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Online Examination System for University Level Descriptive Examinations

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***Abstract*—** Online examination systems are in a huge demand. Even though there are a wide range of online examination systems they have not successfully replaced the tradition examination system as tradition examination system require descriptive answers with diagrams. Especially for University level examinations like Engineering and Medical Science students knowledge is judged based on the concepts s/he has gained from the course and the applications of such knowledge is evaluated in the examinations. To support such examinations we require a system that will allow candidates to answer the questions in details with appropriate diagrams to support their explanations.

Keywords*-online examination; Descriptive examination;*

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I. INTRODUCTION

Even though there is a wide spread use of online examinations it has not successfully replaced the traditional paper examination system. These examination systems include only multiple choices, fill in the blanks, true/false, match the following type questions etc [1][2]. But for University level examinations textual based answers with diagrams to explain complex concepts is required [3][4].

Here we propose an online examination system that will use tablet PC to answer University level examinations. The candidates can login into the application on the Tablet PC. After the basic authentication the candidate will be given an interface where he can answer the questions using a stylus just like a pen. A drawing tool will help him draw diagrams in the same document editor, as s/he would do in the normal answer scripts. At the end of the stipulated examination time the application automatically submits the data to the server else, if the candidate finishes answering the questions before the stipulated time the student can submit this answers.

II. RELATED WORK

Most online exams are web based where candidates login to a web site and start answering the questions. A set of questions are created and stored in the database. These questions are shuffled and presented to different candidates so that candidates do not communicate the answers to each other if they are attending the exam by sitting nearby. [1][2]. The drawback of these online examination systems is that they have only objective type questions.

For university level exams, only objective type questions are not enough to test the knowledge of students. Online exams need to support text based answers and evaluation to be automated [5]. For engineering and medical courses extensive text and diagrams are required to test the knowledge of the candidates. For this drawing tools and marking components should be included in the online examination system. The evaluation of such diagrams can be done by comparing the candidates diagram with the specimen diagram provided by the faculty for evaluation [3]. Drawing a diagram on PC will not be an easy task and requires more time to finish the exam.

To support textual answers with diagrams tablet PC can be used more efficiently than PCs. Using tablet PC to write text and draw diagrams is more convenient for candidates as they can use keyboard or stylus to enter their answers [4]. If the tests are simple then it can be automatically evaluated but if the test comprises complex handwritten text with diagrams then a human needs to evaluate it.

III. PROPOSED SYSTEM

We propose an android-based system that has a candidate interface with a document editor to write text and draw diagrams. To draw the diagrams, drawing tools are provided along with support for sketching the diagrams using the stylus. This software requires the candidates to assemble at the exam center as in the traditional exam system. The software first connects to a server at the exam center via wifi connectivity. This server in turn is connected to the centralized server that records in the database all the nearby exam centers data. The architecture is similar to the clickers in distance education [6] as shown in fig 1.

A. Architecture

The system has 4 modules – admin module, faculty module, candidate module and evaluation module.

- Admin Module: In the admin module, the admin has the privilege to modify faculties, add new candidates

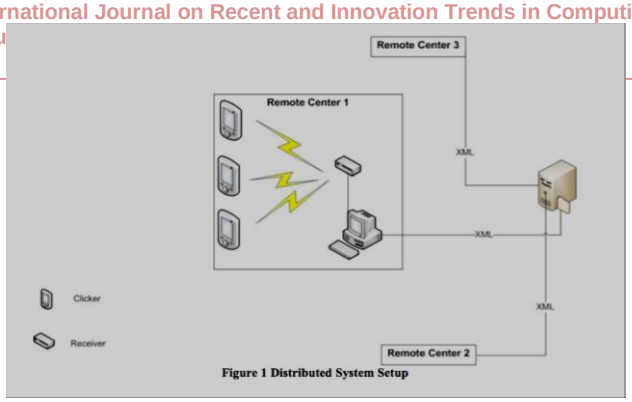

Figure 1 Distributed System Setup

and modify evaluators. Add new courses, and subjects in the courses. Create subject experts in every subject of every course.

