Design and Implementation of Heilongjiang National Tax Information Service Exchange Platform based on Web-Service Technology

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Abstract. This paper focuses on the specific application of Web Service Technology in Heilongjiang national tax information service exchange platform, and discusses the level division of the platform and data transfer technology. This technology has positive significance for the national tax management of Heilongjiang Province.

Keywords: Heilongjiang National Tax, Information Service Exchange Platform, Web-Service Technology, Design and Implementation

1. Introduction
Tax law enforcement power is a public power granted by the state to tax departments. The implementation of national tax policies relates to national macro-control and the realization of financial functions, which directly affects the realization of the rights and obligations of both tax collectors and payers, and is also an important factor in the risk of tax law enforcement[1]. Therefore, how to effectively supervise and control tax law enforcement is an important issue that tax authorities at all levels pay close attention to and urgently need to solve.

Legislation and law enforcement are closely related. Legislation provides the necessary legal basis for law enforcement and is the premise for tax authorities to carry out law enforcement. It is not persuasive and unrealistic to talk about tax law enforcement without tax legislation. To discuss the problems in tax law enforcement, we should first analyze the problems that are not conducive to the effective law enforcement of tax authorities in tax legislation[2].

2. Analysis of Tax Administration
Tax authorities and citizens are the subject and object of taxation. The effective law enforcement of the subject of taxation is also affected by the object tax behavior. Citizen's tax consciousness is also an important factor that affects tax law enforcement. A higher citizen's tax consciousness will promote tax law enforcement smoothly[3]. On the contrary, a lower citizen's tax consciousness will bring considerable resistance to tax law enforcement. At present, our citizens' awareness of tax payment is
shallow, and the initiative of tax payment is weak. The phenomenon of citizens' intentional or unintentional non-compliance with tax laws is widespread. Disguised phenomena of stealing, escaping, deceiving and resisting tax occur from time to time.

The reason is that citizens' tax consciousness is closely related to tax consciousness of tax authorities and tax consciousness of government departments. In our country, the tax authorities often take the state tax collectors as their own selves, impose taxes on the taxpayers, even infringe on the legitimate rights and interests of the taxpayers at will [4]. The awareness of the tax authorities to "serve the taxpayers" is weak. As a tax user, the transparency of tax arrangement and use is not high, the efficiency of tax use is low, the phenomenon of tax waste is serious, and taxpayers cannot enjoy their due public goods and services. It can be seen that the low awareness of tax collection and use of tax has resulted in the superficiality of citizens' awareness of tax payment.

For the above reasons, we need a tax law enforcement management system to ensure the operation and supervision of the tax department.

3. Requirement Analysis

In software architecture design, layered structure is the most common and important one [5]. The hierarchical structure recommended by Microsoft is generally consists of three main components, in addition to data access and business processing, as well as parts for interpretation and representation.

The combination of three parts is a complete three-tiered process, in which the business logic layer has the largest volume of function, which is responsible for the most basic and main functions of the system, and analyzes the logic of handling business [6]. The function of the data access section is much more single, it is responsible for database management and data collection, call and delete. The presentation tier is only for the display of the page. Figure 1 shows the three-tier architecture.

![Three-tier Architecture](image)

**Figure 1.** Shows the Three-tier Architecture of this System

Indicates that the layer is at the top level, which is the layer directly faces the user. Page graphics, text, forms all belong to this layer.

The most important part of the information exchange platform system is the business logic part, and the design of this part is the most complex, so it is necessary to classify all kinds of business, and also to take into account all branches of business, and also to sort out the processing process of each business so that it cannot be disordered in the process of operation. Business logic layer plays a key role in the architecture. Its design should be based on the principle of humanization, as far as possible to make the interface simple and easy to understand, easy to operate, reduce the possible errors of the program, and speed up the loading of the program, so that users on the self-service machine can also experience the meticulous service.
The business logic part is between the data management and the representation, is the data input and the outgoing transfer station. It also is the data exerts the function place. Upstream of the design process is a fully non-essential condition downstream, so the process has a particularly flexible opportunity to modify and perfect in the later stage, and the top-down influence makes the upstream process change completely without affecting the execution and output of the downstream process. The business logic layer also plays a different role for the other two parts. It can call and update the data of the database, or it can transfer the data to the representation section, which is displayed from the display. These are the internal structure flow of the information service exchange platform, and there are still a lot of relationships outside the platform that need to be sorted out by the designer, otherwise it will cause external confusion and affect the processing efficiency. Data access layer, sometimes referred to as persistence layer, is mainly responsible for database access and can access database system, binary file, text document or XML document. The simple way is to select, insert, update and delete the data table.

