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AP 기반 온라인 음악 및 비디오 공유 시스템

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ASP-based Online Music and Video Sharing System

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요 약
인터넷의 발달 및 사용자들의 생활수준향상과 함께 음악, 비디오 공유가 현재 네티즌들의 오락이 되고 있다. 음악과 비디오 공유 사이트들은 고객에 대한 플랫폼을 제공한다. HTML5의 등장으로 공유 사이트들을 최적화된 많은 공간을 가진다. W3C에서 의해 새로운 표준이 정립된 HTML5는 크로스-브라우저 문제와 명확한 의미를 가지고 플러그인의 장점은 멀티미디어 제생에 의존적이지 않다. HTML5의 주요기술, Asp.Net 플랫폼 개발, SQL 데이터베이스 서버들의 장점을 분석한다. 여러 가지 기술의 장점을 채택하고 상세히 설명하고 구상한 시스템 디자인을 소개, 주요기능 구현 방법 및 시스템 최적화 방법에 대해 기술한다.

ABSTRACT

With the development of the Internet and the improvement of people's living standards, sharing music and video on the internet that has become a modern entertainment to the netizen. Music and video sharing site provide a platform for the customers. The emergence of HTML5 gave sites a lot of optimization space. HTML5 is the new standard set up by the W3C organization, which solve the cross-browser issues and has a clearer semantics and the advantage of the plug-in does not rely on multimedia playback.

This article introduces many contents including: the system usage of key technology including the HTML5, Asp.Net development platform and SQL database Servers, and analysis of its advantages. This paper expounds the system adopts the advantages of the several technical and introduce the system designing thought, and it's main function realization method and system optimization process.

Keywords: Asp.net, Browser Compatibility, HTML5, Multimedia Playing, Multimedia Web Site, Personal, User Experience.
I. Introduction

In recent years with the popularity of the Internet, video music sharing sites have become very popular with the public[1]. At present in the Internet market there are many video music sharing sites, most of these sites use Flash Player or Microsoft’s SilverLight to play video music, such as potato ku6. However to use the Flash Player or Microsoft SilverLight player, we need to install the respective plug-in’s into the browser. Installing a plug-in allows users to pay more cost, but also have the security[2]. While installing a plug-in, the users are often unable to access resources or have installation failure problems. HTML5 provides several API, which allows developers to easily realize based on the standard Web body test, such as audio and video tags can directly play Web video and audio with the tools without the third party [3,4].

II. Related Key Technology

2.1 Asp.Net

Asp.Net can be used to create a Web application platform, using the Common Language Runtime (CLR) in the back-end server to provide users with a powerful enterprise. Web application service programming framework, which was launched by Microsoft, must run on Windows server. On the Microsoft’s servers, data access, programming, and security tools work together very closely. On this platform, developers can create visual user interface, access data, process data, running and debugging program. Asp.Net development view is shown in

Figure 1.

Fig. 1 Asp.Net Development View

2.2 SQL Server 2008 Database

Database management system (DBMS) consists of a collection of interrelated data and a set of program used to access these data. A series of SQL Server run on Microsoft Windows operating system of a mainstream relational database management system. A database is a set after finishing the data through the computer, which store one or more files and the database management software is called a database management system. SQL Server 2008 as a reliable and efficient data platform, that provide users with a series of rich integration services, and it can realize the data query, search, Synchronization, reporting and analysis, and so on[5].

SQL Server contains data management functions and improves the security of the application, at the same time provides the built-in ASP.Net Function for operation and display data. Application written in ASP in the front-end and using SQL Server as back-end database server, the user can use a Web browser to access the data in the database. Its working principles are shown in Figure 2.
Fig. 2 ASP+SQL Server Working Principle

2.3 HTML5

HTML is the Hyper Text Markup Language. It is currently the most widely used markup language on the Internet. It is a standard that is responsible for the label, semantic part of the page. It can mark symbol that represent the corresponding page of each part[6]. HTML5 is a more recent version of the HTML standard. It is designed to make changes to the previous versions of HTML which could not effectively meet the needs of the modern Web application. The new standard will include more powerful interactive, multimedia and localization of labels and application programming interface (API).