- Faculty Module: In the faculty module, faculties will be allowed to upload the question papers based on their expertise subject. Only the faculties with the required number of experience will be allowed to upload their paper. With the question paper the faculty must upload the scheme of solution describing the answers in detail with the necessary diagrams.
- Candidate Module: Candidates will be able to login to the system and answer their examination.
- Evaluation module: The evaluation module will allow the designated evaluators to evaluate the answer scripts. Two faculties will evaluate each paper. If the difference between their evaluation is less than 15marks then the candidate will be awarded with average of the two marks but if the difference between the marks is more than 15 then the paper will be allocated to a third evaluator and the average of two marks out of the three with less than 15marks difference will be given awarded to the student.

B. Implemenation

The candidates need to login to the system with their user id and password. The validation of the candidate finishes only when the invigilator validates the login by entering his/her login id and password. Once the login process is over the system presents with the GUI and the timer is started once the question paper is downloaded into the software. The candidates can read the full question paper and start answering the questions. The candidates can check individual questions by clicking on the question numbers provided in the software interface. The question will be displayed in one part of the interface. The candidates answer the questions in the document editor provided as part of the software interface. The document editor is scrollable hence; the candidate can review or revisit his answers at any given time during the examination.

At the end of the stipulated examination duration, the software automatically submits the answer document to the exam center and the exam center prepares an encrypted file of all the candidates' documents and transfers it to the centralized server. If the candidate finishes answering the examination before the end of the exam duration he/she can submit the document and logout of the software.

The valuation of these documents is done by digital system where the valuator logs into the web based system on a PC and allocates these documents for evaluation. The documents are decrypted on the evaluators PC and presented for valuation.

IV. CONCLUSION

This system will reduce a lot of physical exercise done by the college and universities in conducting and maintaining a strong room for storing the question papers and answer scripts of the candidates. The college is responsible for submitting the answer scripts to the university at the end of the exam. This task is no more needed as the digital papers are submitted into the centralized server directly. If universities or boards have digital evaluation system, then these answer scripts needed to be scanned. With this software this process is no more required. Digital evaluation can be replaced with automatic evaluation of answers by using natural language processing techniques.

V. FUTURE ENHANCEMENT

The system can be made completely digital with digital evaluation system replacing the human evaluators. The system can be developed such that the scheme submitted by faculty at the time of uploading the question paper is compared with all the candidates answer scripts using Cosine similarity and CosInfo algorithm [6]. With this the time required to evaluate the paper will be reduced and a fair evaluation can be achieved.

REFERENCES

[1] Aakash Trivedi, "A relevant online examination system," t4e, pp.32-35, 2010 International Conference on Technology for Education, 2010

[2] Huiping Wang, Ruowu Zhong, "Design and Implementation of Online Exam System Based on Data Mining," icicis, pp.207-209, 2011 International Conference on Internet Computing and Information Services, 2011

[3] Xiaojun Guo; Chanle Wu; Yibo Chen; Ming Xie, "Interactive Items-Based Online Examination System," *Internet Technology and Applications (iTAP), 2011 International Conference on*, vol., no., pp.1,4, 16-18 Aug. 2011
doi: 10.1109/ITAP.2011.6006430
URL:http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6006430&isnumber=6006106

[4] Göhner, Peter and Jeschke, Sabina and Natho, Nicole and Pfeiffer, Olivier (2007) *Design and Implementation of Hybrid Examinations for the Academic Education using Tablet PCs.* In: Proceedings of the 4th IEEE GCC

Industrial Electrical and Electronics. IEEE Computer Society Conference Publishing Services, Los Alamitos, CA. ISBN 978-99901-638-0-3

[5] Bhagyashri Kaiche, Samiksha Kalan, Sneha More, Lekha Shelukar, "Online Descriptive Examination and Assessment System," **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

[6] Krishna A Mohan and Krishna M H M Prasad. Article: A Novel Feature Clustering Algorithm for Evaluation of Descriptive Type Examination. *International Journal of Computer Applications* 98(9):35-41, July 2014.