Application of B/S structure design to the management system for examining construction drawings based on INTERNET

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ABSTRACT

For the manual handling process of construction plans review, not only cumbersome, inefficient, and error-prone, a construction plan review management system has been researched and implemented. The system uses J2EE architecture, B / S structure, the system is designed as multi-layer model, in which clients are achieved by using JSP STRUTS (MVC pattern), intermediate application server is deployed by APACHE TOMCAT、 WEBLOGIC, back-office services and database using REPORTING SERVICE, SQL SERVER 2008, ORACLE. The system is uses internal monitoring platform technology solutions based on a distributed business systems, to achieve application monitoring, database users operation monitoring and system log monitoring capabilities for distributed business systems, it solves the current firewall, invading detection, network auditing and other internal system usage monitoring problems that the network security monitoring devices can not handle, also using a modular approach to achieve drawing attribute storage. The application results show that, first, through information management systems and information site combine to achieve a direct inquiry and calls the internal review comments through Internet and available for download, the whole process without human intervention upload data , greatly improved work efficiency and ensure review data in a real-time and reliability. Second, the information management system can be generated directly deal with review comments, review comments may be formed in a database for easy archiving management, inquiry and backup. Third, using the Simple Object Access Protocol (SOAP) to achieve information sharing printing, and enhance the system's simplicity and scalability. Currently, most of the construction plan review works are in traditional working ways, that done manually in every aspect, it is slow and inefficient. Construction units, survey and design units, review experts to constantly back and forth between design units and survey units, affecting the progress of the project construction. For this situation, the country has developed some construction plan review management systems, which not only improves the project management system design, the efficiency of the use of personnel, but also reduces work errors. The engineering drawings of these systems are relied on manual processing, and does not solve the problem of how to simultaneously access multiple databases. The system uses a J2EE architecture, B / S mode, multi-model designed, the system framework combines Spring, Hibernate and Struts, three mainstream open source components, to make the system has good stability and ease of maintenance and good scalability[1]. The system uses aspect-oriented technology, to achieve one application service simultaneously manage multiple database connection pooling, to solve the difficult issues of how the general system simultaneous access to multiple databases; and also using a modular approach to achieve drawing attribute storage[2]. construction of Intelligent Transportation Systems (ITS) occupies a crucial position in the current wave of smart city. Effective and efficiency ITS needs two important conditions: plenty of traffic data and effective means of data analysis. Multi-source, heterogeneous, vague, uncertain traffic data fusion and sharing is the focus and difficulty of current research and application of ITS. The granular computing demonstrates a unique advantage in the information analysis and processing of massive, vague, uncertain and incomplete data. In this paper, we study the traffic information granular computing theory and build traffic information fusion model, framework and implementation program based on granular computing. We raise uncertainty reduction algorithms for traffic flow prediction and congestion recognition algorithms based on granular computing theory, which will provide new ideas and methods in the complex decision making under uncertainty problems of the transportation systems.

Key words: Information fusion; granular computing; intelligent transportation
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INTRODUCTION

Currently, most of the construction plan review works are in traditional working ways, that done manually in every aspect, it is slow and inefficient. Construction units, survey and design units, review experts to constantly back and forth between design units and survey units, affecting the progress of the project construction. For this situation, the

country has developed some construction plan review management systems, which not only improves the project management system design, the efficiency of the use of personnel, but also reduces work errors. The engineering drawings of these systems are relied on manual processing, and does not solve the problem of how to simultaneously access multiple databases[1-3].

The system uses a J2EE architecture, B / S mode, multi-model designed, the system framework combines Spring, Hibernate and Struts, three mainstream open source components, to make the system has good stability and ease of maintenance and good scalability[4]. The system uses aspect-oriented technology, to achieve one application service simultaneously manage multiple database connection pooling, to solve the difficult issues of how the general system simultaneous access to multiple databases; and also using a modular approach to achieve drawing attribute storage[5].

