

Design and Implementation of an Online College Ideological and Political Education Platform Based on .NET Technology

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Abstract—The emergence of network technology has brought great challenges to the traditional ideological and political education approach. Now many colleges and universities are making all kinds of attempts in online ideological and political education. This paper designs a .NET-based online ideology and political education platform. By combining the .NET technology and C# language, this paper realizes the various functional modules of the ideological and political education system platform; based on the functional analysis method, it establishes a requirement model for the system platform; under the guidance of relevant database theories, this paper designs the conceptual structure and logical structure of the platform database. The platform ultimately established involves ideological and political education and knowledge, provides students with services and allow them to participate and have fun, which is not only a network space for students to improve their ideological and political consciousness, show their creativity and release psychological pressure, but also an online platform for the good interactions between teachers and students.

Keywords—ASP.NET; C# Development Language; Ideological and Political Education; Online Platform

I. INTRODUCTION

At present, with the Internet going deep into all corners of our social life, college students who are in lack of awareness are vulnerable to the negative influences from the outside world, bringing great challenges to the college ideological publicity work (Grove et al., 1974; Norrel, 2003; Engel, 1984). In order to provide college students with good ideological and political education, we must resort to information technology to broaden our education approach, innovate new ideological and political teaching models, build online ideological and political education platforms, change the previous cramming method of teaching and move the classroom to a broader network platform to increase the interactions between teachers and students and bring them closer (Loss, 2004; Schwamm, 1980; Schiller, 1992). Thanks to the flexibility, timeliness and liveliness of the Internet, the online education platform can help strengthen the ideological and political education in colleges and universities, give the right ideological and political guidance to students, improve students' ideological and political awareness and at the same time achieve

humanistic education and allow us to explore an effective way for ideological and political education reform [1]

II. BASIC THEORIES FOR THE PLATFORM DESIGN

A. ASP.NET 2.0 development system

ASP.NET is an editing framework that builds on a common language runtime. It is used to construct feature-rich applications through the server (Sutton, 1997; Baturay and Bay, 2010; Valderrama et al., 2005). After the ASP.NET 2 is completed, it helps improve the productivity of R&D personnel, and adds more superior features to expandable functions, basic support and administration, greatly improving the framework performance (Choi and Bakken, 2010; Halpem et al., 2008; Mei et al., 2007).

B. C# development language

C#, developed based on C+ and C++, has very distinctive characteristics as one of the powerful programming languages, it is modern, simple and safe. Not only can it be used for rapid development just like Visual Basic, but it is also featured with the flexibility of C++. C# possesses the features of C and C++ and also has a lot of similarities with Java. Compared with C++, it is simpler and more convenient in terms of namespace, exception handling, class, method overloading. It has directly simplified some features of C++ -it no longer has multiple inheritance and multiple kinds of templates and does not adopt the complex thinking of C++, so its application is simpler and the error rate is smaller (Choi and Bakken, 2010; Frush et al., 2006; Öztürk and Dinç, 2014), and the use of C++ complex thinking, and the application is more convenient and less error rate (Choi and Bakken, 2010; Frush et al., 2006; Öztürk and Dinç, 2014). What is more, the programming workload is significantly reduced, and at the same time, it has a number of additional features, such as version control, type safety, garbage collection (garbage collect) and so on, and all functions are aimed to allow the research and development of component-oriented software. [2]

C. Web Service

Web service is an integrated architecture that realizes its features on the Internet and enables multi-OS, multi-language,

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multi-platform operations (Wisner et al., 2008; Song et al., 2009). The architecture is operations (Wisner et al., 2008; Song et al., 2009). The architecture is developed based on HTTP, SOAP (Simple Object Access Protocol) and XML, among which, SOAP is used to achieve the exchange of information. It can make descriptions by itself and can be deployed on the Web Object, driven through business and highly encapsulated. [3] Currently, among the Microsoft.NET functions, the most critical one is Web Service.

