

Design and Implementation of Data Visualization Management System for College Employment

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Abstract: With the rapid development of science and technology in China and the continuous progress of society, the education system and educational philosophy in China are constantly deepening reforms in order to meet the needs of society. Higher education is an important component of China's education, undertaking and shouldering the mission of delivering high-quality high-tech talents to the entire society, especially the employment situation in universities, which has attracted much attention and attention. Therefore, this paper deeply investigates the current employment situation in colleges and universities, and based on this data, puts forward some thoughts on the design and implementation of the data visualization management system for college employment, hoping to improve the employability of students through the visual management platform, which aims to make contributions to the deepening reform and sustainable development strategy of the college education system and provide some reference values.

Keywords: College Employment Data; Visual Management; System Design and Implementation

1. Introduction

With the continuous deepening of education reform and innovation in educational concepts in China, the whole society has put forward higher requirements for college graduates. The employment management department of colleges and universities handles various employment procedures for graduates every season of graduation. The employment visualization management system is applied in this environment, and has won the unanimous praise of all teachers and students. School leaders can also reposition and reflect on teaching models through employment data, enhance internet thinking, and carry out reforms and innovations in various teaching strategies with the ultimate goal of student employment, helping students effectively find employment. This fundamentally reflects the value of education. Although the data visualization management system for college employment can provide graduates with good information value, in the actual operation process, due to the large number of users, complex data, and some business logic problems that still hinder the stable operation of the management system, colleges and universities need to attach great importance to and work hard to solve them. Therefore, this paper proposes the design and implementation optimization strategy of college employment data visualization management system, effectively optimizes the stability of the system, improves the operation mechanism, emphasizes the management and service effects of college employment data visualization management system and achieves the rational, scientific and efficient integration of management configuration, integrating resources to achieve the effective cooperation between the system and data, so as to highlight the closed-loop effect. This aims to make efforts from various aspects, play a positive role in promoting the employment of college students, and provide a solid backing for the sustainable development of college students. Therefore, the research work on the design and implementation of data visualization management system for college employment has practical significance and far-reaching impact.

2. Design and Implementation of data visualization Management System for College Employment

In response to the problems encountered by the above universities, in order to better assist students in their employment, a visual management system for university employment has been developed to ensure the comprehensive implementation of student

employment work.

Therefore, when designing the data visualization management system for college employment, this paper fully considers the cooperation and coordination with other systems and the connectivity with other related businesses. As the core part of the architecture, the data visualization platform for college employment starts from the following three levels: the system support layer, the production application layer, and the comprehensive operation layer.

2.1 System support layer

The system support layer refers to the physical support of the system, including the management platform and hardware equipment of the system, such as the hardware equipment of the computing network and server room, gigabit Ethernet, switches, routers, computers and auxiliary equipment of various departments and offices. These devices are the physical carriers for the operation of the college employment data visualization system, providing a solid system support level for the normal operation of the college employment data visualization system, and ensuring the daily operation of the logistics system management platform.

2.2 Production application layer

When designing the production application layer of the system, this article considers connecting to the C/S framework, which is the client-server side. The server is responsible for data management, while the client is responsible for completing interactive tasks with users. The production application layer contains recruitment information and related materials published by employers on a daily basis, and is the basic source of system data. In the preliminary preparation, the production operation layer collects specific work information of operators such as employers, students, counselors, and administrators during production, as well as basic data such as graduates' job resumes, personal information, graduate file dispatch information, and recruitment information uploaded by employers. The system uses a database to enroll, store, and use these data, while also conducting necessary processing and circulation. Operators control and record the production process through this layer. It can be said that the production operation layer is the core layer of the data visualization management system for college employment.

2.3 Comprehensive operation layer

The comprehensive operation layer is the level where users use the most, and this layer uses the B/S architecture, which is the browser/server mode. Simply put, it is a working mode in which the user only needs to operate the browser, and the browser receives the user's request and the server starts responding. After logging into the system, system administrators can perform a series of basic operations on the system, such as adding, deleting, modifying, and querying information and personnel. In addition to this basic function, a system of algorithms can be added according to the characteristics of the college employment data visualization management system and the requirements of the school to develop targeted functions that adapt to the college employment data visualization management system, such as dynamic matching of employment information and quick locating of employers and students. A specific period of time can also be selected, and the data of this period can be generated into a report form for school leaders to analyze and predict, so as to adjust the employment guidance work ideas for students. The data visualization management system for college employment as a whole achieves visualization and graphical query of all kinds of information, providing accurate data for college decision-making and business levels. Under the support of historical statistical data, the comprehensive operation layer makes employment prediction, decision analysis and other functions through data analysis to meet the employment needs of port colleges and universities. In addition, this system also has two main characteristics:

The first is the ability to share data. The data visualization system for college employment has a large amount of data, many attributes and complex contents. Therefore, when developing and designing the data visualization management platform for college employment, the flexibility and portability of the system should be fully considered, and the data sharing ability of the system with other enterprises or recruitment systems should be strengthened to increase the cooperation between various platforms. Sharing data can improve the work efficiency of employment platforms to a certain extent. At the same time, reducing the amount of redundant data can also reduce the difficulty of operating users, and by integrating the timed task function and setting the system to clear dirty data every other period of time, the system's running speed can be improved, thus increasing the system's performance and greatly saving the maintenance time of the information system.

The second is safety prevention and control capabilities. Due to the particularity of its work content, data visualization of college employment involves the privacy of many enterprises and personal data. Therefore, when designing and developing the data visualization management system of college employment, the system's security prevention and control capabilities should be taken into account. This not only requires installing a firewall on the computer for physical protection, but also considering adding some anti vulnerability attacks and dynamic interception functions. In this way, when hackers or criminals want to attack the system to obtain

system data, the system can immediately capture the attack information and take defensive measures, activate automatic power off mode, or immediately report the attack message to the system administrator. After receiving the notification, the system administrator immediately takes effective measures to block attacks from external forces and protect the security of the system.

3. Conclusions

In summary, the rapid development of China's national economy signifies that we have entered an era of technological advancement. Science and technology are undergoing rapid changes, subtly influencing and changing people's cybersecurity lifestyles, especially the integration of electronic technology, information technology, and other technologies, providing innovative impetus and technological upgrading space for the acquisition, transmission, processing, and expression of industry information. Science and technology have ushered in a new era of intelligence, changing the way information is disseminated and expanding the scope of its dissemination. As a result, we have officially entered the era of technological change, so this paper has repeatedly discussed and studied the employment process on the basis of in-depth college employment research, and proposed the design idea of data visualization management system for college employment, which enables universities and enterprises to plan and effectively arrange student employment and recruitment work based on modern computer technology, achieving high data sharing between recruitment platforms, simplifying the workflow of operators, and greatly improving management efficiency and effectiveness. Meanwhile, however, on the road of popularizing the data visualization management system of college employment, there are still some practical problems to be solved. The gap is mainly reflected in the fact that many complex businesses are still not fully informationized, and many staff members' business thinking is still in the stage of manual processing. Considering the uneven acceptance level of business personnel, the promotion and popularization of management systems have had a certain impact. This is both a goal and a driving force. We should not forget our original intention to forge ahead, and we will surely find a way that is suitable for the orderliness and expansion of the data visualization management system for college employment. Under the continuous deepening reform of the existing technical architecture, the development path of combining technical theory with practice will be realized.

References:

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