SYSTEM FUNCTION ANALYSIS
THE BASIC PRINCIPLE
from a designer 's point of view, The construction plan review management system including the construction unit , system management, reviewing results of three parts, shown in Figure 1. system management which includes system settings management, chart review system, file system , online communication, internal management , statistical reporting, website management modules , from the user 's point of view is divided into two parts, front and back office management. back office Management module is the key part of the system, it is a system maintenance and information management platform.[6] According to the actual needs, the system management background design is different with other systems. The system back office admin user has two categories: system administrators, drawing review administrators and general administrators. These three users are on the same platform, but different permissions. System administrator has the final authority, drawing review administrator has all privileges but can not delete senior administrator privileges, the authority of general administrator requires authorization. The system supports the construction engineering, municipal engineering, special projects and other types of buildings, structures, drainage, electrical, heating and other professionals, more important point is also can support the coexistence of graphical text editor [7-8].

The review tasks for review center, are focused on the survey review and design review. While completing the review tasks simultaneously, also achieving office automation processing of business aspects, expert online signature, generate relevant reports reaching paperless office, thus reducing the workload plan, improve work efficiency[9-10].
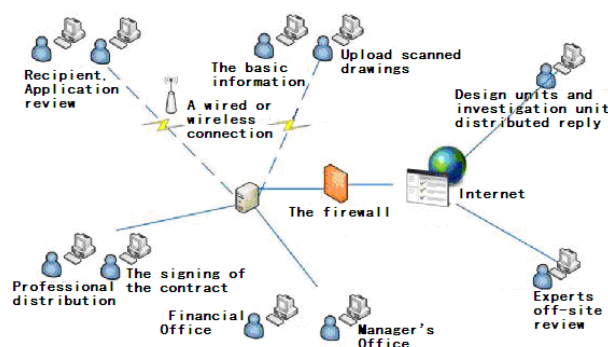

Fig. 1: System Architecture

DRAWING AUTOMATIC STORAGE
In order to facilitate the needs of query of management, when the drawing input into the management system, it must enter information about their property values. Property values and the number of inputs directly limit the query ability and query efficiency.

The software automatically from the drawing to identify the desired attribute values to achieve drawing storage operation (automatic storage) is a key technology for the promotion of engineering drawing management system applications.

SURVEY EXAMINED
Required to complete the entry of survey project, political examine, delegation, contract processing of technical examine, task scheduling, preliminary trial of technical examine, review of technical examine, proposals and opinions of technical examine, the responses of technical examine, approval of technical examine.

Entry the basic project information during the survey project examine process, and complete the deal for the project in each operating business processes, as business required to complete the survey projects examine, important business aspects required to achieve the computer signature, in the process of the project transfer required to generated the related reports function.

DESIGN REVIEW
Design review required to complete the data entry module of design project.

basic data : engineering grade , survey unit qualification level, design unit qualification level , construction fortification classification criteria , fortification , fire rating , site classification , seismic level , foundation form, structure form, civil defense rating , messaging accounts, information reported account manage ; expert data: architectural, structural , plumbing , electrical , HVAC , survey , roads, bridges , landscaping and other professional staff to review information management ; design unit information : design units and registered designers information management ; System Security : Contains system data backup and recovery , system logs , administrator maintenance role assignment , password maintenance and other functions ; drawing review process data : the recipient from receiving the trial , the policy review , the professional assigned to the contract , to project information improvement, to the technical review (including issue a preliminary report) , to payment, to review (up to three times , including issue a review report) , to grant approval documents and other process control management ; Statistics report: Contains reporting statistics , energy statistics, strong of statistics, survey and design data statistics , review project data statistics, data reporting and other functions.

And during the transfer process, project requires to control the authority of operators, given different rights to different operators, assign different functions and different roles.

SYSTEM DESIGN
The system is designed with the future expansion of the system and ease of maintenance, the use of advanced J2EE standards and technologies to design and implement systems framework. System uses the B / S architecture, the design uses the MVC pattern, while the use of the aspect-oriented technology, to achieve an application service simultaneously manage multiple database connection pooling, to solve difficult issues of the general system of how to simultaneous access to multiple databases ; to achieve drawing automatic storage. The system features a simple operation, good interaction to achieve technological innovation and functional design innovations.

