

RESEARCH AND DESIGN OF ONLINE DECLARATION AND APPROVAL SYSTEM BASED ON MVC

Wanlin Gao^{*}, Hongqiang Yang, Xin Chen, Yang Ping, Zhen Li, Xinlan Jiang, Ganghong Zhang

College of Information and Electrical Engineering, China Agricultural University, Beijing, China, 100083

** Corresponding author, Address: P.O. Box 105, College of Information and Electrical Engineering, China Agricultural University, 17 Tsinghua East Road, Beijing, 100083, P. R. China, Tel: +86-10-62736755, Fax: +86-10-62736746, Email: gaowlin@cau.edu.cn*

Abstract: This paper presents a development program of the online declaration and approval system. The system is against the government's functional departments-oriented online community to declaration and approval. System using MVC Framework achieve the administrative declaration and approval and external services, thus simplifying declaration and approval procedures, improve functions of the government department office efficiency and achieve administrative declaration and approval information, for promoting the building of e-government, it is a very important significance. MVC-based framework is suitable for the design of the system with a high degree of reliability, scalability and security.

Keywords: declaration and approval, MVC, E-government

1. INTRODUCTION

In recent years, the international and domestic levels of government generally improving office efficiency, simplify administrative procedures, advance online declaration approving the building of e-government as an important content. Using Web-based declaration and approval way, instead of the traditional declaration and approval way in China is an inevitable trend. It is not only conducive to the public and the government to use the

most modern methods of information transfer and establish direct, unified communication channels; reduction of the monopoly of information, but also as a result of reduced cumbersome management areas and intermediate costs, and to a large extent, avoid the breeding of corruption. Therefore research and design of online declaration and approval system based on MVC, promoting the development of e-government is of great significance.

Online declaration and approval system is online functions of the government departments for approval (Zhang Lei, 2007), oversight, and consulting functions and services, can run through the network environment, strengthen the public, mainly corporate users and organizations with the government departments and business through the Internet, greatly reducing the business processing cycle, it will reduce the pressure and work intensity on government departments.

2. SYSTEM REQUIREMENT ANALYSIS

2.1 Functional Requirement

Declaration units and individuals can fill the online declarable items and transfer files through Internet (ShiDong Wang, 2007). The unit or individual has declared the projects and materials information to undertake a comprehensive inquiry. Government managers to be on-line completion of the project information and materials selection, declaration, assessment, approval notices Print operation, all of the projects and state material information integrated query.

2.2 Reliability Requirement

To ensure that the project information and materials declaration process data integrity and validity (ShiDong Wang, 2007), avoiding as a result of system software failure caused data loss, bad data and database damage. We should choose a reliable database management system, and gives a reasonable set of database backup program, and must fully consider the safety system.

2.3 Scalability Requirement

Declaration and approval system is the e-government information technology first step, and with its further development will increase the

requirement for more, so in the software development cycle early should fully consider the whole system can be expanded and scalable.

3. SYSTEM DESIGN

3.1 System Framework Design

System provides external services as inquiries (ChuanBao Zhu, 2006), download forms, online declaration, replied feedback information and so on. System provide internal management as time supervision management, flow control management and so on. Under the e-government to the actual demand, online declaration and approval system’s basic features include: declaration functions, online help functions, published information function, information security, organization and management functions, processing functions, system management can be customized functions, log function declaration and approval flow process control functions. As shown in figure 1.

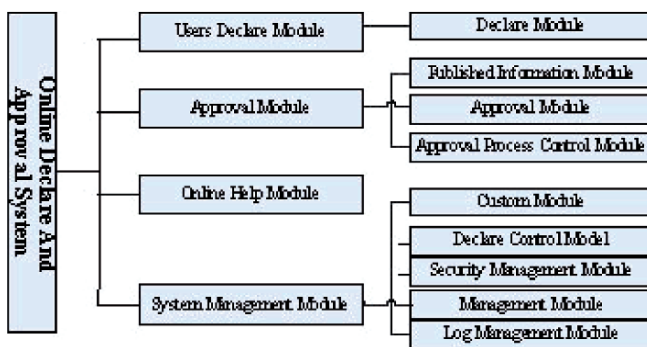


Fig. 1. Online declaration and approval system overall function chart

Online declaration and approval system the following major functions:

Custom functions

The customization process is based on flow algorithm can be customized to the user’s own customized process (ChuanBao Zhu, 2006), taking into account the actual needs of the use, can be divided into two customizable: First, the process of specific documents can be customized. This applies to a fixed format and strict vetting procedure audit system with special or unusual approval process; Another is the information reported to the general approval of the customization process. These two customized, users can be flexible on, the realization of the freedom of independent approval process customization (ShiDong Wang, 2007).

Declaration function

Download the appropriate form to fill in, upload form and the corresponding materials.

Approval function

Administrators can query declaration items and materials, approval items.

Process monitoring function

System managers can monitor the implementation of the process of declaration and approval procedures for the implementation of the monitoring, for the implementation of the relevant control commands.

Log function

Maintaining records and logs the basic information, including project personnel of the process and activities of the operation. System operation is detailed log records, guarantee different vetting personnel, and other users of the system in an orderly scheduling will be able to observe their duties, fulfill their duties.

Online Help

System provides friendly on-line help, users can be quickly and convenient to get operational guidelines and associated with the operation of the information as well.

