



Web Based Course English Online Learning System

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Abstract. The web-based course English online learning system is a computer-based training platform, which uses the Internet to provide courses. The main difference between web-based classroom and traditional classroom is that students can use any device to access their courses from any place and at any time. A web-based course (WBC) has been used by the University of California, Berkeley as an alternative to classroom teaching methods, in which students can obtain all the resources needed for learning through the Internet.

Keywords: Online learning · English teaching · Web system development

1 Introduction

Based on multimedia computer technology and network communication technology, network education has changed people's previous learning and life style. It has become a milestone in the development of modern education in the Internet, and has overturned the traditional education mode and teaching concept to a great extent. At the end of last century, relevant state departments approved Peking University, University of Electronic Science and technology, Central University of Finance and economics and other colleges and universities to develop modern teaching. At present, hundreds of colleges and universities across the country have gradually established their own online education colleges.

English course online learning platform can be combined with published course resources to promote integration. Like some learning systems, students can log in several times to learn different courses, which brings inconvenience to students' operation. The integrated management makes the teaching system truly meet the teaching requirements of the school. It does not need to switch back and forth between several systems when students log in, which reduces the operation complexity of students and saves students' learning time [1].

Online online teaching of English course is to publish teaching materials to the network platform for users to download and use, and provide an exchange platform for

timely communication and discussion. The basic links of English course online course teaching include: publishing teaching contents, English course online learning, English course online test, course Q & A, English course online test, etc. it is very hard for most teachers to complete so much work. English course online education platform enables teachers to easily complete a lot of work without spending a lot of time and energy, which promotes the benign development of education. The online teaching of English course has completely subverted the traditional teaching mode. Teachers have changed into helpers and guides for students' learning. Students occupy a dominant position in learning. Teachers and students are also teachers and friends. They can chat and discuss freely without affecting other students.

Web system is a system composed of HTML web pages opened in the browser. In ancient times, HTML was a static text document. Where to lie quietly, if necessary, give a unified resource path © to locate the HTML, and then send it to your browser in the form of text by HTTP server. Later, people are no longer satisfied with this rigid resource and want something that can interact. They hope that the requested content can be updated at any time. At that time, the unified resource path corresponds not to a static file 9, but to an executable program that can dynamically output HTML content. In the early days, it was implemented with programming languages such as C and Perl, But later, as the demand became more and more, C/C++ and Perl could not meet it, so there was a comprehensive and perfect programming language such as PHP and Java to be responsible for the output of web pages. Therefore, the web system based on Java is the back end of outputting HTML, which is realized in Java, not PHP, ASP or others [2].

This paper analyzes the user needs and business needs of the English course online learning platform, studies and studies the development tools and key technologies of the modern network teaching system, and realizes the basic requirements of each functional module of the English course online learning platform based on B/S mode according to the matters needing attention in the actual development process of the application software and the knowledge of software engineering and theory.

2 Related Work

2.1 Web Development

The programming languages used in the development of Web front-end mainly include JavaScript, HTML and CSS. As well as a number of excellent web front-end 3 frameworks derived in recent years, the efficiency of Web front-end in application construction has been significantly improved. In addition, with the emergence of nodejs, more and more web front-end developers begin to enter the field of server-side programming, and even play the role of Web full stack development in some projects. The main languages used in Web back-end development are Java, PHP, python, etc. of course, with the rise of nodejs, it has also become another choice for server-side development in recent years. At present, nodejs is more for web developers [3].

Web application development is based on browser, and the browser itself has solved the problem of multi platform compatibility, so web development generally does not need to consider the compatibility problem faced by cross platform. However, there is another kind of problem that needs to be solved in the field of web development,

that is, the problem of multi terminal compatibility and integration. Although the web is based on browser and there is no cross platform problem, the rapid development of multi terminal is a new problem in the field of web development, that is, PC terminal, mobile terminal and popular small program terminal.

Whether it is desktop application development or web application development, from the device side, it can be divided into PC side program and mobile side program. The support and compatibility of these two ends are the problems that must be considered and solved under the two development modes. For the development of a desktop application, it is necessary to consider compatibility with window platform, Linux platform and MacOS platform on the PC side; In the mobile terminal, compatibility with Android operating platform and IOS operating platform should be considered. Figure 1 shows the web application development device side.



Fig. 1. Web application development device

A web application development also needs to be compatible with PC terminal, mobile terminal and individual Internet products. It needs to consider and deal with the compatibility problems of different browsers [4].

