Implementation of a Comprehensive Information Management Platform for Public Security Based on Java Technology

Jin Xue, Yali Yuan

Hebei North University, Zhangjiakou, Hebei, 075000, China

Email: 923565911@qq.com

Abstract

Due to the rapid development of electronic information technology, the development of Internet technology and system software development technology has become more and more common. Especially, along with the development of public security, there are more and more provisions for standard administrative department management system, improving office efficiency and enhancing decision encouragement. Therefore, it is of great practical value to design and complete a comprehensive public security business information system. Based on java technology, this paper designs and builds a comprehensive information management platform for public security through the analysis of comprehensive public security business, and also gets good feedback during the actual test, which confirms the feasibility of the system.

Keywords: Public Security; Comprehensive Business Information System; Java; Workflow; Web Information Security

In today's society, the rapid development of science and technology has well promoted people's productivity level and social and economic development. High-tech reforms, marked by information technology, have caused profound changes in all sectors of society", technological progress, especially the development of information technology and its widespread use in police work, has greatly improved the fighting ability of public security teams and tested the traditional public security operation mode of public security administrative organs as never before. At a certain level, the public security work is facing a new public security reform.

1 INTRODUCTION

1.1 Concept of Management Information System

Management information system should be a system combining human and electronic computer for all-round management of an organization (enterprise, company or unit) Management information system is not only a technical system, but also a social development system, which involves system planning, development, management and application of information technology tools, the main purpose of which is to help us carry out all daily tasks related to information processing information management methods. As an interdisciplinary discipline, the important purpose of MIS is to maximize the use of information and communication technologies and electronic computers to enhance the information management within the company, to create the appropriate data and information corresponding to the mastery of the company's internal resources including people, money, materials, machinery and equipment, technology, etc., to analyze and solve it, and to immediately compile a variety of information materials to facilitate the distribution to managers It is convenient for them to make correct decisions.

1.2 Characteristics of Management Information System

A management information system corresponds to several electronic device data processing method systems, each system has corresponding management responsibilities, electronic device modeling system can replace people to

carry out traditional data processing method work, such as material supply, accounting and other aspects of work
B. Management information system is to provide services in the face of structured decision-making. Structured decision-making means that on the daily work, can be predetermined, rhythmically traceable decision-making individual behavior. From a macro point of view, a management information system has all the characteristics of a system. Generally, the management information system of an enterprise is composed of thousands of high level systems, involving sales and marketing, manufacturing, materials, human resources management, accounting and other aspects. In order to achieve the overall management approach goals, each subsystem must be interdependent and form a unity. In all life cycle, from development to operation, the way and method on the system's idea is shown in the management information system.

1.3 The Development Mode of Management Information System

The development mode of management information system has been innovated along with the development of electronic information technology and Internet technology, where four modes have been formed: server terminal device mode, network memory mode, remote server/web server mode, and computer browser/web server mode. Because the hardware configuration selection is relatively limited, the server terminal equipment method has been gradually eliminated. This method is only for the smaller-scale local network, for more customers, the phenomenon of large amounts of data caused by network blockage, will soon be replaced.

2 CONSTRUCTION REQUIREMENTS AND ANALYSIS OF PUBLIC SECURITY INTEGRATED BUSINESS INFORMATION SYSTEM

2.1 System Construction Goals and Principles

The purpose of the system construction is: according to the planning and implementation of the "Golden Shield Project" of the Ministry of Public Security, actively promoting information collection and electronic application in accordance with the technical standards of public security information construction across the country, establishing an all-round software system for the local area network of public security units, carrying out networked management of various business processes in the units, completing the office system and electronicization, and having services such as information collection, transmission, storage and analysis, providing convenient, rapid, accurate, flexible and versatile comprehensive information application for the unit's internal structure, completing information interaction and resource integration and sharing among various sections of the unit's hospital, and providing assistance to public security administrative organs for actual combat exercises enterprise overall combat, rapid response, dynamic management and scientific decision-making. The construction of public security integrated business information system is usually the construction of application system, whose core content is the development and application of information resources, and the essence is to complete the integration and sharing of information resources. **System construction principles are following:**

(1) Application-oriented and demand-oriented.

Based on the actual work of public security, demand-oriented, application-oriented, actively study the mechanism of public security work, improve and standardize the workflow of public security, accelerate the application of information technology, drive the construction of public security informationization, and comprehensively improve the combat effectiveness of public security team.

(2) Highlight the key points and improve them gradually.