SYSTEM ARCHITECTURE
System uses a J2EE architecture, B / S mode, the system framework combining Spring, Hibernate, Struts three mainstream open source components (referred to as SSH framework), the system has good stability and ease of maintenance and good scalability. The system designed for multi-model system, where the client achieve with JSP + STRUTS (MVC pattern), the intermediate application server using APACHE TOMCAT, WEBLOGIC deployment, background services and database using REPORTING SERVICE, SQL SERVER 2008, ORACLE.

DATABASE DESIGN
Database contents as shown in Table 1, in the design, both distributed database applications (ORACLE) and SQL SERVER 2008 are needed. For a large number of time-consuming queries, use SQL SERVER database operations through regular distribution library data collection, and then through a stored procedure to query data set, and can also be used for non-drawing examine data to add, delete, change, check the auxiliary system query functions to achieve permission settings, log monitoring.

MULTIPLE DATABASES LINK
In a traditional database connection procedure, the system creates a database link for each request, this approach seems straightforward, but when servers have a large amount of accessing, and a large number of concurrent requests, for each instance of execution the thread will create its own database links, and directly communicate with the RDBMS engine, it will make a sharp decline in the efficiency of the database, greatly increasing system overhead, in serious cases can cause the server to crash, therefore, need an efficient way to link the database.

DATABASE CONNECTION POOL TECHNOLOGY
Pool is a universal concept, have similar mechanisms with buffer storage, reduce access link, but it is more focused on the sharing of resources, for access to the database, the establishment of the connection costs more expensive, and therefore, there is necessary to establish a "link pool" to improve access performance.

THE BASIC PRINCIPLE
Link pools (Connection Pool) The simplest idea is to pre-establish some links, placed in memory object for use.

When a program needs to establish a database link, simply take one from memory to use rather than rebuild a link [1]. Similarly, after use, simply place a link back to this memory, and links break and links establish is managed by the pool itself, shown in Figure 2. it's like to build a pool, the pool has many links have been established, the places require to link with database, now have connected to pools.
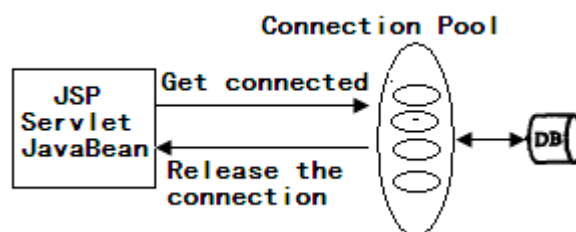

Fig. 2:The basic principle

WORKING MECHANISM

Link pools are mainly combined by DBConnection-Manager classes and ConnectionPool classes. Links pool management program DBConnectionManager classes will create and maintain a database connection pool, which is responsible for the management of the ConnectionPool classes which create an actual database link. In a particular link pool, all links are linked to the same JDBC U RI, that same host, database and login ID. In the link pool a single thread requests a database link, get this link through link pool management program, while other threads will not get this link to a database. After the end of this thread, the thread will return this link to link pool management program to be allocated to other waiting threads link requests. Here, the link pool full use thread synchronization mechanism, so that the current service thread waits until a free link appears. After the completion of the service thread database access, connection pooling should release the link, instead of closing the link.

