Research on the Application of Computer Informatization in Human Resource Management

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Abstract. Personnel Management Information System (HR-MIS) has played an active role in personnel management, but most of them are limited to the modular management of queries, and have certain professional knowledge requirements for users. Traditional personnel file management adopts manual information entry method, which is inefficient and error-prone. The personnel file management system based on the B/S mode is designed with WEB form, and the personnel file entry, query and rewards and punishments are managed in a networked manner, which simplifies the personnel file management procedures and reduces the work intensity. The aim is to increase the communication and understanding between managers and employees through the design and implementation of this system.

Keywords: Computer informatization, human resource management, personnel management information system, B/S model.

1. Introduction
With the continuous improvement of science and technology, computer science has matured day by day, and its powerful functions have been deeply understood by people. It has entered various fields of human society and is playing an increasingly important role. As a part of the computer application, the use of computers to manage unit personnel information can greatly improve the efficiency of personnel management, and it is also an important condition for the scientific and standardized management of the department to be in line with the world. In order to reduce the personnel management burden of the unit and improve the overall work efficiency of the unit, the development of this system is considered to provide the unit with a convenient and quick personnel management system. In an enterprise or institution, there are three important management systems, namely personnel management, material management, and financial management. However, the personnel department has more transactional tasks and is more cumbersome [1]. The establishment of a scientific personnel management system will improve the efficiency of work. Help managers to get rid of heavy and complex transactional work, improve the management level and competitiveness of the company, and obtain accurate and applicable personnel management data in a timely manner.
2. Overall system design

2.1. Demand analysis of personnel management information system

2.1.1. Specific goals. According to the company's personnel structure and the needs and development of daily personnel management work, the entire system should have the following goals: a) timely and accurate preparation of various personnel reports and auxiliary statistics of one-time personnel data reports; b) conduct various personnel Random query, modification, deletion and insertion; c) Auxiliary calculation of salary adjustment plan; d) Statistical data of various stages can be saved for planning and forecasting use by supply personnel.

2.1.2. Features of the system. This system has four basic characteristics: a) The original data of the system can be used by other subsystems, so that data sharing has a comprehensive effect; b) The system is unified up and down, left and right, and meets the requirements of higher-level agencies and meets the requirements of the enterprise [2]. Functional department requirements; c) Each functional module of the system can be operated independently as needed; d) It conforms to the basic characteristics of MIS, costs less, does more work, and is efficient.

2.2. Business process description

The personnel file is a detailed record of all the basic conditions of each employee during his life, and must be managed in strict accordance with the management regulations. As the personnel file involves confidential management, the personnel management department should assign special personnel to manage it. This person is fully responsible for the staff's file filling, integration and binding, loan and return records and daily storage, etc., and does a good job of confidentiality.

The loan and return of archives must strictly abide by the archives management system. Personnel archives should only be reported to the leader for application when the position of the person concerned is promoted, transferred, or involves rewards and disciplinary actions, and can be borrowed after obtaining the approval of the leader, and must be returned as soon as possible. Except for special circumstances, other things cannot be borrowed casually.

No person can modify the original records in the file. The personnel file management system mainly records the personal data of employees, and uses the system to find the personal information of employees. The required content can be counted and printed in the form of reports. come out.

2.3. Overall design

The personnel management information system is an effective tool to assist the personnel management department in making decisions and planning. This system includes not only a database management system for specific worker and cadre information, but also techniques and methods for input, organization, storage, extraction, and output, namely information addition, deletion, modification, query, statistics, and various roster printing. The workflow of the preliminary determination system is shown in Figure 1.
Figure 1. The overall architecture of the enterprise personnel management system

The collection of the original data is done manually. After the standardized information is formed, it is passed into the system from the "input system" to form a standard data file, and then necessary data processing is performed based on this file to form an information product. This system strives to be scientific, practical, independent, and shareable [3]. The so-called scientific nature refers to the scientific definition, specification, and coding based on computer science, management information system, system design and other relevant materials; the so-called practicality refers to the design of information items under the premise of meeting actual work requirements and system functions, the content is complete and refined, the definition is appropriate and clear, the coding is reasonable and simple, and the operation is feasible and practical; the so-called independence refers to the uniqueness of the data items, codes, definitions and interpretations in the design of the system; the so-called sharing refers to the full consideration of Compatibility with other related information systems, reducing unnecessary waste of resources and duplication of data entry.

2.4. Main functions of the system

2.4.1. Personnel files. The personnel file information includes basic information, academic qualifications and degrees, rewards, punishments, professional skills, job changes, education and training, expert information and other standard databases. Users can freely choose, edit or redefine according to actual needs and development needs; according to employees’ adjustments Establish a change account of personnel files for business such as entry, employment, appointment, removal, transfer, exchange, assignment, going abroad, reward, punishment and transfer.
2.4.2. **Salary management.** The salary management system provides reliable and flexible large-capacity processing tools. The payroll accurately and timely reflects the required payment cycle every time; the system internally performs salary entries according to the industry, for example, you can customize the basic salary according to the actual situation of the institute [4]. Various items such as live wages, scientific efficiency allowances, military subsidies, and personal income taxes, while allowing users to redefine and modify flexibly; before changing wages, you can run a simulation adjustment program.

2.4.3. **Human recruitment management.** Tracking and hiring excellent employees are the foundation of success. With the help of human recruitment management functions, users can build a database of candidates; use continuous forecasting models and Markov models to analyse and plan job requirements; prepare recruitment plans and track all recruitment data (including candidates' skills, qualification requirements, and recruitment Expenses, etc.); establish an electronic archive linking resumes and photos.