III. PLATFORM REQUIREMENT ANALYSIS AND OVERALL DESIGN

A. Platform requirement analysis

Requirement analysis is to understand the users' requirements for the platform, which specifically include behavior, performance, function and design constraints. After the requirements analysis, based on the characteristics of the online ideological and political education website, this platform should contain three elements, namely, back-end business, front-end navigation and Web service interface. [4]

1) *Campus network system analysis*: The ideological and political education website is only part of the campus network system. It is independent from the campus network but also exchanges information with other systems. Many problems are found in the analysis on the campus network system, of which the most obvious one is that the campus network user information is not consistent with the news information. In the future, a unified platform will be built in the campus network, so the ideological and political education website needs to set up two interfaces. The basic structure of this website is shown in Fig. 1

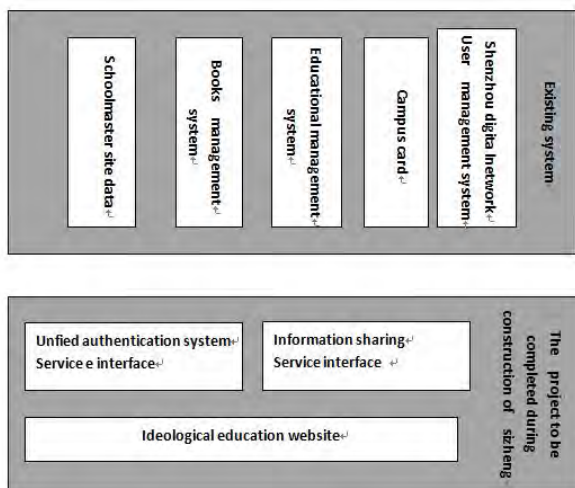


Fig. 1. Basic structure diagram of campus network

2) *Main column content and construction objective analysis*: The ideological and political education website contains a lot of content, involving psychological counseling, teacher and student exchange, party building and student associations, etc.. If the website functional modules are classified according to the businesses contained on the site, the site layout will be in disorder and not convenient for search

and view. Therefore, the author divides the website functional modules based on the content displayed on the website. [5]

3) *Network business analysis*: If a website wants to attract users, it not only needs to set reasonable columns, but also should regularly update the content of the site and improve the site management process. According to the characteristics of a college, the site content can be classified into six parts, namely:

- (1) Message pad;
- (2) Module webmaster center;
- (3) Super management;
- (4) Campus star voting center;
- (5) Student work management center;
- (6) News management center

B. System business use case

Judging from the businesses of ideological and political education website system, there are 2 kinds of activities, namely member management and information management, among which, information management involves 4 businesses-school star voting center, news management, message pad and product management, and member management involves 3 businesses-module management, daily management and super management. Fig. 2 shows the use case of member management

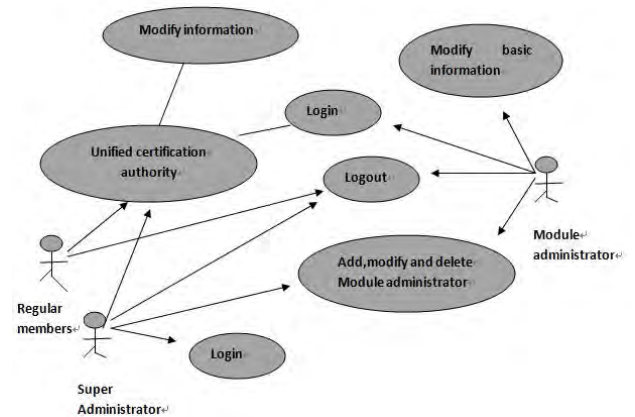


Fig. 2. Member management use case diagram

C. Design of the website logical architecture

The website designed in this paper is built based on the software architecture, and according to the characteristics of the site, it is divided into three basic layers. The presentation layer is used to present materials to users, and at the same time, the user will provide the materials to the software system through the ASP.NET control or through HTML. The logical layer is used to run the applications and process relevant flows and communicate and exchange with the data layer, presentation layer and common layer. And the part that uses software to read and write data is called the "data access layer". [6]

D. Physical architecture of the system

Although the ideological and political education website in part of the campus network ,Its database server and WEB server are relatively independent .When a user accesses the website, the college Cisco hardware firewall(T609 core switch) is enough to handle the dangerous ports. Each server also has a software firewall. The application of both hardware and software firewalls can improve system security.