TABLE1: DATABASE DESIGN

Table Name	Function Description	Table Name	Function Description
Admin	The user table	Jz_cd_lb	Site classification table
Author	Permission table	Jz_gc_dj	Project scale
Diary	Log table	Jz_jc_xs	Basic form
Jz_item	List of items	Jz_jg_tx	System table
Jz_engin	Project scale	Jz_kc_dj	Survey scale
Jz_censor	Examining table	Jz_kz_dj	The seismic grade table
Jz_retrial	Review form	Jz_nh_dj	The fire resistance rating se
Kcsj	Survey design units table	Jz_rf_dj	Air defense rating scale
Kcsjry	Survey and design staff table	Jz_sf_bz	Fortification standard table
Scry	Review staff table	Jz_sf_ld	The seismic fortification intensity meter
Sms	SMS interface table	Jz_sj_dj	The design grade table
Up	Reporting interface table	Scan	Engineering Scanner parameter table

Link pools can be set to a very efficient way, in link pool management program, you can set the link at the maximum number in scripts, the maximum number of uses for each link and other parameters, at the same time to control the number of concurrent requests can be processed simultaneously. All current requests will be locked in order by the link pool management program, the lock of request thread is done through the application code, and the number of requests can be great, do not worry about beyond the buffering capacity constraints. Once returned to the pool link, the link will be assigned to another lock request by the link to the pool management program shown in Figure3. When there are a lot of database requests and beyond the number of pool links, only the early database requests thread have links to access the database. Other links temporarily locked in a waiting state (shown with gray thread), when the thread finishes, database operates and release link, the released link will be sequentially obtained by other threads, so that you can greatly reduce the server's resources.
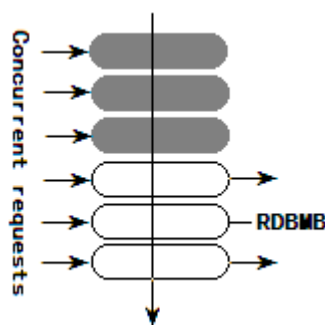
Fig.3: The working mechanism of link pool

LINK POOLS CONCRETE REALIZATION
Connection Pool class provides a method for obtaining an opened pool link from the database pool; returns a link to the database link pool; when the system stops running, release all resources and close all links. Connection Pool class also handle timeouts, communications failure and other link failure errors, create a number of initial links and limit the number of links in the link pool among pre-defined maximum value.

Loading and register all JDBC drivers.

According to the characteristics defined in a particular file, create Connection Pool object. the name of the connection pool mapped to the Connection Pool object. tracking the customer of link pool, close the link pool when the last customer complete the work. put the compiled link classes into the WEB - INF / classes corresponding position of application server pools. Set db. Properties property file, define the database user name, password, the number of initialize links and link properties, such as the maximum number of parameters. by calling the class of DB Connection Manager and Connection Pool class to get the database link, and then make the appropriate database operations.

FUNCTION MODULE DESIGN
DRAWINGS AUTOMATIC STORAGE DESIGN
Based on a careful analysis of the characteristics of the drawings presented in Figure sign recognition method based on a template, automatically extract information from the chart, drawings automatic storage, the article also raised a number of chart coexist in the same file multi Image segmentation method of execution.

DRAWING FEATURES AND AUTOMATIC STORAGE ALGORITHMS IDEAS
After Analysis a certain amount of engineering drawings , is not difficult to draw the following conclusions : The key attributes of each of the main basis for a drawing such as engineering units, the project name, project design number, drawing number, designer, date, etc. are contained in the table in Figure signed. Figure tag information is generally not mixed with the contents of drawings, organization arranged at a position away from the contents of drawing. various engineering diagram signed Figure signed format with the same general format of a project, while different projects may be quite different. two column headings of figures signed will correspond to each other semantically , and its form of expression may be completely different. the corresponding physical location between column headings and content, will be quite different between the different figures. There are certain commonality and individuality among the Figure signed columns of the same project, that some part of the content is common, and some changes in the law . easy access to many designers , have some relevance drawings in a file , or even All images of the entire project are in the same file , resulting in multi-map problems, to bring analysis and archiving difficulties.

Based on the above characteristics, automatic storage algorithm follows the idea: based on graph recognition algorithm of template matching, associate the template with the actual figure to adapt different formats Figure.