Insist on high starting point, high standard and coordination between practicality and advancement, determine work priorities based on the work situation and existing basic conditions, and focus on solving the urgent problems in the work by starting with the easy ones and then the difficult ones. And we should do what we can, gradually transforming and supplementing in the actual application, and constantly improving the system.

(3) Standardize the standard and ensure safety.

To follow a unified standard for system construction, to ensure network interoperability and information sharing. Adhere to the policy of active defense, comprehensive prevention, correctly handle the relationship between system construction and security, and strengthen the construction of security technology and security management system.

2.2 System Configuration Requirements

Functional analysis of the integration system, fully consider the stability of the system, security factors and future scalability, executability, scalability, all systems are recommended to use the computer browser / web server (B / S) architecture design, the actual hardware. The hardware can be equipped in accordance with the actual functional provisions of the cloud server to determine; to ensure the stability of the database service and database security, it is recommended to use a two-computer network server system with disk arrays, and configure a large space very high reliability of the recording with database backup system.

System development reason should be used to perfect, universal development of special tools; to now the most popular TCP/IP for the Internet's most underlying communication protocols, with a rich role in connecting the network; database system using effective and reliable, powerful and popular database system; system should be configured with trusted anti-virus, network firewall and other facilities to enhance system security.

3 PLATFORM DESIGN

3.1 Platform Construction Principles

1.Unified planning and integration of resources

It should comprehensively coordinate the information development among various departments in the internal structure of public security, integrate proper guidance and participation of private forces, and discourage blindly following the trend of basic construction, heavy summer construction and wasteful phenomena. From the overall consideration of Guizhou Province, get rid of multi-headed management, unify - overall planning, unified standards, division of labor, complementary reciprocity, stimulate the initiative of all aspects, promote intensive construction, promote Internet data sharing and information resources integration and sharing.

2.science and technology and business closely integrated, the depth of information applications

Scientific and technological progress is the first productive force, and scientific and technological progress is also the first combat capability, which plays an important role in shaping independent innovation, supporting development trend and leading innovation in public security information link. Scientific and technological progress should be based on the operation of public security, closely integrated with the construction of public security information application mechanism according to effective methods, closely integrated with the demand of public security projects, closely integrated with the shaping of scientific ideas and the criminal police team with innovative power, and closely integrated with science and technology and business.

3.Take the development of electronic policing as an opportunity to reform the mechanism and system

The essence of smart government is to promote the reform and development of government governance, just a simple "information copy" of the current system, management mechanism and workflow may make the construction of e-government go off course. According to the informationization of public security, we should be innovative and brave enough to gradually reform, innovate and optimize the management mode and organizational system of public security.

4. Regional balanced construction, innovation leads development

Strengthen the guidance in the process of information technology construction, improve the balance between the excellent global situation and the lagging global situation, promote the construction of information technology infrastructure regional balance of basic construction, and gradually reduce and remove the rich and poor divide. Stimulate technological innovation, play a speciality to fully support the development, use and application of new up information technology sex demonstration, to promote the development trend of information technology high-grade.

3.2 Overall Architecture Design

1) Structural Framework of the Platform

The public security comprehensive information management method platform analysis and design is divided into five levels from bottom to top: basic communication system, hardware configuration infrastructure construction, data information platform, public culture service platform and business information system. On this basis, the

comprehensive information system is built in the paper. The overall platform consists of "three systems" and "five levels". The three systems include: standard specification system, management method and operation mechanism, and security measure guarantee system; the five levels include: infrastructure layer, data access layer, application carrier layer, business system layer, and presentation layer, and the structure and structure of each level are relatively independent, and the next level provides support and service for the previous level.

2) Division of Platform Modules

According to the demand analysis of the system, the integrated information management platform includes the following application business systems:

(1) receiving and handling police system

It is the first dialog box for the whole country; it is the first personal behavior of public security to respond to social development. Under the role of "large intelligence and information" system of public security, the transmission network of the bottom section and team has been popularized in all aspects, and the collection, application and maintenance of information have basically completed the steps of informatization, and the transmission, collection and sharing of various information will promote the standardized and modernized development of various types of public security operations and thus improve the overall combat and crisis handling professional ability of public security administrative organs. This will improve the overall combat and crisis management capabilities of public security administrative organs. Therefore, a safe and efficient information management system is needed for receiving and handling police.

(2) Proximity Command System

It is mainly used to assist command center commanders and on-the-spot commanders in deploying staff energy and guiding accident processing work. On-site commanders to carry out summary analysis of the scene data, and then integrate GIS maps, three-dimensional real-world data information, nearby element information, efficient, targeted deployment of staff energy; in addition, the command center commanders can also be carried out according to the actual situation of several units of excitation, personnel distribution, rescue route and chase route deployment and other related work, quickly and efficiently complete the work task, the maximum Reduce casualties and national people's property losses.

