Design of College English Guiding Resources Information Management Platform Based on MVC Architecture

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Abstract:The English guiding resource management system is the container of resource construction and the basis for the realization of education informatization. Aiming at the limitations of traditional educational resource platforms, an English teaching resource management system based on the MVC model was designed. The system is based on J2EE platform and MVC framework application development, using Struts framework design, and using MySQL as the back-end database. The article first introduces the main technology of the system design, then carries on the in-depth function module design to the system, and gives a detailed description of the realization of the main function modules of the system. On the basis of the system design, using the object-oriented software engineering design model, the English teaching resource management system was realized, and the management efficiency increased by 7.2%.

Keywords: MVC Architecture, Information Management, Intelligent System, College English Guiding, Smart System

1. INTRODUCTION

In order to implement the "Opinions on Implementing the National Demonstrative Higher Vocational College Construction Plan and Accelerating the Reform and Development of Higher Vocational Education" by the Ministry of Education and the Ministry of Finance, deepen the teaching reform of higher vocational education, strengthen the construction of majors and courses, and promote the co-construction of high-quality teaching resources Sharing and improving the quality of talent training. In 2010, the Ministry of Education launched the construction of a teaching resource bank for higher vocational education (hereinafter referred to as "resource bank"). In 2012, the Ministry of Education proposed to promote the construction of a shared professional teaching resource bank for higher vocational education, jointly build a professional teaching resource bank with industry enterprises, and emphasize the resource co-construction and sharing mechanism and talent co-education model between government, school, industry and society [1-7].

In 2016, with the development of "Internet +" and to promote the comprehensive application of information technology in the field of teaching reform and teaching implementation of vocational education, the Ministry of Education proposed to realize the "ability to learn and assist teaching" through the construction of high-quality teaching resources. The goal further clarifies the direction of the construction of the professional teaching resource bank of vocational education, and brings greater development opportunities for professional construction. In order to realize the real-time sharing of English teaching resource information, the widely used memory architecture is adopted to design the English teaching resource storage module MVC. Storage The storage in the mechanism model model is used to store English teaching resource document information, including materials such as documents, teaching courseware, and real exercises MVC. The stability and completeness of the entire system function depends on the success of the system requirements analysis. In the requirements analysis stage, the requirements analysts first need to determine the functional requirements of the software to be developed, and abstract them into objects and implement modeling. College English teaching resource library and learning platform is an information system for students, teachers, and system administrators. Student users can access, browse course information, leave messages, reply to information, and conduct online discussions with a browser through the Internet; teachers and administrators Course information, messages, and reply messages can be posted through this system; system administrators can easily structure courses, learning content, and management systems through this system. Using J2EE, ASP.NET or PHP to develop the MVC model system just solves these problems. MVC fundamentally separates the HTML language and the program code, so that the front-end web designer and program developer "see each other's job", low coupling the nature makes the system more robust, and the advantage of code reuse greatly improves the efficiency of system development. After that, you can manage personal information and course information according to your own authority, and you can also interact with students using guestbooks, online forums, etc.; after the system administrator enters the user number and password for identity authentication, you can enter the background interface to perform Learning materials management, user information management, forum management and news management, etc. According to the target users, the teaching resource library and learning platform include two parts: the front desk of the website and the backstage of the website. The front desk of the website is for teachers and students and it is the display part of the website; the back of the website is the platform for system administrators to manage the content, and it is the maintenance part of the website. Client/Server (Client/Server, C/S for short) and Browser/Server (B/S for short) are currently two commonly used platform modes in management information systems. However, with the rapid development of Internet technology, the current basic education resource library is based on the Web management system of the B/S platform model [8-16].

We investigated 20 basic education resource libraries connected to the Internet and found that Web-based development platforms mainly include J2EE (mainly JSP (Java Server Pages)), ASP (Active Server Pages), PHP (Professional Hyper Text Pre Processor), ASP.NET etc. The respective ratios are 2:4:3:1. The resource library system developed by ASP, JSP and PHP strongly couples HTML code and program statement together, it is difficult to separate a separate business model, and it is very difficult to maintain and debug [17-21].

2. THE PROPOSED METHODOLOGY

2.1 The College English Teaching Resource Management

The teaching resource storage module of the design system should create a folder according to the type of media material, and then store the English teaching resource information and the documents describing the resource information in the corresponding folder MVC. The storage module structure of English teaching resource information. The application of the integrated management system of English teaching resources information needs to go through two stages of development and implementation, and the requirements for the operating environment in each stage are different [22-24].

