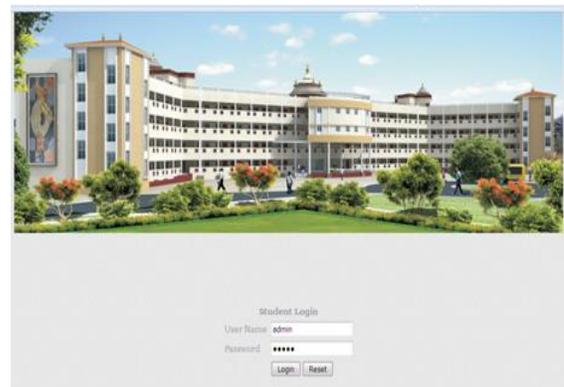


### Results

1.HOME PAGE



2.LOGIN PAGE



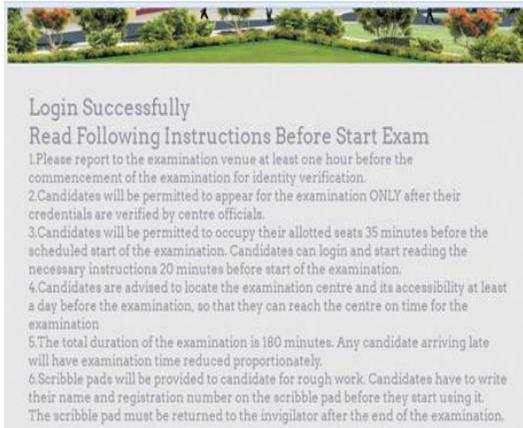
### 3.EXAM LOGIN



### 4.REGISTRATION PAGE



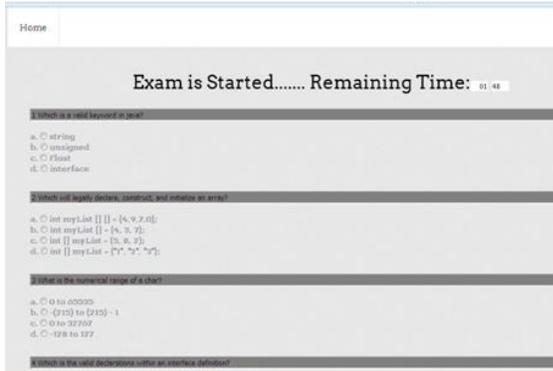
### 5.LOGIN SUCCESS PAGE



### 6.QUESTION PAPER GENERATION PAGE



## 7. EXAM PAGE



### Conclusion & Future Work

In this the design of a Simulated Educational Exam System (SEES) to mitigate the unique exam security threats that exist in m-learning environments.

SEES offers many exam services such as: secure and random distribution of exam questions, turbo-mode assessment, prevention of the unattended exam issue, biometric-based authentication service for anti-impersonation, preventing students from exchanging their devices during an exam, conducting exam securely through online or offline strategies, and auditing.

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