2.4.4. **Title and position management.** Title and position are the basic information in the personnel file. Title and position management is an important business in personnel work. HRIS will list this business separately for management; register the job title and job information, and record the changes; provide job titles and A statistical analysis tool for information such as job age structure, professional structure and department structure.

2.4.5. **Social insurance.** Compilation and budgeting of various insurance plans related to housing insurance, unemployment insurance, medical insurance, and endowment insurance; allows users to define and edit the calculation formula of insurance amount according to insurance plans and insurance system regulations; automatically calculate by department and individual It also counts the total amount of various insurances and the amount withheld by employees; connects with the salary management module to automatically compile the deduction plan of the insurance amount for users to confirm or modify.

2.4.6. **Training management.** Help users to compile training plans based on training needs evaluation and training historical data; register training courses, training costs, and test results; query and count the training status of employees; count the company's training resource allocation direction and the proportion of allocation between departments; Automatic calculation and statistics of employee training investment and result information.

2.4.7. **Management of retired personnel.** Register the details of employee retirement and resignation; in addition to regular registration, it also records the retirement pension paid to retired workers and the severance payment paid to retired personnel; in conjunction with the salary management module, it is used to prepare budgets and make a large number of salary changes operating.

2.4.8. **Performance appraisal.** Performance appraisal results are related to personnel recruitment, recruitment, bonus distribution, salary increase, job scoring, job deployment and promotion, and are the core of human resource information system [5]. The HRIS of the Institute will break through the simple evaluation result registration function of the domestic human resources system. In addition to the evaluation record function, it also includes heuristic evaluation analysis tools; it provides the comprehensive scoring method, pairing comparison method, analytic hierarchy method and fuzzy evaluation commonly used in evaluation Law and other tools.

2.4.9. **Attendance management.** Provide employees with functions such as attendance registration, overtime registration and absence tracking; if the salary and bonus plan is related to the attendance rate, the system can automatically calculate the payment information of the salary and bonus according to
the attendance, for the user to confirm or modify; it can be established for all The main rest day chart of the calendar, track attendance according to employees and make schedules for each employee; department heads can query or count the latest information of employees' attendance or overtime by individual or department.

2.4.10. Leadership query. A B/S query module is established based on the Intranet environment, and some overall data and important reports in the personnel management are provided to the unit leaders in an intuitive and concise way such as charts, to assist the leaders in major decisions in business management.

3. Database design

3.1. System structure design
The B/S model adopted by this system is a model for network information transmission based on browsers and servers. The B/S model is a special structural mode of the C/S model. It simplifies the tedious work of the client and no longer allows the client to perform any things that need to be processed. It can be done simply through the browser, and all tasks are left to the server. It can be said that the B/S model is a special form of the C/S model. The B/S model is a product of more and more powerful server functions and more convenient network communication with the development of technology. WEB technology is Internet technology [6]. WEB technology and B/S model are closely integrated. If there is no WEB technology, B/S model is impossible to talk about. The personnel file management system adopts the B/S mode on the Internet, that is, the browser/server mode, instead of the C/S (client/server) mode. All access and management are performed on the browser. Without the need to install the client, the B/S flowchart is shown in Figure 2.

![B/S flow chart](image)

Figure 2. B/S flow chart

At present, there are two modes of WEB development of B/S architecture application systems [4]: Microsoft .Net architecture and Java-based cross-platform J2EE architecture. The required technologies are as follows: basic knowledge of web development, html/DHTML, javascript/VBSCRIPT; database knowledge: oracle, msSQL server and my SQL; web development tools: Dreamarea; graphics development: Photoshop, Flash. The B/S model liberates the client and delegates many things to the server, which not only makes the network messy and clarifies the rights and responsibilities, but also enables the client to do all the functions with only a browser. Given that the B/S model has many advantages and is very suitable for portals, this project will adopt the B/S design model.
3.2. Database and data table
First of all, before embarking on the design of the system, ask users in detail how they view future changes in demand, understand customer needs, make predictions based on users' feedback, and grasp the development trend that the system may face. The second is in order to greatly save time and improve development efficiency in the future development stage, it is necessary to have a comprehensive and in-depth understanding of enterprise business. The third is to pay attention to the input and output design of the system [7]. When defining the requirements of database tables and fields, comprehensive consideration should be given to those tables and fields that are necessary. The fourth is to create a data dictionary and an ER chart. The fifth is to help unify the later inspection and error correction and define standard object naming conventions. Figure 3 shows the E-R diagram of the human resources management system.

![Figure 3. E-R Diagram of Human Resources Management System](image)

After analysing the entity relationship and entity data structure of the database, the following is a clear and specific description of each entity in the form of a table. The primary key in the database table is the unique and non-repeatable value in the table, which has the function of index, and can be used to query other data in the table. We give an example of the employee education information table of the personnel management information system as shown in Table 1:

| Column name          | Data type and length | Can it be empty | Description                             |
|----------------------|----------------------|-----------------|-----------------------------------------|
| WIDELJID             | int                  | NO              | Primary key of education number         |
| WIDUEXPER            | Varchar (200)        | YES             | Education experience                    |
| WSTREDUNAME          | Char (10)            | YES             | Highest degree name                     |

4. Conclusion
The personnel file management system, as an important part of the management personnel and personnel work of enterprises and institutions, provides managers and employees with a one-stop file information management platform with friendly interface, complete functions and easy to use [8]. This paper uses B/S model, WEB window and virtual database to realize the integration and management
of personnel file information resources, which not only reduces the labour intensity of personnel in the personnel department, but also connects managers and employees, and increases mutual communication. It has certain reference value for the effective use of personnel file information and the construction of enterprises and institutions.

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