The mixed application development of nested web and the increasingly mature PWA application development undoubtedly promote the development of the web field more widely, and really make the web enter the all-round development field. Even some traditional desktop applications are increasingly close to the web.

2.2 B/S Mode

The main parts of B/s are local browser and remote server host. It is a mode widely used in network application software in recent years. Components are required to have independent functions and high reusability. It has become the mainstream mode 0 “in

the era of Web 2.0. This mode unifies and simplifies the use of local clients. Developers can focus on the functional modules of the server, and users can get remote services only from the browser, In this way, you can easily browse and use the web system”, compared with C/S mode, it is much more convenient. Generally, it only has one-time investment cost and has strong operability. For users, it can reduce the number of software installed on the computer [5]. The management personnel of the client only need to do the hardware maintenance, and only a few functions will be implemented at the front end, which provides convenience for later maintenance and makes the development process time-consuming The consumption of space and economy has been greatly reduced.

PHP is a language that junior programmers can use to write effective programs. Moreover, PHP is a member of the open source family. All developers can adopt or improve this technology without any consumption, so as to promote the advantages of PHP in security and performance.

PHP5 strengthens the concept of object-oriented programming, so that PHP can also build MVC mode application system. Because PHP is easy to learn, using PHP to build MVC application system is also more advantageous than Java. Especially for small and medium-sized enterprises, it is particularly suitable for the national conditions of our country and can help small and medium-sized enterprises use it to promote their informatization. Finally, the Zend engine transmits the execution result of the code to the kernel, and then sends it to the connection between Apache and PHP, and the processed result will be sent to the client. Figure 2 shows the underlying working principle of PHP:

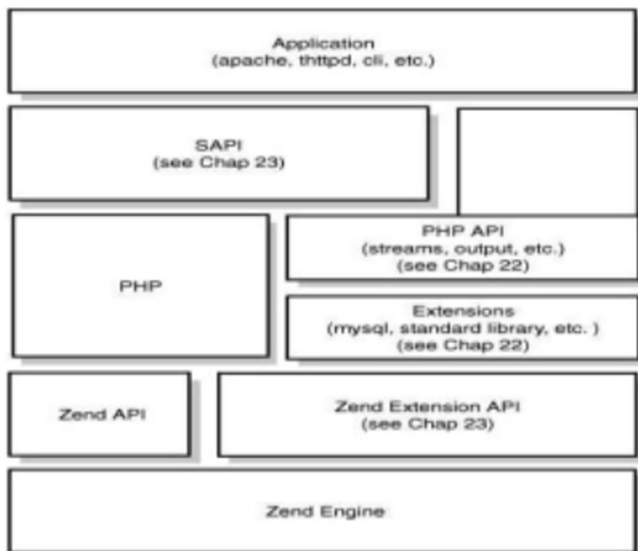


Fig. 2. The underlying working principle of PHP

3 Course English Online Learning System Based on Web

When analyzing the system, we should first analyze the users. Only by clarifying the users who use the system, what services the users have, and what functions the users want to achieve through these services, can we better carry out the system design, and the system design can better meet the needs of users [6].

Traditional teacher lectures have various constraints. Students come to the class within the specified time and complete the classroom tasks before they complete a study. From the perspective of teachers, it is also not conducive to improve the efficiency of teachers. Teachers also need to spend a lot of time correcting homework and preparing lessons, but the students' academic performance has not improved much. Therefore, we need to develop a system that can be used anytime and anywhere, provide it to schools, promote it to teachers, and let everyone make more efficient use of the school's educational resources to improve their grades.

During the design and implementation of English course online learning system, the functional modules of the system are reasonably divided according to the principle of software engineering:

1. Relative independence. It means that for the convenience of use and maintenance in the future, each subsystem should be able to complete certain functions independently, and interfaces should be used to realize communication with each other, in line with "high cohesion and low coupling" [7].
2. Low data redundancy. Minimize the use of cross information between various functional modules to ensure the safety, stability and integrity of the software.
3. The subsystem shall meet all functions required by various users and have good interface design. In order to ensure the rationality and security of all aspects of the system, according to the functional requirements of various users using the system, it should include the following subsystems: user experience function module, English course online learning function module, English course online question bank examination function module, video on demand function module and website management function module. They are relatively independent systems, but they are not completely isolated, and there are certain connections on some function points. As shown in Fig. 3, the structure of each functional module and subsystem of English course online learning system is shown.

