Realization of the Integration of Database System and Web in Information System

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Abstract: The integration of DBMS and Web is realized by components. The architecture of DMWAS is proposed from the point of view of logic. This paper studies how to realize the integration of database system and Web in information system. With the rapid development of Inetlnet, the network has rapidly become an important means of information dissemination and exchange, especially on the web, with its rich data sources. Research shows that the module uses a connection-oriented, single-link, non-blocking communication method, always running in the background in the form of threads, listening to messages from the server, greatly improving the reliability and efficiency of network communication. The component model makes the integrated system scalable, good compatibility, and effectively reduces the load on the server when the number of users increases dramatically, so the system has high reliability and maintainability.

1. Introduction

With the development of network technology, Web has become an important information system. The integration of database system with Web has become an important topic in the field of database research [1]. Independent enterprise or organization applications need to be transformed into Web-enabled applications, such as digital libraries, e-commerce, enterprise portals, and more, and more Web applications [2]. Two Web-to-database system structures are discussed: hybrid Web vs. database system structure, and S-mode Web vs. database system structure. Due to the openness of the Internet and its rapid development, it is regarded as the prototype of the future information highway [3]. However, in the process of integration and construction of modern enterprise information systems, a large number of existing systems need to be integrated and reused, and there is a large amount of heterogeneous data in the internal and internal information exchange between enterprises and enterprises [4]. This requires that the network computing environment of enterprise information system must be distributed, interoperable and heterogeneous [5]. These data should be presented to users in a form and manner that is consistent with professional habits, intuitive and convenient, vivid image and information sharing. This integration can give full play to DBMS's efficient data storage and management capabilities, take the Web as the platform, integrate the client into the Web browser, and provide InIemtet users with simple, convenient and rich business [6]. Therefore, the integration of Web data sources will facilitate the development of web applications.

Faced with the complex and dynamic content of Web information resources, people are likely to be caught in the ocean of information and are at a loss [7]. Specifically, the integration of database system and Web has the following advantages: the platform independence of client, the unified use of Web browser by client, thus eliminating the duplication of work in developing client programs for different platforms under Cient/Server mode [8]. The system is scalable and easy to expand and modify. For users, the interface is unified, easy to use and maintain. For example, if a user wants to go to New York on business, he wants to know the price of the local hotel, so as to find the most appropriate hotel [9]. Web-assisted technology has a strong development in bamboo, and it’s a mature technology. The reason is very simple, because the Web is better than the technology and the prisoner is picking up the drum. The technology of technology, Web than technology is developed along with the development of other technologies, that is to say, the formation of Web than the technology itself in the dissemination of other technologies [10]. Just a few months ago, the

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Web was just the medium through which people and computers shared documents over the Internet. The key to solving the problem of accessing heterogeneous data is that it must solve the integration problem of heterogeneous data. Only by integrating these isolated data, it provides users with a unified view. It is possible to get the data you need from a huge resource! You can choose the right technology for data analysis, integration and processing.

2. Web Database System Structure

2.1. Hybrid web database system

The hybrid Web database system uses a Web client application that uses Web as a client extension. With the rapid development of Inter-net, the network has quickly become an important means of information dissemination and exchange, especially on the Web, with an extremely rich source of data. DMWAS is a web server in the three-layer network computing mode. When the system is configured, the administrator specifies the listening port, which is responsible for listening to the client's request, identifying the URL, activating the corresponding processing component, and generating the HTML document for transmission to the client. It communicates with the database server using a session-oriented protocol while the database client is running. Today, it has become a distributed development environment that provides information and application resources to users around the world. The development of Wed technology opens up the application field of database on Internet. Therefore, Web service is very suitable for solving the problem of remote transmission and data interaction between different data sources. It is suitable for the integration of heterogeneous data sources in different places. With the rapid expansion of Internet technology and its application scope, the construction of environmental information system is required to meet the needs of network interconnection and information sharing and to build distributed information system. Due to the advantages of existing integration methods of Web and database systems, DMWAS provides a set of connection modes, such as improved procedural CGI mode, Java mode, SS1 mode and procedural API mode.

Taking the structure of secondary tributary data table as an example (Table 1), HtmlHd and HtmlMp annotation fields store map data header files in HTML format and corresponding map data respectively.

