Online Examination System

Deepankar Vishwas Kotwal[1]
Computer Engineering Department
Sanghavi College of Engineering, Nashik.
Maharashtra, India.
kotwaldeepankar@gmail.com

Shubham Rajendra Bhadke[2]
Computer Engineering Department
Sanghavi College of Engineering, Nashik.
Maharashtra, India.
shubhambhadke@gmail.com

Aishwarya Sanjay Gunjal[3]
Computer Engineering Department
Sanghavi College of Engineering, Nashik.
Maharashtra, India.
aishwaryagunjal26@gmail.com

Abstract: Online Examination Systems are the latest modules for arranging the exams on-the-Internet. The simplest way to prepare and get ready for exams and get the immediate results is the online exams. Network such as home or private can be used for creating the examination environment online, it is possible through the LAN connection or Internet. Reducing the paper work and moving on to the technology is now a days not difficult if there are possible resources and also it a need to be get updated from the earlier scenario. Easy maintenance of past records and ease in scheduling the exams is the main feature of Online Examination System. Through the previous records of question papers set, evaluation and setting of new question set becomes easy. Thus it is more efficient and fast enough than the manual (handwritten) exams scenario. This paper describes examination modules used, fundamentals of the developed system and algorithms used.

Keywords: Random Number Generator Algorithm; Server Client Architecture; Security; Online Exam; Server Browser Architecture; LAN Architecture.

I.   INTRODUCTION

In conventional framework directing the examinations is extremely repetitive task for both analyst and educator. The entire process of allocating exams, paper sets and assessing the scores after the test was done manually till the date. The Online Examination is the online electronic framework. The framework focuses on diminishing the expenses all connected with organizing the exams over a specific timeframe and accomplishing computerization of examination framework at whole related assignments like distribution, enlistment of results which assists effective high level framework. In the wake of experiencing huge number of references at point it is concluded that we can manufacture one examination framework that can ease in understanding the access to establish for directing exams and evaluation of result. Online Examination series is a selective answer based examination system that is MCQ. It provides an easy way to use online exam framework for both students test conductors. The main objective of OLES is to provide all the features that an online examination system must have, with the interface that don't scare its users.

II.   DESIGN OF ONLINE EXAM SYSTEM

Network application development model is an important Browser-Server model. The special model as client server model that contained client side as web browser, and server side as web servers, for online network model. In case of LAN connectivity, the server node acts as the server side for handling and maintenance of the online network. The client nodes are the other computers connected in the local area network, which are able to gain the access to the question papers from the server for the specified session.

The main logic of the system is implemented on the server, later these copies of the main logic output are directly accessed on the client nodes. Such a web application has the good reusability and ease in maintainability. The entire system is developed in .Net Framework with use of C# (C Sharp) and JavaScript language and runs on the IIS (Internet Information Server) server. The whole system can be hosted on the network online, thus the name Online Examination System. JavaScript has become the technological need to be implemented in Web applications, because it is the easiest way in rapid development.

International Journal of Science Technology Management and Research
Volume 1 , Issue 2 , May 2016
www.ijstmr.com

<div align="center">

III.   **ARCHITECTURE OF ONLINE EXAM SYSTEM**

</div>

The architecture of the system describes the flow of the system and the modules included in it. A central server is the main node that is responsible to handle the scenario that is used in the network. In a network, all the other client nodes are connected in a local area network which is handled by central node. The main software is installed on the server, and using the network the copies of this software are accessed on the client computers. The diagram here describes the working of the computer lab system having the online exam system setup loaded. As depicted in the diagram two laboratories as Computer_Lab01 and Computer_Lab02 and connected to the central lab server, which is whole and sole responsible for generation of new question papers, distribution of question papers to the connected client computers, managing the students for exam, managing the system failure, result generation.
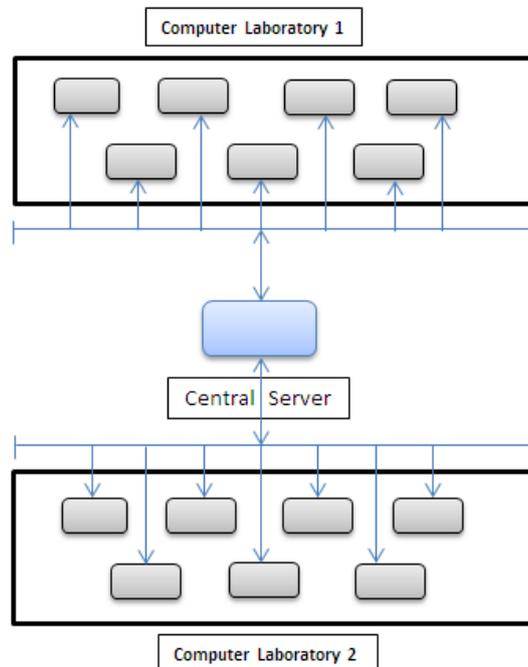

<div align="center">

Figure: Architecture of Online Examination System

IV.   **FUNCTIONAL MODULE**

</div>

The diagram below describes the functional modules of the system.
There are three main modules viz.
a) Questions Management.
b) Paper Generator.
c) Online Test (Exam).

a)   *Questions Management:* This module functions as addition, deletion, modification and querying of the question sets.
b)   *Paper Generator:* This module works for randomly generating the questions per exam paper according to the requirement specification, acting as the core function of online exam system. The question sets are randomly chosen from the database. Here the term Paper Structure defines the set of specified score and various questions, which constituted the paper. It has four types of questions viz. multiple choice, descriptive questions, short answer questions and programming questions. Teacher of the subject can set the structure of paper. It included types of questions, questions count and score for each question.