Drawing management system manages a variety of different project electronic drawing files. face a wide variety of quite different Figure signed format. Since Semantically, automatic identification figure may currently can not achieve, it is difficult to write a generic algorithm suitable for all formats. For executed to write the particular recognition algorithm of each format is feasible. But in essence it has common figure. Therefore the characteristics of the figure abstract as a template, the template can be constructed in various formats chart sign, identification algorithm only sign for chart template, without regard to the specific format of Figure signed, reduces the relevance between the specific format and recognition algorithm, thus greatly enhanced adaptive program.

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Figure template described as the cell is the basic unit. use Figure signed similar forms of features, the figure template is divided into multiple cells, directly the cell with a certain positional relationship and the entire figure is defined as some kind of semantic relations templates with each other.

Using FIG signed content expression characteristics to template matching. In this paper, based on cell contents match the recognition algorithm. First sign a unique text of the figure as keywords, that appear in the drawing around with the same text as candidates figure, and then on the basis of a template as the standard for integrity checks can be drawn correctly Figure tab.

The easier first step to simplify the extraction of multi-map sign. Some multi-chart diagram signed closer in position, it will interfere with each diagram signed decision, but inconsistent with the conditions of the various figures signed. Some mature and can be determined and extracted, after extraction the remaining determination of FIG sign interference can be reduced, so that the the determination condition of the rest of FIG sign is also mature. Therefore, the identification of multi-map can be divided into several completed ballot.

AUTOMATIC STORAGE ALGORITHM BASED ON TEMPLATE MATCHING
Figure signed template cell division: Figure signed Templates For similar forms, can be divided into cells, according to the layout on the cell (Figure 2) is divided into the following three categories: Paired cell. It appears in pairs in figure tab, such as the "Project" cell and "Jing Guang Center office building renovation program" Cell correspondence, here called the "Project" cell as project name cell, "Jing Guang Center office building renovation program "Cell as the project value cell, the project cell has called fixed content with a fixed name, without fixed content called no fixed name. Mixing cell. It is not only the name of the project as well as project value, no other corresponding cell, such as "version B" cell contains both the project name "Version" and contains the project value. Independent cell. It is only the value of the project without the corresponding project name cell, as Autocon Technology (Shen Zhen) Co.Ltd cell.

defined Figure sign template: template describes the characteristics of the Figure signed, various formats of the Figure sign can be constructed by the template, which include the following. the positional relationship between each cell and the entire diagram signed template. It has two characteristics: consistency. Entire graph templates can be fully divide by the cell. Integrity. All cells can be combined into a whole figure sign templates.

THE PRINCIPLE OF AUTOMATIC IDENTIFICATION FIG SIGNED
Assuming K is a set of character attributes, G as template, Mn in the template cell. Such template can be set by the relationship R ((G, M1), ..., (G, Mn), G is represented by the combination of template position of each cell and its semantic from the relations.

MULTI-MAP SAVED IN ONE FILE FIGURE SIGNED AUTOMATICALLY IDENTIFIES ALGORITHM
For ease of reference design, engineering designers often associated with several drawings in one file, or even the whole of the works are all concentrated in one file, that there is more than one file in Figure signed, Figure there may be very close between, which gives automatic storage difficult. This paper proposes the following algorithm to achieve automatic identification chart sign:

Step1: determine a representative in the drawing content rarely appear in Figure signed project called keywords. The cell with keyword is the key cell.
Step2: identify the cells with the same keywords in content of drawings, if not then turn Step7.
Step3: to identify a particular cell to determine an area to be recognized in accordance with FIG check the positional relationship corresponding to the template.
Step4: this area in the range of cells according to the semantic relationship template cell and the entire range of positions between the template formatting checks, if they meet, it is considered that this area is a diagram to sign, if it is, then proceed to the next turn Step3 a cell.
Step5: all been signed in accordance with the template in Figure extracting cell contents and syntax checking content.
Step6: If figure signed grammatical features, is considered to be a right sign diagram information, storage its corresponding drawings, and put all the content in this group as have been identified or marked as deleted, turn step3.
Step7: End

THE ALGORITHM CHARACTERISTICS
This algorithm combines the contents of the cell and the position matching the matching in two ways, not only well adapted to an ordinary cell, and the cell can identify a particular format, showing the direct identification sign while

people database automatically, so that accurate sex is guaranteed, anti-jamming algorithm and efficiency is also strong to achieve a fully automated identification.

