Establishment of Textbook Information Management System Based on Active Server Page

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Received: July 11, 2011 Accepted: July 18, 2011 Published: December 1, 2011
doi:10.5539/hes.v1n2p29 URL: http://dx.doi.org/10.5539/hes.v1n2p29

Abstract

In the process of textbook management of universities, the flow of storage, collection and check of textbook is quite complicated and daily management flow and system also seriously constrains the efficiency of the management process. Thus, in order to combine the information management model and the traditional management model, it is necessary to set up a textbook information management system with the platform of information technology.

This article mainly introduces how to employ the B/S system structure, use the Active Server Page (ASP) technology, set up textbook information management system of universities by taking SQL SERVER 2000 as the background database, set up a variety of functional modules according to different roles in the textbook management, enable textbook management to employ the networked management model and realize high efficiency of textbook information management.

Keywords: Textbook management, Information management, ASP

1. Summary of the Business Flow of Daily Management of Textbook

Management business of textbook mainly includes the three parts of storage management of textbook, collection management of textbook and subscription management of textbook.

In daily storage management of textbook in universities, administers of textbook department should check the textbooks in storage at a regular period of time, add voucher according to corresponding quantity of textbooks in storage, adjust storage data according to the actual increasing or decreasing quantity of the textbooks in storage and compile textbook storage reports in accordance with the condition of the textbooks in storage during an academic semester. This is also an important part in daily management of textbook.

Collection management of textbook happens in the process in which teachers collect the textbook. Textbook administers should send out corresponding textbook in the textbook storageroom according to the information offered by those teachers who collect the textbook and indicate that information on the unified record list of textbook. In the meantime, students should also fill in the record voucher with the class as the unit in the process of collecting the textbook and finish the collection process of textbook.

Textbook subscription management mainly means that textbook management personnel collect the information about the textbook required by teachers, contact with the publishers according to the information provided for subscription of the textbook and then notify corresponding teachers to collect the textbook when the textbook is put into storage and cancel the textbook that has not been collected if the time limit is exceeded.

Daily management work of textbook is relatively complicated and lacking in support of information flow in terms of operation, which reflects redundancy and which is unhelpful for informatization construction in the textbook management field of universities. Thus, it is necessary to set up an information system to adapt to textbook management requirements of the universities.

2. Establishment of Textbook Information Management System Based on ASP

Considering the status quo of textbook management in universities and based on ASP dynamic scripting language and SQL SERVER database of network programming, we apply information management theory into daily textbook management and analyze the functional module to set up a textbook information management platform.

Management of functional module is fulfilled in the form of ASP dynamic webpage and constructs the client-side

login window through B/S that verifies user name and password. The module sets up multiple administrators according to different functions and the administrators can login in to conduct daily management on corresponding data. The major functions include the following several aspects. (See Figure 1)

2.1 Design of Textbook Storage Management Module

This section mainly sets up daily textbook storage management database and administrators can conduct daily management and maintenance on textbook in storage through ASP webpage.

2.1.1 Textbook storeroom and bookshelf information management

For convenience of administrators to conduct accurate search in textbook information, textbook administrators can give a serial number to all storerooms for storage of textbook and all bookshelves in these storerooms. Textbook administrators give a relevancy number to the bookshelves in all the storerooms in accordance with the storerooms, realize the secondary classification management of "storeroom-bookshelf" through database, add background information about the bookshelves and storerooms that are recently added and make revisions on information change of storerooms and bookshelves. If a certain storeroom or bookshelf is no longer used, its information can be deleted. Textbook administrators bind together textbook storage storerooms and bookshelves and make a selection by means of the secondary drop-down list to avoid the fact that each time information about the storage place has to be input in the process of registering and putting textbook into storage.

Textbook information administrators can make adjustment regularly on bookshelves and storerooms and arrange storage place for textbook according to realistic conditions. If textbook of an entire storeroom needs to be adjusted, it is only necessary to alter the storeroom information that needs to be adjusted, which is enough to adjust information about textbook that is put in storage within this storeroom for convenience of storage management of the textbook.

2.1.2 Textbook storeroom management

This section mainly deals with management of information of daily textbook in all bookshelves and storerooms. Textbook administrators can login in to manage information of books in each storeroom and bookshelf, quantity of textbook in storage and distribution of storerooms and bookshelves and conduct operation on addition, modification and deletion of information.