3.2 System Layer Design

To meet the system requirements, the overall framework for systems uses Model-View-Controller (MVC) architecture (Total Lei, 2006). From top to bottom are View layer, controller layer, model layer, persistence layer and data layer. As shown in figure 2.

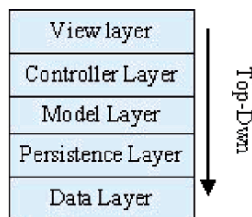


Fig. 2. System structure chart

Layers of dependence between the principles of top-down, the upper layer can rely on the lower layer, and the lower layer should minimize reliance on the upper layer. Meanwhile layer through the interface between interactive and reduce the dependence on implementation.

MVC can be applied to large-scale expansion of the application system development (Total Lei, 2006), application of the input, processing and output separately. Classified as a model layer, layer and View-Controller

three different levels, so that they each perform different tasks, any level of change will affect the other two.

MVC three-layer model of the process is very clear, the specific process is as following (Xu Yi, 2006):

Controller receiving user request and then decide which model to call for disposal.

Model for the corresponding logic, then returned to the processed data.

Controller View will be called back to the data model presents to the user.

Change the system, in particular the requirements of the data will change data layers become very cumbersome (Xu Yi, 2006). Because specific data source may be diversified, for example, might be XML or database. In our persistence layer of the design, using shielding data access methods use simple, easy-to-use interface to satisfy the upper layer of data demand, thus very convenient solution to the data requested by the changes brought about by the issue.

The persistence layer used to achieve DAO design pattern. DAO mode is used to reduce core business methods and specific data sources and the coupling achieve data access and data sources unrelated to the purpose. As shown in figure 3.

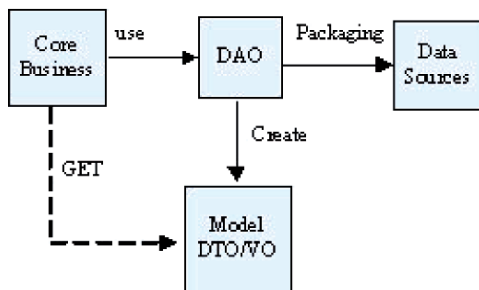


Fig. 3. DAO Mode application chart

Each persistence layer of a DAO corresponding category (Xu Yi, 2006), it achieved a persistence kind of create, query, update and delete methods. When to switch to other persistence or persistence mechanism of middleware, only need to create a new DAO realized, is no need to change the application of business logic code.

4. SYSTEM SECURITY DESIGN

Online declaration and approval system to achieve the office of the Chief of electronic (Liu Yang, 2006), Internet-based, the security of the system will have a direct impact on the normal operation of the Administrative Office of

effectiveness, efficiency and stability. System through the network within the network, networks boundaries and physical confinement measures erection of a security network platform. As shown in figure 4.

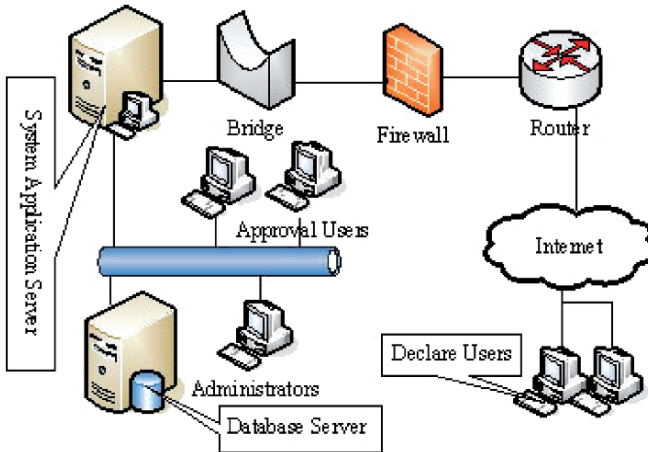


Fig. 4. Declaration and approval system physical topology map

Apart from the hardware on the safety measures, we also need the software system to ensure safety.

4.1 Guarantee the Authenticity of Materials Declaration and Approval of the Lawful and Valid Information

Online declaration and approval system the declaration and approval materials are electronic data, how to ensure the authenticity of electronic data system as a problem that must be solved. Currently, the electronic data taken digital signature technology to ensure its authenticity, digital signatures can effectively solve the problem.

4.2 Ensure Data Transmission in the Process of Secrecy

Because many of the data systems are sensitive information, the transmission process of encryption needs. We used standard SSL protocol to ensure that the process of transmission of confidential data.

5. CONCLUDING REMARKS

Administrative approval online services e-government as a public service focus application projects (Zhang Lei, 2007), is “to further transform

government functions, improve the management, the formation of standardized behavior and operational harmony and is fair, transparent, a clean and efficient administrative system” an important component.

Online declaration and approval system not only applies to taxation (Zhang Lei, 2007), and other departments, but also widely used in public security departments household registration management, Land resources management departments, municipal planning declaration and approval, project contracting management. System uses a large number of government departments commonly used standardized document online forms to achieve the declaration approval process. And system support tables and reports generated and modified, the approval authority set up and standardize the process of management, automatic classification of statistical tables and reports archiving management, to facilitate future inquiries statistics and checks. Thus, the system of government departments to improve the working efficiency, and promote the development of e-government has a very important significance.

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