FUNCTIONAL MODULE DESIGN

Construction drawing review management system includes basic data set, expert management, survey and design unit management, system security, the trial plan management, statistical reporting and other modules.

Basic Data Setup Module: In order to facilitate the use of software, some of the commonly used field data set first, plan approval process, you can call them directly, then the trial that saves time and reduces the recipient text entry error rates, but also for the late Statistics provided for convenience.

Commonly used field data are: engineering grade, survey level of qualification, the qualification level of design, construction fortification classification criteria, fortification, fire rating, site classification, seismic level, foundation form, structure form, civil defense level, SMS accounts, reporting account and so on. Engineering level, for example, features include a project level to add, modify, delete and other operations.

Experts Management Module Design: To manage the professional experts of review facilitate first, convenient for the professional assigned expert to be called.

Survey, design unit management: Survey, design units used for Plan approval process set first, for the trial manage to be called.

Review Managemen, Common plan approval process is as follows:

Step1: Project receive(the recipient, then the trial list, SMS notification to construction unit)

Step2: Policy Review (policy review for trial materials, policy review submissions, SMS notification to construction unit)

Step3: professional distribution (distribution to professionals and SMS notification for assigned experts)

Step4: technical review (expert technical review, issue technical review submissions, SMS notification to construction unit)

Step5: payment (construction unit fee)

Step6: review (review the un-approval projects by professional experts, issued review submissions, SMS notification to construction unit)

Step7: grant approval documents (technical trial or review approval, and made the payment, issuing construction drawings qualified book)

This seven steps are realized workflow control. Some part of the process, there will be an SMS to inform the construction units, design units or other personnel specialists, send SMS, we use high performance and high stability SMS gateway, gateway-based access provider interfaces developed.

SMS main calling code is as follows:

```
$newclient=new SMS();
$newclient->sendSMS($mobile, $message_ary[$i]."(".($i+1)."/".count($message_ary).")",
$time, $apitype);
echo $newclient->getCode().
```

CONSTRUCTION PLAN REVIEW MANAGEMENT SYSTEM MODEL

USE CASE of diagram construction plan review management system based on the needs analysis and evaluation system, give full consideration to the practicality of the system, create a system of Use Case diagram. After analysis, in the construction plan review management system we want to develop, users including five users with permission (including the entry person, examiner, reviewer, technical leader, manager), unauthorized users, and external database system, its role hierarchy shown in Figure 4.
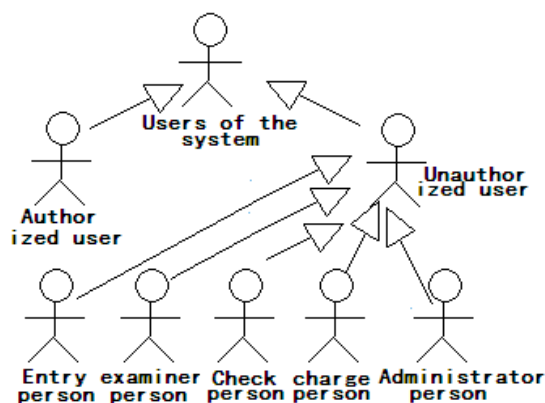
Fig.4: system role hierarchy