As for storage of textbook at the beginning of each academic semester, it is necessary to input the basic information of textbook through the system, such as, title of textbook, publisher, unit price of textbook, course information and class to use the textbook, etc. The drop-down list can be used to select the storeroom and bookshelf for storage of the textbook. We can select "storage" in the column of "condition of textbook", which indicates that the textbook has arrived and been put in storage. Textbook administrators can also inquire about the storage position of textbook according to the above information. According to requirement of the storage, textbook administrators can alter the storage position of the textbook which requires to modify the storage position of the textbook within the platform of the system.

2.2 Design of Textbook Send-receive Information Management Module

2.2.1 Textbook collection information management

At the beginning of an academic semester, collection of textbook is an intensive task of textbook administrators and the corresponding management is to set up corresponding module on the information management platform.

After the textbook administrators have confirmed information about teachers who collect the textbook, they inquire the storage position of the textbook within the system to confirm quantity of the textbook. After they make sure the information is correct, the textbook administrators change the condition of the textbook from "storage" to "collected" and fill in the names of teachers who have collected the textbook in the textbox of information about the teachers who have collected the textbook. All textbooks that have been collected can be inquired through the system platform. Likewise, when students collect the textbook they need, the above flow is repeated and the students need to fill in relevant information about their class.

Establishment of the above functional module finishes the information management in the process of collecting the textbook, which not only realizes quick search of the storage position of each category of textbooks, but also enables each record to be more reasonable, avoiding occurrence of chaos and low efficiency and enhances the working efficiency of the entire process.

2.2.2 Textbook send-receive report

In order to make the information management more institutionalized in the process of textbook send-receive, it is

necessary to compile textbook send-receive reports regularly so as to make daily information archive. Hence, textbook administrative staff need to set up daily textbook send-receive report management to reflect usage and collection of the textbook within an academic semester.

In information management, combination of ASP Application module with Microsoft Excel can generate an Excel report about information of the textbook that are in storage at an academic semester so as to make the compilation of the report simpler. All information about the textbook at the semester can be output circularly through the sentence of do… loop in ASP, which can enable textbook administrators to generate an Excel report and have a general mastery of the send-receive information of the textbook within the semester, which is convenient for information archive.

2.3 Design of Textbook Subscription Information Management Module

At the end of each semester, the amount of work in subscription of the textbook for the following semester is great. The traditional management pattern is quite complicated in statistics about subscription information and even if the Excel is used for statistics, the textbook administrators still need to integrate multiple Excel tables. Therefore, teachers and textbook administrators need to cooperate on a single platform and conduct unified operation and processing on information with different roles and user accounts.

2.3.1 Subscription information management

2.3.1.1 Submission of textbook subscription information

Textbook administrators need to make a statistics about curriculum of the following semester and add information about the curriculum and teachers in the database according to the teaching task. Teachers can login in the teacher client-side to submit information about textbook to be used for teaching task courses in the following semester, such as, time of textbook, ISBN of textbook, publisher and class to use the textbook and so on. After the submission is finished and before the textbook administrators verify the information, teachers can make any revision until the information is correct and they can make a choice for attribute of the textbook so as to confirm whether all teachers and students have subscribed the textbooks they need.

2.3.1.2 Summary of textbook subscription information

Textbook administrators login in through the administrator client-side backstage, manage the textbook subscription information which teachers fill in, examine and verify the textbook subscription information and notify those teachers accounts who haven't filled in the information or have not filled in the information according to the requirements to finish filling in the textbook subscription information or revision information. After all information has been examined and verified, the textbook subscription information is circularly read out from the database through Application module and an Excel form in a designated format is generated for administrators to archive the information.

2.3.2 Textbook order management

After the information of textbook subscription is collected, textbook administrators need to contact with the publishers and the major management content includes the quantity, category and total amount of the textbook subscribed in each publisher. Hence, it is necessary to further classify the textbook subscription information through ASP to enable textbook administrators to have a general and clear mastery of the information of all publishers and generate a textbook order with a publisher as one unit.

Establishment of textbook order can be managed through ASP recordset, namely, rs.recordcount function and the data read out are the information of textbook subscription. Before the textbook administrators fill in information of subscription, they may firstly set up an information form about publishers so that teachers may select by the drop-down list in their filling in textbook information and also a textbook order can be generated through classification of publishers.