Table 1 Level II residual database structure

Field name	Representational significance	Type
Shxid	Water System Number	Numerical model
Yjid	Primary tributary number	Numerical model
Erjid	Secondary tributary number	Numerical model
Erjrch	Name of secondary tributary	Character
HtrnlHd	Map header file with HTML format	Note type
HrrmlMp	Map data in HTML format	Note type

2.2. B/S mode web database system

At present, large-scale C/S systems often adopt three-tier mode structure, which divides applications clearly, makes them logically independent and can be implemented separately. These three layers are usually considered as expression layer, business logic layer and data service layer. Web technology combines all kinds of information resources, such as static images, text, sound and image, and its use is expanding rapidly. Use it to build a virtual global database! Can effectively integrate resources! And ensure good transparency. Networking can effectively realize data sharing and integrate spatial and attribute data, so that it can be used, updated and maintained conveniently. An uninterrupted message passing channel is maintained between the client and the database server to overcome the contradiction between the THTP protocol and the client/server, and solve the problem of excessive network overhead in the CGI mode. And can guarantee the ACID characteristics of the transaction in the ring based on THTP. However, it has a series of problems:

First, building such a centralized system requires a long development time, requiring high-performance host devices, and the implementation cost is high. Second, the expansion and maintenance of the system involves the entire system, and one integrated system cannot share the modules of another integrated system.

3. Web Database Integration Model

3.1. Web data integration method

The methods for building a web data integration system can be divided into: a data warehouse method and a Wrapper//Mediator method. DMWAS allows multiple browser clients to share the actual connection of a database, thereby reducing the burden on the server side, and the increase in the number of users does not drastically degrade the performance of the system. In recent years, in the field of databases, with the development of object-oriented technology research and application requirements, database technology has begun to evolve from a purely relational model to an object-relational model. Unlike other common markup languages such as HTMP, XML does not have a fixed set of tags. It only provides a general, flexible syntax mechanism for recording data and hierarchical relationships between data. Using Internet and Web-based web information query will become the main way for information system to realize query and output functions. In the face of a network database, it is very important to maintain the security of access and update. The user's query is to query the data in the data warehouse. The advantage of this method is that the process of establishing the system is simple. Template files are safer than embedded SQL, because the client's SQL statements may be modified by unsupported users, which will guide users to obtain unauthorized data or modify or delete data in the database. However, in the mid-1970s, people found that no single network can meet the needs of all users. They must have a technology to connect all kinds of networks. This technology is today's Internet.

In order to reduce the workload of system transformation and make full use of the code of the original system, we define an interface class to implement the interface between Web server and CGI process, which is explained as follows:

Table 2 Web server and CGI process interface

Type name: CCGI
Constructor: CCGI () -- Get CGI-INI files from command line parameters, and then get input and output files
Method: GetsysVar () and GetCGIVar () obtain the corresponding environment variables from the CGI-INI file. GetForrnField () and EnumFormField () obtain user input data from CGI-INI files. WriteHTMLBody () writes the query results to the output file.

3.2. Internet application function of the system

In web browser, the query request for database is sent to HITP server by Web client through query form, and the corresponding URL (Unified Resource Location, Web Page) is searched by HTTP server and returned to client browser by HTTP server. One limitation of HTML documents is that there is no separation between data and presentation! Whether data or form changes, the data and form in documents should be redeveloped! It is not conducive to the reuse of data, nor to the maintenance of data consistency. In order to fully realize sharing, it is necessary to keep the database confidential, especially on the Web. However, DCOM, COR-BA or BMI requires that the service client and the service provided by the system itself must be closely coordinated, that is, a basic structure of the same kind is required. The principle that such multiple clients share a request proxy component is that the user is logically the same when accessing the database, so that maintaining the database operated by the component does not cause logic errors. Based on transaction processing. A transaction is the basic unit for the database to provide external services.

In this case, the user must check each time it is called. Of course, this check does not need to be done by extracting the example page. The system only needs to compare the user mode and the extraction rules.

4. Conclusions

The main research purpose of this paper is to realize the DM3 and Web integration system DMWAS by using component technology. The architecture of DMWAS is proposed from the logical point of view, that is, Bowrser/WebeSvrer/DBMs is adopted as the structure. The distribution of information from the database on the WWW, combining the database and WWW has become an urgent issue. For the problem of poor usability and poor adaptability, we intend to adopt a data extraction and maintenance method based on predefined patterns to simplify the wrapper generation process and improve the adaptability of the wrapper to dynamic page changes. The advantages and disadvantages of various integration approaches are analyzed and compared, and the future development trend of Web database is defined. Using XML Schema as the description method of global database schema, it is easy to establish database interface, and further using XML database as the basis of data storage, it is possible to integrate multiple database systems. At the same time, because when system structure has a common display format, the operation of querying information is relatively simple, which greatly reduces the training cost of users, and is also conducive to users' cross-system use.

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