For example: A paper structure may include some false and some true questions, each question carries 1 marks or 2 marks; multiple choice questions will be of either 2 marks each or 1 marks each; 2 programming questions. The term paper describes the question paper generated by collecting the questions from the database in according to the paper structure. The paper consists of a set of various questions that forms online question paper.
c)   **Online Test (Exam):** The Student (user) is responsible for the use of functions of online exams, by randomly selecting the paper for practice test, or by attempting the final exam under Teachers supervision. The student-user is allowed to login to the system by his time within the campus, and practicing the online tests, and improving him/herself at each step.
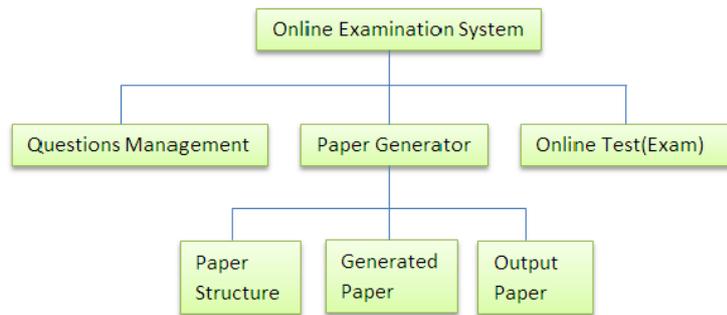
Figure 4.1: Functional Module of Online Examination System

V.   PROJECT AREA

The web based application for an approach to being a Techno-Savvy is conducting the examinations through Internet that can be useful in educational as well as corporate sector. The main goal behind such examinations is to reduce the manual work of hand written papers, correction etc. and improving students' capability of solving more and more practice question papers thoroughly increment in his final scores. For the setting the question set paper, algorithm named as Random Number Generator Algorithm is used.

- **Random Number Generator**

Random Number Generators (RNG's) use the Pseudorandom Number Generators abbreviated as PRNGs are the algorithms that can auto generate long run of numbers with their random property. These kinds of numbers are fine in certain situations, but they are not as random as dice rolls and coin tosses. It has a series of generated values that are determined by specified number called as seed. The most commonly used PRNG is "Linear Congruential Generator", that has the recurrence as,

$$X_{n+1} = (aX_n + b) \bmod m$$

for generating the numbers.

where *a, b* and *m* are X_{n+1} of large integers.

The maximum count of numbers this formula can produce is the **modulus** *m* series of pseudo-random numbers. To avoid some occurrences of random number properties of single linear congruential generator, such various RNG with slight changed values of multiplier co-efficient '*a*'can be used in parallel.

ACKNOWLEDGMENT

REFERENCE

[1] International Journal of Emerging Technology and Advanced Engineering, Website: www.ijetae.com (ISSN 2250 - 2459, ISO 9001:2008 Certified Journal, Volume 4 , Issue 3 , March 2014) 660 Online Descriptive Examination and Assessment System Bhagyashri Kaiche 1, Samiksha Kalan 2, Sneha More 3 , Lekha Shelukar 4 1,2,3,4 KBT College of Engg Nashik, (India)

[2] Z. M. Yuan, L. Zhang, G. H. Zhan, A novel web-based online examination system for computer science education, In proceeding of the 33rd Annual Frontiers in Education, 2013, S3F7-10.

[3] WebBased online Secured Exam; B.Persis Urbana Ivy,A.shalini, A.Yamuna/International Journal of Engineering Research and Applications (IJERA) ISSN:2248-9622 www.ijera.com Vol. 2, Issue 1,Jan-Feb 2012, pp.943-944943.

[4] Online Descriptive Examination and Assessment System.L. Zhang, et al., Development of Standard Examination System of Special Course for Remote Education, Journal of Donghua University (English Edition), 2013, Vol. 19, NO.1, 99-102.

[5] Challenges of Online Exam, Performances and problems for Online University Exam; IJCSI International Journal of Computer Science Issues, Vol. 10, Issue 1, No 1, January 2013 ISSN (Print): 1694-0784 — ISSN (Online): 1694-0814. www.IJCSI.org

[6] Al-Mashaqbeh, I.F. Al Hamad, A.Student's Perception of an Online Exam within the Decision Support System Course at Al al Bayt University Conference publication Pages: 131135 7-10 May 2010.

[7] Design and Development of the Online Examination System based on B/S Structure.Hongmei Nie Math,Physics and Information Engineering College Zhejiang Normal University Jinhua,China E-mail: nhm@zjnu.cn

[8] Shuffling Algorithms for Automatic Generator Question Paper. Nor Shahida bt Mohd Jamail Abu Bakar Md Sultan Faculty of Computer Science and Information Technology Universiti Putra Malaysia, 43400 UPM SERDANG, Selangor, Malaysia. E-mail: shahidajamail@yahoo:com

[9] Hanxiao Shi, Guodong Zhou and Peide Qian (2010), An A ttribute - based Sentiment Analysis System, Information Technology Journal, pp 1607 - 1614.

[10] Papri Chakraborty (2012), Developing an Intelligent Tutoring System for Assessing Students Cognition and Evaluating Descriptive Type Answer, IJ MER, pp 985 - 990.