By establishing the textbook order, the textbook administrators can then have a general management of the total quantity of textbooks that are subscribed in all publishers from the background management interface, total expenditure and specific and relevant information, which helps them to arrange expenditure and arrange storerooms and bookshelves for storage of textbooks. After the information form of publishers is established, relevance can be made about the common field "information of publishers" between publisher information form and textbook subscription information form and the information can be read out circularly in the form of secondary classification. At the time of reading out the information circularly through the sentence of "for…next", the total amount of textbooks subscribed in related publishers is calculated and the total amount of textbooks subscribed in a certain publisher is finally aggregated.

2.3.3 Textbook information inquiry

In order for the teachers and textbook administrators to inquire the real time information of textbooks, we need to set up a multi-function textbook information inquiry system and retrieve the textbook information by different means. We may set such inquiry patterns as “according to title of textbook”, “according to publishers”, “according to names of teachers”, “according to subscription date” and so on. Teachers may inquire the condition of textbook they are to subscribe by logging in their account so as to collect the textbook they need with no delay.

3. Design of Security Module of Textbook Information Management System Based on ASP

A secure operation environment is required for establishment of the above textbook information management system. Hence, the textbook administrators need to design security of multiple parts of the system that has been established so as to ensure protection on data information and successful daily management.

3.1 Filtering of Security Information of Form

The form is the frequently-used module by the network office system in daily management. Since there are several times of submission of the form, a lot of vulnerabilities might be attacked by the hackers, which further makes the data in the process of submitting the form unable to be normally stored and modified. Or the hackers may modify the submission parameter of the form to directly change and delete the database content. All the above may bring great damage to the information system platform. Therefore, it is a must to set up a secure information module of the form so as to ensure information security in the process of submitting the form.

External submission of the form is caused by unconcealed form and since the attribute of submission action of the form can reflect the page of submission through HTML. Thus, the hackers can construct a form from outside and launch attack on corresponding page, namely, to submit the SQL order to the page through the action parameter of the form that is submitted from outside to achieve the purpose of destructing the structure of the form. Therefore, external submission can be prohibited by means of constraining the server form.

3.2 Encrypted Form Module

In order to prevent hackers to acquire information in the ASP page, it is quite necessary to encrypt some fields in the page. With encryption, even if the encrypted information is embezzled by hackers, they are unable to decrypt through the corresponding procedure and acquire the initial data.

The most common encryption is to encrypt the 32 bits of MD5 on the password of a login user. This sort of encryption pattern filters the field information of data as 32 bits of random digits and letters and enters these 32 bits of digits and letters through ASP sentence into the database. Thus, even if the database is downloaded or decrypted, what the hackers will get is 32 bits of random digits and letters and they are unlikely to get the real value of the field and information of the data is protected.

4. Vision to Improve Textbook Information Management System

Textbook information management system enhances the working efficiency of textbook management and also reflects features of information management. This system can almost ensure satisfaction of the functions in application, but there are still some improvements to be made in actual operation.

4.1 Database of Textbook Subscription Is Open to Be Established

In the process of teachers selecting textbook, they need to inquire the basic information about the textbook according to the catalogue of textbook subscription. Hence, more work is done in inquiry of information. Furthermore, information of books in catalogue of textbook subscription each year is different or the publishers have changed the publication information of the textbook. Sometimes, it may occur that a certain category of textbook is no longer published. Textbook administrators ought to set up textbook information base so that teachers only need to archive the simple information of the database when they fill in basic information of the textbook.

However, it is not realistic to set up textbook information database only by system administrators. Therefore, textbook administrators need to cooperate with the publishers, input or add information in the form of electronic data or input the optical disk information about the data of subscription at that time offered by the publishers in the SQL database. The publishers can manufacture an Excel form or Access data form according to the catalogue of subscription each year. Then, it is only necessary for the system administrators to input the information of the form to the backstage SQL Server database, which is enough for teachers’ inquiry in subscription of the textbook.

4.2 Database Needs to Be Backed Up and the System Needs to Be Upgraded at Regular Intervals

With increase in the quantity of textbook information management within the universities, it is necessary to store and process the large quantity of data. Hence, it is quite necessary to update the database at regular intervals.

Textbook administrators may select large-scale enterprise database, such as, Oracle, etc., to increase demand on storage and processing of data. As for former data, they can resort to the ASP Application module to generate a report to keep in the archives and back up and put in storage the former textbook subscription information.

