Research on Online Examination System

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Abstract - Examination System was necessary to separate teaching and testing. A web-based Examination System was developed with Java Web technologies. The system provided the functions, including question management, paper generation and online test. Also the combination of client side programming and server-side programming techniques were used and analyzed.

I. Introduction

Online course examinations are useful to evaluate the student’s knowledge using modern computer technology without any effects on the traditional university course exam that uses Pens, Papers and invigilators.

Online exam can improve the standards of student’s examination whereas the traditional examination system using the pen and paper requires more effort on the part of students and invigilators.

Online examinations are considered an important source for university exam, and the development of network technology polices has given the possibility to conduct the exams online. Thus, the university

Students can benefit from these services.

Examination System was helpful to separate teaching and testing. It promoted teacher to make the lesson planning and teach in the class carefully. It was also an important means of evaluating the teaching effect. Otherwise, it stimulated students to

conscientiously study and attend a lecture, to do their homework independently. Therefore, the Examination System could improve the teaching level by providing better technical support.

Within the Examination System we developed, the teacher could set the score and number of different types of question according to their need. And then, the Examination System generated an exam paper randomly in accordance with the requirements. Finally, the paper in standard format and its answer could be outputted.

Taking into account the development of course content, the Examination System could easily update and add questions, to make the teaching content developing with the technology synchronously.
The Examination System also provided online testing capability for students. Students could log in the system at any time in the campus network, test themselves, understand their learning level, and adjust their learning progress.

University course exams, using the multiple choice questions and allowing the students to choose only one answer from alternative answers or the true/false questions, are traditionally using the paper and pens and they have always been a heavy load for both students and lecturers. Computer new technology has been generally useful to the fields of education. In attitude and tools, the new computer technology gives the lecturer the advantage of an effective assessment.

The traditional way of identifying the students is checking the student card, driving license, resident card or Passport.

The online process and security of the online exam system helps with eliminating cheating. This paper proposes the usage of biometrics which supports the security control, authentication and integrity of online exam process. E-monitoring of students uses finger prints and cameras for preventing cheating and substitution of the original student.

This paper targets the online exam for basic Computer in university courses with students at particular locations, at a fixed time and same questions for all examinees at the restricted physical location of the examinees.

II. Solutions for challenges in Online Examination System

1) Challenge of personal identity:
The special cameras of 360 degree and finger print recognition device will be incorporated for identifying the identity. The camera and the finger print device will be placed at one location in each lab. The biometric scan devices (finger print scanner and camera 360 degree) will check the students from the data base which is collected and stored in the registration department. The 360 degree camera is used for dual purpose of identifying and controlling of examination hall activities. Thus, we are utilizing the same resource for identifying the students.

2) Unauthorized interference of other users in the network using other clients:
To solve this challenge of students entering from different IP’s into the domain and attempting the exam for their fellow students, we propose a system, where we create a domain with the set of students user id’s allocated by the university domain and each instructor will add all the students user id’s of his course; then he will give them the specific permissions like read and write for the specific time of that particular course exam. The students who enter from the different IP’s cannot use the allocated domain and thus the system is secure.

III. Functions of Online Examination System
1) **Question Management**: The functions of this module were querying, adding, deleting, and modifying the questions.

2) **Paper Generating**: The function of this module was randomly generating exam paper according to specified requirements. It was the core function of online examination system. The system randomly extracted questions from the question database in accordance with three restrictions, including question type, difficulty and chapter to generate an exam paper.

3) **Test Online**: Student user could use the function of test online to randomly select a paper or use a paper designated by teacher, and login the system at any time within the campus network, self-test online, and understand learning level.

**IV. Conclusion**

We believe the online format is considerably superior to paper-and-pencil exams for our courses. We have come to the conclusion that the above mentioned challenges can be solved by introducing the following security systems. Using biometrics we overcome the traditional way of checking the ID cards of the students after they start the exam. Biometrics will identify the student as he enters the exam hall.

The IP address check allows as follows:
1-Using online signature or displaying student photo
2-Using fingerprint
3-We can provide more security to identify the students by using online cameras which are more useful than the traditional method of checking the ID cards. Since we check the identity before the start of the exam, there are some more security problems regarding the questions and answers which are for a further research.

This type of online exam system reduces the examination work.
The future scope of this research can be the security of online remote exam systems.

**V. References**


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