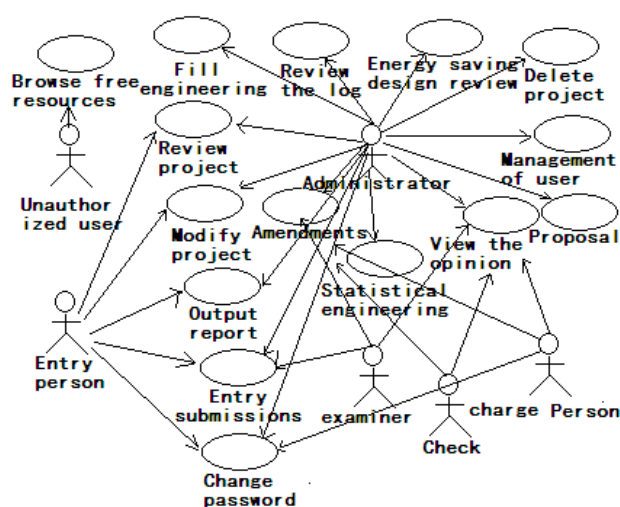Through exchanges with technical personnel, drawn system use case model shown in Figure 5:

Fig.5: Use case model

TIMING DIAGRAM

Timing diagram used to describe the dynamic between objects (Sequence Diagram) the interaction between states, with emphasis reflects chronological messaging between objects, for example, entry of people to interact with event data entry projects are logged in, authenticate users and permissions, open reporting project menu, in order to fill in the information construction unit, fill out reconnaissance unit of information, data and design units, construction-related materials, handling and billing information, fill out the tasks assigned tables, validate fill in the table, submit the form.

COOPERATION

Timing diagram emphasis reflects the chronological order interaction, cooperation plan focuses on reflects the statically linked relationship between the interaction objects, for example, entry engineering collaboration diagram is shown .

COMPONENTS

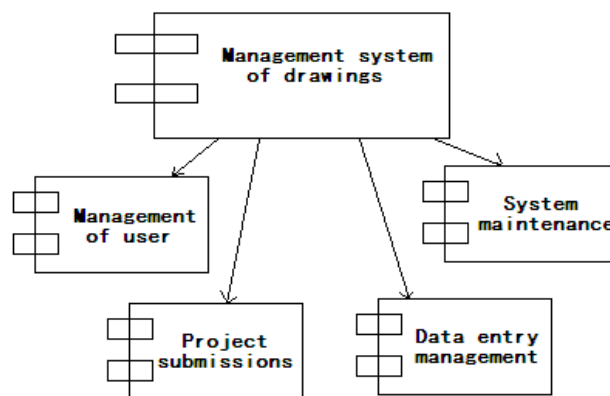Component diagram construction plan review management system is shown in Figure 6.

Fig.6: Component diagram

LAYOUT

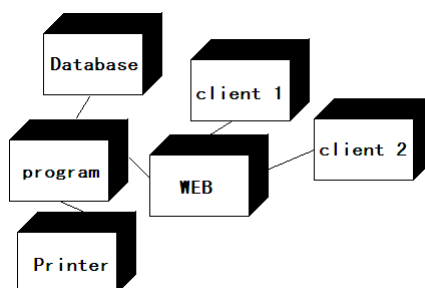Layout of construction plan review management system is shown in Figure 7.

Fig.7: Configuration diagram

SYSTEM SECURITY
DISTRIBUTED MONITORING   SYSTEM DESIGN

Distributed monitoring system is mainly achieved the local information system security audit and monitoring functions, include application system monitoring and database monitoring.

DATABASE SECURITY MONITORING

Because the system has a plurality of database tables, the system how to access multiple database tables, for system security is a major problem to be solved. We use distributed monitoring to solve the problem. Here are the design and implementation of database monitoring function.

As long as we know what the people at what time and where the data is carried out on how the operation, record the operating users, objects, time and behavior, operational behavior monitoring can be achieved when database operation. As shown in Table 2.

TABLE2 DATABASE MONITORING CONTENT

	Index	Index to describe
Operation user	The user	The database operator
	Position	user terminal information
	Tool	use of software tools
Time	Time	Database access time
Object	object name	The name is access to database objects
Behavior	type of operation	The type of operation the user access to the database

The drawing review management system safety monitoring using triggers to judge database operation statements, authority operation and database object operation, and the results are automatically written to AUDMYM table, trigger-based monitoring without having to modify the application, the application system monitoring methods for transparent style.

SYSTEM APPLICATION MONITORING

The main achievement of system monitoring, is processing operations of core business increasing and modify and

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monitoring identifying of large transactional operations of relatively consumed system resources.