Programs made with new technologies like the ASP.NET, HTML5 and CSS3, have better compatibility and applicability. In order to simplify the process of creating interactive Web form and to reduce the errors related to interface and logic separation and making the Debugging process simple. MS is very easy to use principle, that choose to use a ASP.NET Web server controls as interaction Part of it. Using the SQL Server database improves the data acquisition speed and data maintenance, update, and management which greatly improves the flexibility.

III. Experiment

3.1 System Function Structure

As a whole, projects using B/S mode (browser/Server mode), will be the realization of the system function concentrates on the Server, the system development is more simple, easy to maintain and use. Because users only need to install a browser and a Server such as SQL Server database, you can use the Web Server for database interaction and management. Because the browser is widely used, this project has great useability. Working principle of the B/S mode is shown in Figure 3 and System function Structure is shown in Figure 4.

Fig. 3 Working Principle of the B/S Mode

Fig. 4 System function Structure

3.2 Database Design

The main consideration in this system in terms of data storage, is the audio and
video information storage, users' personal information storage, as well as the connection between the audio video and users. Audio, Video, and Users can be regarded as three types of entities. So in the system database, the three entities viz music, videos and member are stored. Database E-R diagram is shown in Figure 5.

![Fig. 5 Database E-R Diagram](image)

3.3 Sharing Multimedia Function Realization

Users to share audio and video Function:

a. The `<td/>` element is to display text, such as the "name", "class of music" and prompt information, etc.

b. Place ASP TextBox control, it is used to display single-line input box, and used to collect the upload all the information of the multimedia.

c. Use of `<textarea/>` element defines the text field, and shows the summary of audio or video input area.

d. Place ASP FileUpload control, it is used to select upload audio or video file. The front-end display shown in Figure 6, Figure 7.

![Fig. 6 the Sharing Function Demo of the Music](image)

![Fig. 7 the Sharing Function Demo of the Video](image)

3.4 Multimedia Playback Function

When the user click in the center of the home page, video or music center need to play the multimedia. It can direct to the multimedia playback page. After entering, multimedia is automatically set to the default volume and start playing. Users can choose various options like play, pause, broadcast, schedule, and adjust the volume. Operation of the multimedia playback and broadcast are relatively smooth. It is shown in Figure 8.

Multimedia playback bar is below the comment on the editing area of the page. In the comment area, users can comment.
on the content of the input and then click the review button to see the published comment on multimedia. So users can browse the review content to know more about the media. Figure 9 to show the comment function.

Figure 8. Multimedia Playback Page

Figure 9. Comment Function

3.5 Keyword Search Multimedia Function

In the Search page, user can choose the drop-down box to search video or music by keywords. Once we click on the drop box, a message with "please enter the query keywords " is prompted to the user to enter the keywords. The entered keywords are searched in the backend and the results are displayed by either video or music. It is great convenience for the users.

Figure 10. Search Multimedia Function

IV. Conclusions

At this point, the final design has also been drawn to a close. I remember at the beginning, the feeling is a lot of harvest. Finishing this system from the beginning (choosing the development language and tool) to the analysis requirement, to perfecting the functions and optimizing the system towards the end for performance has all been done very carefully. The system has been programmed in c# development language, system building in Asp. Net platform, and SQL server database for data storage by following the HTML5 specification. Realization, user registration, user login, share, and playback of music and video and other basic functions. By using the new HTML5 <video....../> and < audio...../> tag, the system does not need to install plugin when playing the multimedia files. After the final program modification and optimization the system runs stably. The interactive design is reasonable and has good user interface.

Even though we have done the system optimization on the browser side for the playback efficiency but having a large
number of users using the video music sharing sites simultaneously online could cause stress on the efficiency of database accessing the multimedia broadcast. Still there is a large scope for improvement. In addition, HTML5 browsers support audio video format but there is no uniform standard. Sites of the existing resources cannot meet all the user’s requirements. There are different ways to fix this problem. If we store multiple formats of the same multimedia files, it will be redundant on the local server storage space. If we convert the format of the media, then it can cause great CPU overhead. This system does not yet provide a solution of this problem. Hope in the later study, we can grasp more technical and scientific algorithms and know-how to overcome this challenge.

V. Reference

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