E. Design of database and data structure

Database functions include data maintenance, storage and retrieval, which allow the system to search the appropriate information in an accurate, timely and convenient manner. In the system, whether different functional modules are interconnected and how they are connected are both closely related to the database. In the development of an information system, database design is a top priority.

According to the requirement analysis results, in this platform, there are total of 4data tables, namely the school star voting center, product management center, member management, column module information, news management center, message pad and professional description information tables. [7]The author chooses the product management center as an instance.

In order to ensure data integrity, the tables contained in the database are interrelated, as specifically shown in Fig.3:

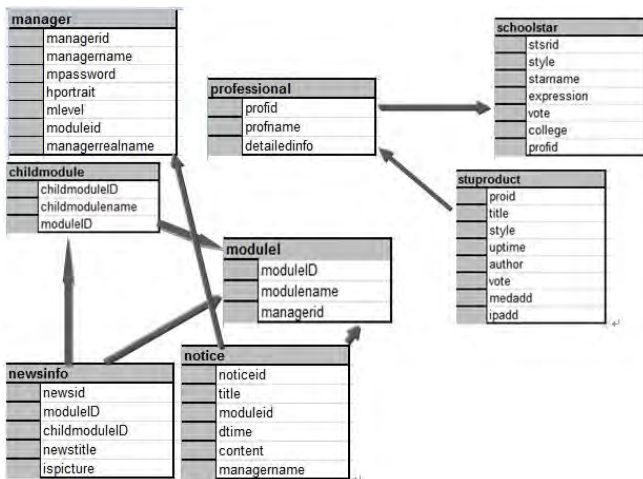


Fig. 3. Chart of database relational

IV. DETAILED DESIGN AND IMPLEMENTATION OF THEOLOGICAL AND POLITICAL EDUCATION WEBSITE SYSTEM

A. Website front end design

1) *Webpage design principles*: Students are the main users of the ideological and political education website. According to the characteristics of students, the website should contain rich content, pictures, videos and audios, otherwise, it cannot meet the visual requirements of students and thus it will not be attractive to them. Therefore, in the design of the website, in addition to novel columns and reasonable layout, attention should also be paid to spatial contrast, font and color to make

the webpages in line with aesthetic requirements and text and pictures should be combined to enrich webpage content.

2) *Webpage development process*: The front-end webpage is used to communicate with users, and also as he main pages that users browse. Therefore, in the design process the most important parts are art design, page layout, HTML file production and page style/LOGO design. There is no need to write business code.

Graphic designers should choose the main colors and tones according to the content of each module, communicate with website designers, and gain an in-depth understanding of the webpage function layout. Designer may use Photoshop to design the main page and subpages for each module and produce the effect drawings. Then they may, according the design effect and corresponding animations, pictures and related color parameters, complete the website front-end static page design in line with the webpage design principles.

3) *Webpage style design*: The overall image of the website can be presented by its style, which involves text, CI design, existence value, page layout, tone, browsing method, content value and interactivity, etc. The site logos, logo animation and navigation charts should be in line the main content of the modules. For instance, the main color of the party building module should be red. The main colors of all these modules do not have to be uniform. Despite the different style of each module, the overall design of the website should be coordinated.

