Design and Implementation of Online Examination System

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Abstract. With the rapid development of information technology, and network information technology, modern information technology can make the arduous work fast and easily. A complete online examination system can enable students to check the learning results and find their own disadvantages. Therefore, the online examination system can improve the learning efficiency.

Introduction

In current information age, computer technology and network technology are more and more widely used in various fields, and change people's study, work, life and way of thinking, what’s more, they can cause a major change in the field of education\cite{1-2}. The application of computer and network in modern higher education is the needs of the development of modern higher education, but also the reform of the education model to improve the teaching effect and teaching efficiency, improving research and management of the necessary means. Present a trend of development is the use of large-scale item bank computer network test mode, with the popularity of computer network in the production and life, science and technology education, traditional examination papers, answer way and student performance management are undergoing tremendous changes\cite{3}. Therefore, how to make the examination process become convenient, efficient, fast, and fair, is an important subject in the modern education. Network examination system is an extension of the traditional examination room, and you can use the network of unlimited broad space for students to test, plus the use of database technology, greatly simplify the traditional examination process. So the network examination system is an important part of the electronic teaching\cite{4-5}.

Main Research Contents

This paper focuses on the overall development process of online examination system. On the basis of the requirement analysis, the paper discusses the design of the functional architecture of the system. The architecture design is divided into system technical architecture and functional architecture. Technical architecture requires consideration of system steady, maintainability and performance issues. Visual Basic and SQL Server database combination provide very good hardware and software environment for application development and useful of the environment. On the function of architecture analysis. The paper discusses the function of each part of the system. Firstly the system divided into the log in module, examine module, examination module and management module. Secondly, a detailed analysis. In the system modeling, based on core class requirements analysis and architecture design of the system is derived, finally has carried on the design to the database, and lists some of the more important data table. In the implementation process, the interface and flow chart are described in detail. Finally, this paper summarizes the implementation of the system, puts forward the system design proposal and prospect.

Module Design

According to the functional requirements system goals of the online examination system, the actual conditions of the candidates, the administrator of the system, the design of the system is as follows:

Log in module: according to the different user permissions, the module give users different operation. Candidates only allow access to the interface, the administrators only allow to enter the administrator interface.
Candidates module: candidates can modify the password, participate in the examination, query results, if first is log in the system can take the exam, participating in the examination of the candidates can check their own test results.

Examination module: according to their own answer hobbies the examiner can choose the type of title, in the examination process, the examiner function, including change has been submitted to the answer, the system shows the necessary time, time after forcing students to hand in their papers.

Management module: the administrator can maintain the database, set the parameters related to the examination, and manage the user, check the grading operation. The function structure of the system is shown in Figure 1.

![Function structure of online examination system.](image)

**Figure 1. Function structure of online examination system.**

**System Design**

Online examination system is in line with the economic, applicable, convenient and efficient and principle, examination management and the candidates provide a Kaohsiung, convenient and easily test environment, meet the teacher work easy, convenient student examination needs. Specific objectives are as follows:

System design: the use of man-machine dialogue, friendly interface, the use of simple, fast, safe and reliable data storage.

User maintenance: the user to add, delete, modify the function, which the administrator can manage the user's information, candidates can modify their own password.

Exam management: administrators can modify the test time, and the proportion of examination questions set. Only candidates who have not participated in the examination can participate in the examination.

Score query: the administrator can query the results of a student, and in a list of the way to show. Examination can query the personal results, in the form of pop-up dialog box gives results.

According to the function of online test and the actual demand of users, the business process of online examination system is drawn, as shown in Figure 2.
Figure 2. Online examination system business flow chart.

Conclusions
Online examination system is based on Visual Basic and SQL server which can generates questions, paper submission, mark the examination automatically on the network. As long as forming a mature questions database, the system can achieve exam automation, save time and effort. The aim of online examination system is supporting the school in the local area network for online examination, auxiliary examination management, the management of the manager etc.

References