Before system development, development software suitable for system operation must be installed in the development environment built by the platform MVC. The system uses SQLServer2005 database as a storage platform. The system must be combined with the use of code development tools and the installation of data storage software in the operating environment to facilitate the debugging of the system's operation. In the development environment of the system, a browser that conforms to the system configuration needs to be installed, and in addition, the corresponding development plug-in should be installed in the browser. The functions of the database in the system mainly include querying, adding and deleting data information, etc., and can also jump to the background database of the system to access the required access data. After analyzing the system functions, the entities of the system can be set as users, administrators, English teaching resource information and information content. The relationship between each entity. The teaching resource library and learning platform are composed of ten modules, each module accesses different tables in the same database, and the modules are independent and closely connected to each other.

These ten modules are divided into two parts: foreground management and background management. Front-end management includes five modules: course introduction, teaching resources, homework, online testing, and teaching evaluation; back-end management includes five modules: course management, teaching resource management, homework management, online testing management, and teaching evaluation management. (1) Course introduction module: browse course nature, course positioning, course standards, teaching methods, teaching methods, assessment methods, etc.; (2) Teaching resource module: browse teaching plans, teaching courseware, teaching videos, listening materials, exercise sets, reference Information, etc.; (3) Homework module: homework query, registration, online completion of homework, grade browsing, etc.

2.2 The MVC Architecture

MVC is the abbreviation of Model, View and Controller, and its purpose is to realize the division of functions of the Web system MVC. The Model layer implements the business logic in the system, which can usually be implemented with JavaBeans or EJBs; the View layer is used to interact with users and is usually implemented with JSP; the Controller layer is the communication bridge between the Model and the View, and the course resources are resources. The core content of library construction, high-quality professional teaching resources provide professional and technical support for students' independent learning. Therefore, the curriculum resource library focuses on the sharing and development of educational resources, starting from professional core courses, highlighting the curriculum framework of "language knowledge" + "business skills", focusing on the construction of business English practical writing, business English conversation, and cross-border e-commerce English. International Marketing English, Comprehensive Business English and other online courses. It can dispatch the user's request and select the appropriate view for display. At the same time, it can interpret the user's input and map them into operations that can be performed by the model layer. The management of the MVC mode makes the code division clear and reduces the degree of coupling. The realization of each level is independent, and there is no need to care about the specific realization of other levels, only the flow of data.

The teaching resource management system based on the MVC mode uses Hibernate, Spring, Sturts2, and JavaScript as the core technologies to implement the MVC mode MVC. Hibernate is equivalent to the Model layer in MVC. Hi bernate is an open source object-relational mapping framework that can be applied to any occasion where JDBC is used. It can be used in both Java client programs and Servlet/JSP Web applications. The most revolutionary thing is, hibernate can replace CMP in the J2EE architecture using EJB to complete the important task of data persistence. Spring is equivalent to the Controller layer in MVC, and it also manages Hibernate and Struts2, making the three frameworks merge into one. The application of Spring makes complex applications simple, improves the testability of the project, and greatly reduces the degree of coupling at the same time MVC.

2.3 The Application of MVC Framework in College English Teaching Resource Information

The system chooses the MVC (Model-View-Controller, namely model-view-controller) design mode, which compulsorily separates the application input, processing and output, that is, the application is divided into three core modules: model, view and Controllers, they respectively undertake different tasks, as shown in Figure 2 shows the respective functions of these modules and their interrelationships.

In the MVC design pattern, the model responds to user requests and returns response data, the view is responsible for formatting data and presenting them to the user, business logic and presentation layer are separated, the same model can be overloaded by different views, so the code is greatly improved Reusability. The development of the college English teaching resource library and learning platform combines independent learning with collaborative learning, which helps students to carry out independent and collaborative learning outside of class. The teaching resource library and learning platform focus on the combination of English knowledge and professional knowledge in content design. In addition to providing English A, B and 4, 6 simulation test questions and

simulation test questions, English learning website URL, English learning skills and other large amounts of English learning In addition to resources, it also provides professional-related English learning resources, aimed at cultivating higher vocational students' English language application skills and professional skills. Students can use these resources for self-learning after class. In addition, in the functional design of the teaching resource library and learning platform, it provides online dictionaries, downloads of commonly used software, etc., opens up English BBS, provides interactive communication space for students, and provides services for students' online collaborative learning.

The view is the interface that the user sees and interacts with. The view displays the relevant data to the user and can receive the user's input data, but it does not perform any actual business processing; the model is the main body of the application, and the model represents the business data and business logic, a model can provide data for multiple views; the controller accepts user input and calls the model and view to complete the user's needs. Because once the system design and development later find that the framework used by the entire system is problematic or inappropriate.

3. CONCLUSIONS

This paper proposes the hardware design and software design based on the comprehensive management system of English teaching resources information, and conducts simulation test analysis. The experimental results show that the English teaching resource information integrated management system based on MVC can speed up the sharing of English teaching resource information. This paper proposes the hardware design and software design based on the English teaching resource information integrated management system, and conducts simulation test analysis. The experimental results show that the English teaching resource information integrated management system based on MVC can speed up.

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