B. Design and implementation of major business functions of the website

At this website, the most critical part is the news center, whose business functions are mainly displaying and uploading. Reviewing and modifying are within the authorities of the administrator. And in the display function, the important parts are headline list and news content. The flow chart of the news center is shown in Fig 4:

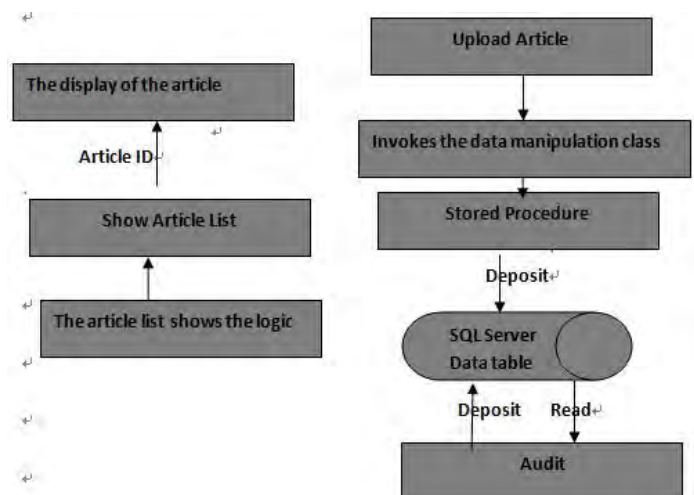


Fig. 4. News center flow chart

1) *Technical key points*

A thirdparty component is used to add the news function. The purpose of this component is to set the model for the articles uploaded by users through the format button. Through the command "<%@Register Assembly="CuteEditor"Namespace="cuteEditor"TagPrefix="CE"%>" and the statement <CE:Editor ID=="Editor1"runat="server" Width="682px"Height="184px">, the controls are displayed on the webpage.

By calling of various methods in the SztoNewsDetal class in the data layer, functions like uploading, deleting, modifying and displaying news and announcements can be achieved. In the headline list display function, the DataView object is defined in the ADO.NET to store the query results, and headlines are displayed through the ASP.NET data control Repeater.

The headline list gives the content display page the news ID. Through condition query, users can access the content of the article. Through the data binder of the Grid View control "<%#Databinder.Eval (Container.DataItem, "newscontent")%>", the detailed content of the news is displayed.

2) *News uploading:* After a site member logs onto the system, he/she can select the management center module to operate the back-end management system. In the left frame page, the main menu bar contains the option "information upload". Using the hyperlink, he/she can add news content in the right frame, and then input the title and content of the article, upload the pictures using the browse button, and then click OK to store the information in the database and folder. Whether the storage is successful or not, there will appear a prompt message.

3) *Headline list display:* In the headline list interface, the user can browse the news on the list and click the appropriate headline link, and then the corresponding news content interface will appear. At the ideological and political education website, the news information displayed is mainly realized through the corresponding module, so the news articles stored in the database can be displayed through the corresponding module. The interface is shown in Fig 5.



Fig. 5. Headline list interface

C. *Design and implementation of the network interface*

Web services can provide the required Web interfaces for the campus network system. After the user identity is unified, users will not need to log in repeatedly when accessing different systems, which is much more convenient. The information sharing service allows the campus sites to obtain a shared interface to exchange and share information, which can, to some extent solve the problem of information exchange between various independent systems in the campus network.

V. CONCLUSIONS

(1) This paper designs a Net-based online college ideological and political education platform mainly to meet the actual application needs of college students. It is developed based on the Microsoft.NET platform with the C# language.

(2) This paper performs a comprehensive requirement analysis on the platform, puts forward the overall design of the website, and provides the site column settings and business logic analysis. According to business functions, it designs a platform database and analyzes the implementation process of various modules.

(3) The ideological and political education website platform designed in this paper not only provides ideological and political education for college students, but also gives students an education platform for them to enrich their learning content, stimulate their learning potentials and show themselves and to communicate with teachers. Today, when the Internet technology is so developed, this kind of network platform will guide students how to correctly use network.

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