SYSTEM LOG MONITORING
Operating system running logs, database alter log, and application log are the most influential types of logs. By identify and monitoring these log files to extract valuable information for the normal operation and identify of the system, to identify and monitor and alarm illegal or suspicious behaviors.

MONITORING INFORMATION PROCESSING STORAGE
After filtered the information collected from the database application and system log monitoring system, you need to save to the monitoring database, to provide online analytical data for the system security administrator, to provide data for SMS of critical security events and email alert functions.

ELECTRONIC SIGNATURES
Drawing a digital signature of electronic documents transmitted over the Internet, and its technical implementation process, first online authentication, and then signed and, finally, the signature verification.

CERTIFICATION
Identification and authentication, is ensure the entity is entity as his own statement. The premise of Certification is has certification issued by the chart center, using one-way authentication. Experts are queried and obtained from the directory server. After obtaining the certificate, first with the root certificate CA's public key to verify the signature of the certificate, the certificate is verified by showing a valid certificate issued in trial center. Then check the validity of the certificate and check whether the certificate has been voided (LR C checks) into the blacklist.

DIGITAL SIGNATURE AND VERIFICATION PROCESS
After complete the drawing trial of electronic document review, expert signed signature and verified. digital signature and verification process and the principle of technology achieve shown in Figure 8.
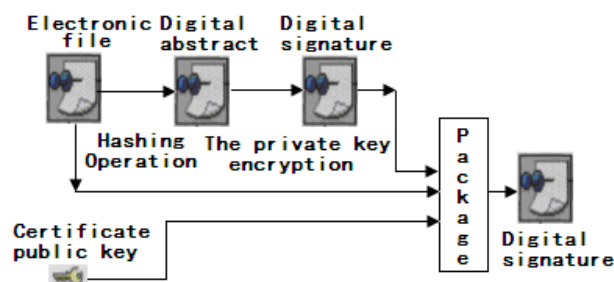

Fig.8: The digital signature process

As FIG shows, digital signature process has two parts: the left side is the signature, the right is verification procedure. That it uses a hashing algorithm to obtain the digital abstract, digital abstract with signature private key encryption have a digital signature. The receiver uses the same hashing algorithm to get a new digital abstract.

DIGITAL SIGNATURE VERIFICATION
Approval Center verified signatures after received results of signature sent from the experts, first with the public key of sender to decrypt the digital signature, export the digital summary and using the same hashing algorithm to get a new digital summary of the electronic files, comparing the hash value of the two a summary of the results, the result is the same, signature is verified, otherwise the signature is invalid. This was done as "electronic signature law" required the signature can not be changed, requires the content and form of the signing not be altered.

DIGITAL ELECTRONIC SIGNATURE ROLE
If the Approval Center for plan approval sender digital signature authentication is successful, you can explain the following three substantive issues: the electronic document is indeed signed by the sender, the electronic file from the sender. Because, when signing the electronic signature data is controlled by the electronic signature person; be signed electronic document indeed sent after the signature of the sender, indicating the sender's private key used for his signature, and has been verified. Achieve undeniable purpose; electronic documents are not changed by the recipient, maintaining the integrity of the data, because any changes after the signing of electronic signatures can be found in the mass composition.

The above three points is on the "Electronic Signature Law" stipulated "secure electronic signatures has the same

effect as handwritten signature or seal" a concrete manifestation.

CONCLUSION

This article describes the database design and software design of construction drawing review management system. The construction plans review management system via remote access information network, you can understand the relevant policies and review procedures of construction drawing review, and workflow, more important is the county (district) building department and construction units can query the progress of each project review in real-time and download projects review comments. The review has become more convenient and faster. Meanwhile through the information network platform, to carry out construction plan review technical exchanges, disclosure information on the latest construction plan review in time, to achieve a paperless management, networked office. It changed the traditional way of construction management plan review, to achieve the transparency, standardization and networking of construction drawing review.

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