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The Development of Office Automation System of Basic Affairs in University and College Based on J2EE

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Abstract. This study aims to design and improve the development of office automation system of basic affairs in university and college. By means of software engineering, adopting J2EE, combined with SQL Server database to complete the design and the development of system, through the test of platform, it can complete the relevant business administration management in university and college, which can explore a new way of sound development for university and college.

Keywords: Office Automation System, J2EE, Database

Introduction

In these days, the trend of information technology widespread the world, with the global economic integration becoming more and more obvious, with office automation as the representative, the service function of government and enterprises of electronic management, automation management as well as paperless management is rapidly developing currently in some countries, especially in the developed countries. The implementation of office automation has become the core strategy for government and enterprise to improve their competitiveness[1]. It can be said that the government, enterprises and institution of information technology is the precursor of implementing social information, office automation is the inevitable development of information society[2].

This paper introduces the construction of Office Automation system based on J2EE software platform, which is in line with the social demand of office automation system, as well as the rapid changing demands of users, so as to make it change on with the swift changing development trend of platform technology, with a good policy environment as well.

The platform of business infrastructure software is a kind of platform with business oriented and rapid application software[3]. It solves the problem of interaction between management business management software and operating system software, which can describe the basic framework of the platform, at the same time it shields the technical details[4], so developers can concentrate on business and management issues in product research and development, so as to get rid of the trouble of technical details, which can greatly improve the efficiency of product development. There are two ways to express it: the first kind is component-based business infrastructure platform, the second kind is the model of business infrastructure software platform".

General Design Idea

In this paper, based on the development of office automation system of basic affairs in university and college, it aims to help university and college to establish a flexible, efficient and electronic office environment as well as information management platform. The whole

system can be divided into two parts: design platform (the basic business software platform) and application system. It can cross the platform and the cross database.

Design platform (i.e. basic software platform fir business): it is with functional customization and expansion, based on C/S structure, capable of visualization, zero programming for customization and extension of the system application platform with interface function; building new visualization application subsystem with zero programming.

Application system: it can achieve all the goals, based on B/S structure, the terminal does not need to install special client software, which can support to complete the main work.

Technology Route

1. Program Development Technical Route

At present, the technical system of office information application system mainly adopts Microsoft, including Net computing platform and J2EE computing platform. The main advantage of J2EE technology is that it has excellent cross platform performance and good openness. J2EE can provide an enterprise class computing model and the operating environment for application development and deployment of multi-layer architecture, which can provide necessary enterprise service computing environment, so as to make the deployment on J2EE platform have multi-layer application so as to achieve high availability, security, scalability as well as reliability.

The design here uses the mainstream of distributed computing standard J2EE, XML and Web Service, program coding can adopt J2EE traditional design patterns: Jsp+Servlet+JavaBean.

2. Operating System of Server

In this paper, the system designed here can support the operation of operating system platform in Unix, Windows, Linux,it adopts Windows for this time[5].

3. Application Server

In this paper, the design system can support J2EE application server (WebLogic/Webspere/Oracle 9i AS/JRun/Tomcat) applications, it adopts JRun for this time.

4. Database

The design system here can support a variety of databases, including Oracle, DB2, SQL Server, SyBase or Informix, or even free product: MySQL. It adopts SQL Server for this time.

Design Platform

In order to achieve the design goals in the development cycle, the design platform uses the third party components in this paper, which can also make appropriate modifications and optimization. The design platform has the following characteristics:

Rapid customization and support platform has the characteristic of flexible business process model, it can adopt software reuse and dynamic model of workflow technology as well as the ideas, which can visualize various business processes and various function modules with the fast zero programming design unit, it can quickly adapt to the changing needs.

It takes the workflow as the core, meanwhile taking the visualization application development platform (Studio) and information exchanging platform as the based, XML, EJB, CORBA, and Java as the standard, adopting Web Service's advanced service concept, using

portal to organize and present the government resources, which is a multi-layer application framework deployed on J2EE platform.