4. System Architecture Analysis

Personal office environment includes personal attendance, worker plan, schedule management, address book, internal mail, complaints, personal data, Notepad, news, my meeting, etc. The circulation of official documents mainly includes the formulation of working process, so as to standardize the tax law enforcement work and record the law enforcement work more profitably and effectively. In this tax law enforcement management system, the information exchange module is embodied in the form of BBS, including the main functions of entering the forum, maintaining the forum categories, maintaining the forum sections and so on. The design of shared hard disk module is mainly because the tax department will share many documents and information, which can effectively improve the efficiency. The shared hard disk module can create, delete and modify folders. Users of the system can upload and download corresponding documents in corresponding folders. In the work of tax related functions, there will be corresponding meetings. In the past, when a meeting needs to be held, it is in the form of telephone or email to notify. See Figure 2 for details.

The system adopts B / S architecture design. It centers on accessing web database, HTTP is the transport protocol, and clients access web server and its connected background database through browser. We call it B / S (Browser / server) mode. Its three-level structure is shown in Figure 4-6, which is divided into three levels: The first level provides users with a login system to access browsing, which is the static interaction between the user and the software background. After entering the browser, users can inquire about their tax information. The user clicks the corresponding function, and the Web server displays the contents of the user's request on the browser through the most commonly used protocol of the computer for the user to consult. The second level is the core function part of the software, and it is also the page where the information platform interacts with the user. When the user clicks on the corresponding function, the Web server also establishes the connection between the user and the background database, starts the corresponding service function, and feedbacks the operation result to the user. The third layer is also the third part of what we said before. The database server processes independently at the request of the client.
5. Summary
The tax law enforcement management system based on web is a tax law enforcement management system for the purpose of monitoring and supervision, including the monitoring and assessment of daily tax collection and management business, as well as the investigation of fault behavior of business personnel. The system can improve the level of tax law enforcement, effectively improve the efficiency of tax law enforcement process, and promote the tax authorities to administrate according to law. To a large extent improve the efficiency of the tax law enforcement process. It is a tax law enforcement information system with great promotion value.

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References
[1] Allison Rosalie, Hayes Catherine, McNulty Clidona A M, Young Vicki. A Comprehensive Framework to Evaluate Websites: Literature Review and Development of GoodWeb.[J]. JMIR formative research, 2019, 3(4).
[2] Hoffman Aubri S, Bateman Daniel R, Ganoe Craig, Punjasthitkul Sukdith, Das Amar K, Hoffman Derek B, Housten Ashley J, Peirce Hillary A, Dreyer Larissa, Tang Chen, Bennett Alina, Bartels Stephen J. Development and Field Testing of a Long-Term Care Decision Aid Website for Older Adults: Engaging Patients and Caregivers in User-Centered Design.[J]. The Gerontologist, 2019.
[3] Notice to Public of Website Location of Center for Devices and Radiological Health Fiscal Year
2020 Proposed Guidance Development[J]. The Federal Register/FIND, 2019, 84(199).

[4] Geng Xiangyi, Zhang Yueping basic course of XML (2nd Edition) [M], Beijing: Tsinghua University Press, 2012, 30-70.

[5] Dai Huaxiu, research on data encryption technology based on e-commerce security [D], Nanchang Aviation University, 2011.

[6] Xu Bin, research on MES based information exchange platform based on Event Driven Architecture [D], Shanghai Jiaotong University, 2013.