(3) Pre-planning management system

Through the combination of Java and three-dimensional realistic scenery, the key area facilities are marked in the GIS map, and the corresponding icons are set to quickly and conveniently reduce the work link of personnel plan making and auditing, and improve work efficiency.

(4) Rapid information retrieval system

As the public security departments have other OA systems or other data and information management systems, they have reserved standard interfaces for the rapid information retrieval function, so that the system can fully realize cross-database data retrieval, thus avoiding duplicate construction and reducing investment costs.

(5) Permission management system.

Realize the permission allocation and role division of platform users, and better control users' access to the platform.

(6) Basic data information maintenance.

The basic data guarantees the effective and stable operation of the system platform.

4 REALIZATION OF PUBLIC SECURITY INTEGRATED BUSINESS INFORMATION SYSTEM

The first step in the development of the integrated public security business information system is the initialization of the project. In the initialization of the project, the following steps are required:

Step 1: Use the development tools to create a new Project, and Struts, Spring and Hibernate initialization configuration;

Step 2: Integrate Struts, including the definition of the Servlet in the Web deployment file, copy Struts and its required class libraries to the project's WebRoot/WEB-INF\1ib directory, create the initial Struts configuration file;

Step 3: Integrate Spring, including the Web deployment file by defining the Servlet to initialize the IoC container in Spring, copy Spring and its required class libraries to the .WebRoot\WEB- INF\lib directory and initialize the IoC container configuration file.

Step 4: Integrate Hibernate, on the one hand, by configuring the initialization parameters of Sessi onFactory in the Spring IoC container, and on the other hand, by copying Hibernate and its dependent libraries to the project's WebRoot\WEB -INF\lib directory.

The above steps can be done by using the development tool MyEclips4 for proper configuration. After the initialization, it is time to start the implementation of the system.

According to the results of the previous system analysis and design, the system is developed using struts + spr ing + hibernate technical architecture, Struts to achieve the representation layer, Spring framework for the business logic layer, in the data persistence layer mainly using Hibernate.
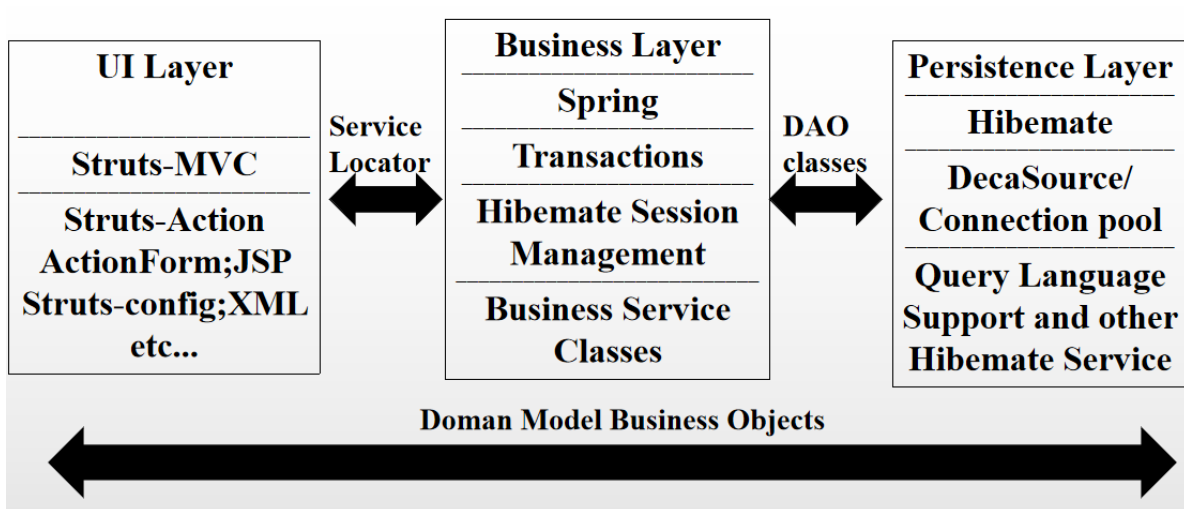
(i) Configuration of the domain model layer

The key is to build a comprehensive domain model, the objects in the domain model may move with each - layer of the Web application. The domain model can be built to know what information must be distributed and locked, what business processes can be provided, and what design solutions are needed for the representation layer web pages. Since the objects within the domain model layer will interact with each - layer of the Web application, and each layer will use such Java objects, a separate file directory can be used to store such objects, i.e., a separate package can be applied. Moderate package names can make the Web application hierarchy more clear, easier to pinpoint and deal with the problems in development. In this system, the package is divided according to the program module, the first half of the package name is the system software level in which the package is located, and the last is the program module of the package.