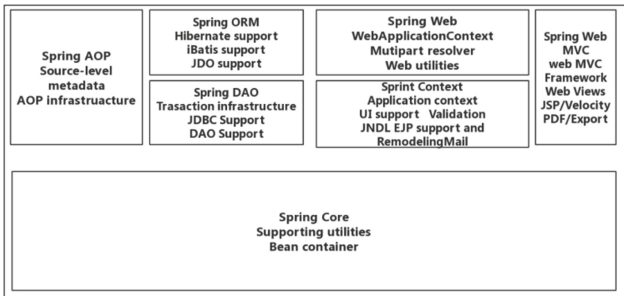


Fig. 3. The structure of each functional module and subsystem of English online learning system

The service objects of the online question bank examination function module are teachers and students of the system [8]. The function module can provide student users with functions such as taking the examination, consulting the examination analysis and my test paper, and provide teacher users with topic management (topic types support single choice, multiple choice, materials, applications and other topic types), intelligent generation of test paper according to difficulty and course scope. The functions of teaching management, such as examination paper marking, examination paper batch import, etc.

The use object of the website management function module is limited to administrators, and other users cannot log in. The subsystem mainly provides the system administrator with the functions of managing students, teachers, teaching resources, test papers, latest information, messages, questionnaires and other management and communicating and learning between students and teachers.

4 Database Design

Before creating a database, you must fully understand the tasks that the database needs to complete. If the paper-based or manual information system is to be replaced by database, most of the required information can be obtained from the existing system. It is necessary to communicate with relevant personnel of the system in order to find out what they want to do with the database and what functions the database needs to have [9]. It is also important to clarify the functions of the new system and the problems, limitations and bottlenecks of the existing system. Collect copies of customer statements, checklists, management reports, and any other documents that are part of an existing system because they are important for designing databases and interfaces.

The database structure affects the operation of online learning system to a great extent, and is also closely related to the security of data information and the difficulty of exception handling. Therefore, the database design should comply with the following guidelines.

(1) Easy data management

The design of database tables and fields must take the actual application as the reference to complete the model, in which the static and dynamic information should be distinguished to find the similarities and differences between all information and their relationships to the greatest extent, so as to bring convenience to future management and maintenance.

(2) Easy program call

The design of the database must conform to several authoritative paradigms, and save the data with the same or similar functions together, so that the debugging or debugging of the program is more convenient and promote the development progress of each functional module.

(3) Facilitate data recovery

Data and log files are critical. Try to save these important information. In order to ensure the high security of data and information, the database should be backed up regularly.

When there is an error or failure in the database system, the problem can be found by checking the stored log files, and the difficulty of data recovery is greatly reduced. As shown in Fig. 4, the network protocol interaction at the front end and the file storage at the back end are all mixed.

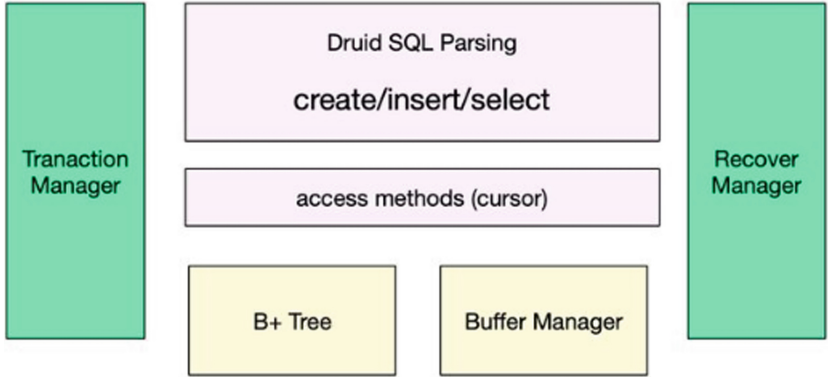


Fig. 4. Overall structure

The final storage structure is of course the classical B + tree structure. Of course, the conversion between B + tree and file system block block is carried out through buffer (page) manager. Of course, in order to complete the transaction, we must also use the wal protocol, which operates through the logmanager [10].

Freedom uses index to organize tables, and uses druidsql parse to translate SQL into corresponding index operators for corresponding semantic operations.

5 Conclusion

This paper introduces the design idea and implementation method of English online learning system based on Web The system can facilitate students' autonomous learning and testing, and get feedback information in time, so as to adjust the learning progress in a planned, step-by-step and systematic way and improve the efficiency of online learning; At the same time, teachers (or administrators) can analyze and count students' scores through the system to provide targeted guidance for students The next step is to further improve the statistical analysis function of the question bank and test questions, guide and update the question bank through analysis, make the question bank more scientific and effective, and improve the quality of test paper generation and the effect of online learning.

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