Relationship of Database

Java database is connected with the connector (JDBC Connector, Java Database Connectivity Connector), which is a kind of Java application server access process running on Sun micro system Java platform 2 by using enterprise edition (J2EE) with various business processes and various function modules.The JDBC connector can connect an application server with a JDBC driver. The connector allows sellers to pack up them and as a result, as for Java application program, they can use it once they just plug it, at the same time, it also makes the application server use the third party can use their products JDBC drive. The main database structure design of this system can be shown in Fig.1.
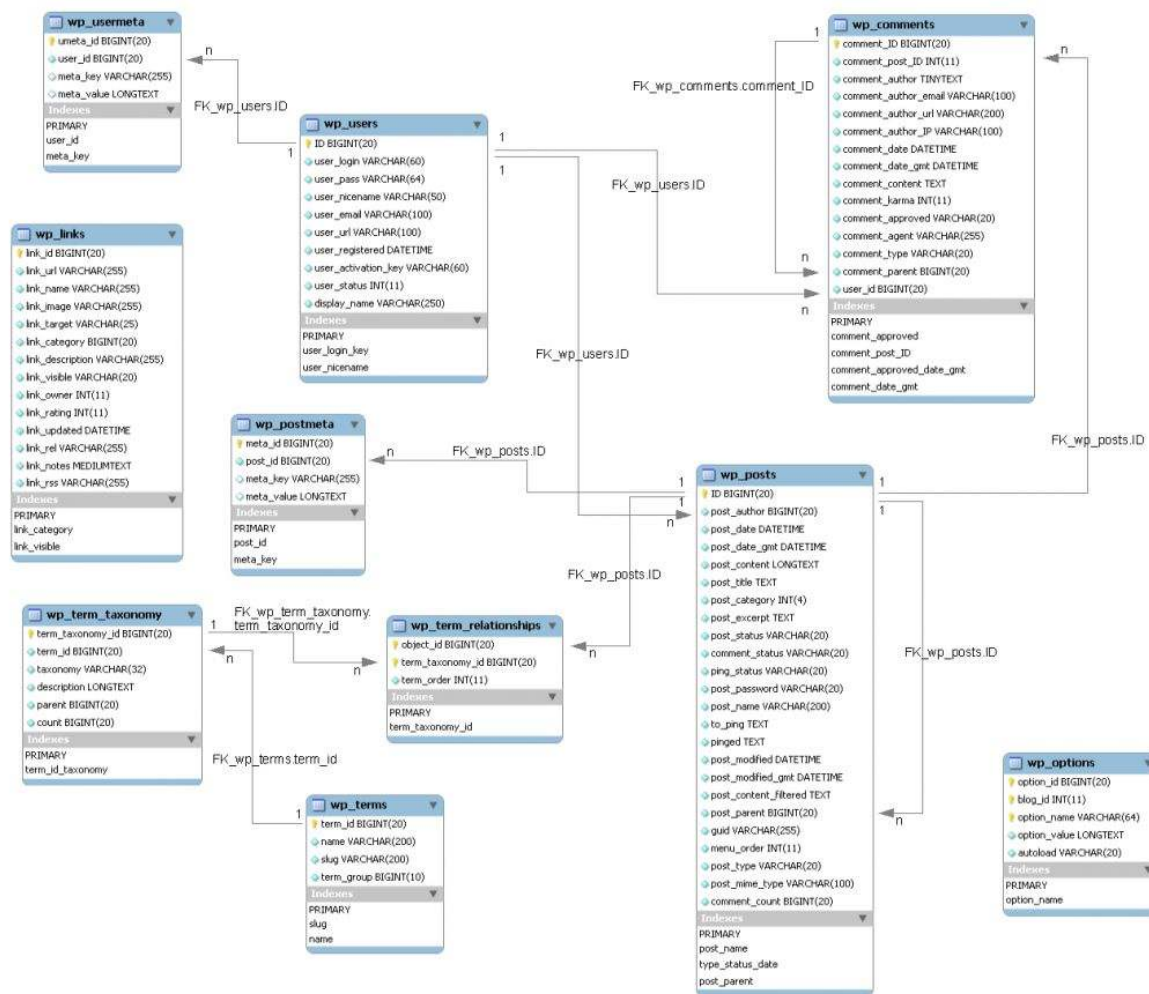

Fig. 1 Database Structure: User Table and Some Correlation Table

Result and Conclusion

Through the construction of university and college OA system based on basic software platform, it can well grasp the process and the key technology of the development of application system based on basic software platform, mastering the integration of traditional application system development mode, component development mode and business basic

software platform development model, making a thorough understanding on the general requirements of university and college OA system, so as to have in-depth analysis and design out a set of OA system that can be well suitable for university and college.

Through this design, it can well grasp the process and the key technology of the development of application system based on basic software platform. Meanwhile it can basically achieve the following goals:

1) System can obtain the characteristics of having rapid development platform with user oriented

The system can obtain the characteristics of having rapid development platform with user oriented, by using the dynamic model of DMW workflow middleware and visualization application system designer, it can achieve the zero programming business process specification, with flexible, customized features, which can build new OA application function module for users quickly.

The concept of "zero programming" implemented by the system can help users to deploy the business process application system through the process designer and report designer quickly. Compared with the traditional software development mode, the software development cycle can shorten more than 50% period by adopting the basic software platform.

The system can support the distributed development mode, and the design and development of the same OA system can be carried out on the network through a number of designers.

2) System can adapt itself to the changes of business rules quickly

The system adopts DMW (Dynamic Model Worknow) dynamic model workflow technology, this kind of technology can have strong business rules engine. The business rules of the system basic software platform is in the form of data stored in the database instead of the program, once the user needs to change the business rules of the system, it can easily and quickly realize through the platform designing device[6]. Platform designing device can provide design tools such as record table design, process design, graphic design, report design and so on. The modified business rules can be uploaded to the application system immediately through the upload function of the designing device, without stopping the operating application system. Similarly, users can continue to add new application subsystem through the design platform, as well as the new business rules, which can greatly extend the life cycle of university and college OA system.

3) System can have the embedded reports and charts

The system can provide dynamic report and chart design, through the built-in chart report designing device, users can set up chart according to their own requirements on the output data, it can not affect the decision of the system because of the unflexible report data.

4) It can support online editing for various documents

The system can provide a close combination with the browser, a strong online document editing function, it can realize the online editing and file transfer through the background file server with high performance, by adopting this technology, it can easily modify WORD, EXCEL, CAD or other types of documents.

It can greatly reduce the user's processing period and improve the speed and quality of handling files.

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