(ii) Configuration of the persistence layer

In the Hibernate persistence layer, to be equipped with distributed locking domain model objects, that is, to write each distributed locking object HBM document. Hibernate is based on XML (that is, HBM documents) to achieve the curry of Java objects to the relational database projection. In this case, an XML document is used to represent the receipt object in the Document Processing Control Module, and the mapping file of the database table corresponding to the receipt object on the DocumentReceive.hbm.xml file is described in Attachment B. The mapping file is stored under src\com\xxx\document\receive\bo. After equipping the receipt object completes this object to the official document processing control module database projection.

(iii) Development and configuration of the business layer

A business approach generally contains the implementation of business logic, enable the persistence layer approach, get customer requests from the representation layer, carry out database transaction management and its error handling and a series of roles in the Spring framework can be more convenient to these aspects involved in the specific content according to Bean management tools to regulate, but also to minimize the complexity of the process and coupling . Spring based on flipping manipulation (IoC) or set the dependency injection (Dependency

Injection) will be equipped in the expanded XML file of those objects combined, which can freely build a variety of objects and reduce the overall coupling. The business approach is to accept the objects it needs through a series of setter methods, so only the corresponding socket setter methods need to be defined here. The advantage of this is that it enables loose coupling between objects at all levels without having to pay attention to how these sockets are promoted.

CONCLUSIONS

The scientific work in this paper basically discusses how to develop a comprehensive business information management system for public security organs according to Java, and proposes the application of the most popular struts spr ingthibernate architecture composition technology at this stage to realize the design and completion of the control system on the premise of a comprehensive understanding of the actual needs of the business of public security organs, which has strong practical significance and generalizability.

In addition, the information security technology commonly used in the development of the system is another hot topic in the development of information management system of public security organs at this stage, in addition to the scientific research on its application. Public security organs all over the country can adopt necessary security measures according to their own specific conditions and refer to the treatment in this article to ensure the security and confidentiality of key information resources.

Some sub-projects of this system have also won awards in the competition organized by the Ministry of Public Security in the past two years, and have been affirmed by the experts of the Ministry.

REFERENCES

[1]   Indonesian Police Nab Key Terror Suspect[J]. Asian defence journal,2010(Jul./Aug.):1.

[2]   At least 3 drown, 157 rescued off Java[J]. IHS safety at sea,2013,47(Sep. TN.535):7.

[3]   SUPRATMAN AGUS. Prediction of Actual Fatality in Big Cities of West Java Province based on ANN3-1HL Model Developed from the Multivariable ANN Model for Fatality Prediction in Indonesia[J]. Journal of Engineering & Applied Sciences,2018,13(10):3463-3471.

[4]   SRI KUSSUJANIYATUN, ASALIA NOOR HANJANI. The Role of Public Relation in Adopting Stakeholder Engagement Model in Creating Corporate Social Responsibility (Study: Pertamina, Ltd., RU IV Cilacap Central Java Indonesia)[J]. Journal of Engineering & Applied Sciences,2017,12(22):5905-5909.

[5]   ZHANG, YUE, BROWN, DONALD E.. Police patrol district design using agent-based simulation and GIS[C]. //2012 IEEE International Conference on Intelligence and Security Informatics : Cyberspace, Border, and Immigration Securities: 2012 IEEE International Conference on Intelligence and Security Informatics (ISI 2012), 11-14 June 2012, Washington, DC, USA.:Institute of Electrical and Electronics Engineers, 2012:54-59.

[6]   ANONYMOUS. Accident characteristics on rural road in northern corridor of west java, indonesia[C]. //2nd Asia Pacific Conference & Exhibition on Transportation and Environment v.2. 2000:1053-1063.

[7]   SUN, CHUANQUN, SHEN, QING, YANG, YANG. Research on security solution based on java web application[J]. Basic & clinical pharmacology & toxicology.,2019,124(S1):37-38.

[8]   JOE WINCHESTER. How Much Is that Buggie in the Program?[J]. Java developer's journal: JDJ,2005,10(7):52-0.

[9]   SRI ANDARINI, DEWI RACHMAWATI, DEWI K NINGSIH, et al. 3rd International Conference in Nursing (ICON), 20-21 May 2017, Indonesia.[J]. British journal of nursing: BJN,2018,27(16):961-962.