At the same time, with rise of the quality of information processing, we can make a choice for compilation of language. For example, we can change ASP into JSP or PHP to make the data processing of the page more rapid and convenient and higher in security. Considering the increase in the demand function in textbook management, it is necessary to further improve the textbook information management system.

4.3 Server Needs to Be Managed and Maintained at Regular Intervals

In order to improve the storage environment of the server, textbook administrators may select the server with higher efficiency and security to store the data and conduct daily management on the operating environment of the server to ensure security of information data storage. They ought to back up in time data that are stored within the server of the platform, clone the real time data through FSO, partition singly for back-up in the standby hard disk to avoid loss and destruction of the information, check regularly whether the root directory document produces fragment for data information so as to clear up the information fragment in time and enhance the utilization efficiency of data storage hard disk.

In the meantime, daily network maintenance should not be neglected and network equipment, interface equipment and all sorts of consumable items should be renewed and examined at regular intervals to ensure normal operation of the server. Obligations of those who are in charge of maintenance should be specified and they should regularly write a log in the process of information processing, examine and verify the maintenance logs one after another to ensure the security and stability of information management and operation environment.

5. Conclusion

Establishment of textbook information management system based on ASP mainly offers convenient operation and reliable information storage management for the process of textbook information management in universities. Establishment of such an information management system can enable the textbook send-receive information, textbook subscription information and textbook subscription report management to be effectively administered, and enable textbook administrators, storage administrators and teachers to divide labor and cooperate in information management, which has great promoting effect on informatization establishment of textbook management in universities on the basis of ensuring security of managing textbook information network in universities.

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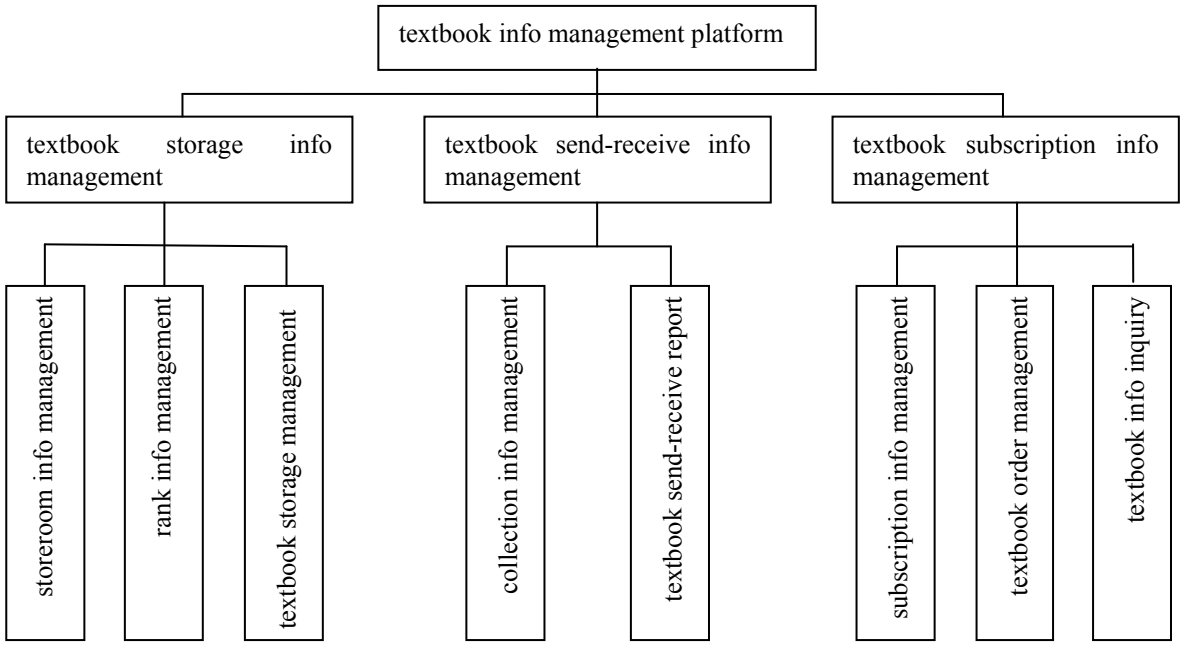
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Figure 1.