Discussion on the Development and Application of Computer Software Technology in the Age of Big Data

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Abstract: in Recent Years, China's Comprehensive National Strength Has Been Further Enhanced, and Its Development in the High-Tech Field Has Also Leapt to the Forefront of the World. the Development and Application of Computer Software Has Played a Very Important Role in the Development of High-Tech Fields, Improving the Efficiency and Quality of Production and Life from All Aspects. However, Information Security Issues Have Gradually Become a Major Concern for People. Therefore, Based on the Current Big Data Background, This Paper Studies the Development and Practical Application of Computer Software.

1. Introduction

1.1 Literature Review

Jiang Changjun and other scholars analyzed the status quo of big data development and discussed the main structure of large data service platforms including service support platform, data resource analysis and storage, data identification and acquisition. Finally, based on the key technologies in the computer field such as software behavior authentication, the network financial transaction system was developed, which realized the dynamic display and real-time monitoring of software behavior data and user data (Jiang et al, 2014). Wang Liang believes that layering technology is an important technology in computer software development, which can realize the transformation of computer software from single structure to multi-layer structure. At the same time, middleware in a hierarchical structure can also be a very important and critical application, making computer software systems run more smoothly and quickly (Wang, 2017). Lei Jinxi believes that the promotion and popularization of computer software has greatly improved people's quality of life and played an important role in social progress and development. From the perspective of daily production and life, the research explores the practical application of computer software and the improvement of data processing capabilities (Lei, 2018). Dong Zikai studied computer software technology from the perspective of students. Moreover, from the three aspects of internal data development, commercial operation management and digital communication management, the development and application of computer software is deeply discussed (Dong, 2019). Yang Wei analyzed the development status of computer software technology, expounded the necessity of current computer software application in production and life, and finally researched and prospected the practical application and future development of computer software (Yang, 2019).

1.2 Research Purposes

With the rapid development of science and technology and rapid progress, computers have been gradually popularized and spread to various fields of industry. In the process, computer software technology has been continuously promoted and applied. In various fields, computer software technology is continuously integrated with various traditional management and production technologies, bringing greater convenience to production and life. However, with the technological advancement of the Internet, network information security issues have become increasingly prominent. People pay very high attention to data security issues, and information security issues need to be further resolved. Based on this, this paper takes the relevant theory as the starting point, deeply analyzes the technical development of computer software, and discusses the application of

computer software from the perspective of practical application, in order to provide a reference for the development of computer software.

2. Overview of Relevant Theory

The development foundation of computer is the development of computer software development and application, which is mainly divided into two parts: application software development and system software development. The application software is a method-based software that solves the problem and can effectively solve the problems encountered during the running of the software. The system software is a contact carrier type software, which mainly provides a running carrier for various application software. Currently, there are three commonly used software development techniques in the industry, namely automatic formal system development method, software prototype method and life cycle method (Cui, 2019). The main process of the automated formal system development method is to carry out the process of design coding and automatic analysis according to the specific development requirements. The software prototyping method refers to prototyping it in different software development stages. The R&D personnel build the software system based on the theoretical basis of previous research and the actual needs of software development. Moreover, after continuous revision and review, the purpose of software development is achieved. The life cycle rule is a software development method that has long been widely used by software developers.

The daily use of the computer requires the user to first install the appropriate computer software on the computer. Therefore, the computer software development system is a kind of soft power, and it is also the main endogenous power for the development of computer technology. The rapid development of computer software system development technology has directly promoted the information revolution that has arrived. The development of computer software has provided strong support and promotion for the development of information technology, and also provided strong support for social development. In other words, the development of computer software technology is the main driving force of current social development and plays a very important role in the development of network technology (Zhang, 2017). Computer networks can be developed because of the development and application of computer software. The application of computer software has greatly promoted the continuous improvement of the security performance of computer software, and essentially solved the contradiction between computer requirements and software development.

3. Development of Computer Software Technology

3.1 Virtualization Technology

Computer virtualization technology is a resource management technology. The main working principle of this technology is to rationally configure the internal resources in the computer database to realize the management of database resources. If computer virtualization technology is properly applied, it can greatly improve the speed and efficiency of computer data analysis and processing. At the same time, virtualization technology can greatly improve the convenience and adaptability of users operating computer systems. At present, computer virtualization technology has gradually been popularized and used in daily life. This not only greatly improved the convenience of people's daily life, but also was promoted and applied in various fields, and was recognized by people from all walks of life. For example, enterprises in various fields, research and education institutions, and government departments have all enjoyed the convenience brought by computer virtualization technology.

3.2 Information Security Technology

In the context of the era of big data, data information in the network has grown exponentially, data exchange has become more frequent, and in the process of data exchange and sharing, it will involve all aspects. However, in this situation of increasing data exchange, the protection and security of information data is gradually threatened. In response to this situation, relevant R&D

personnel began to pay more attention to the protection of data information. For each database information, the implementation of security work such as firewall setting was gradually implemented to improve the overall security of data information. As we all know, computer network systems are characterized by interoperability and openness, which makes computer systems very vulnerable to the harm and invasion of foreign viruses. Therefore, data security is a very important task and an effective guarantee and prerequisite for the development of computer technology. At this stage, China's computer information security technology has already occupied a place in the international arena. However, with the continuous development of big data, computers are becoming more and more popular, and information security protection technologies are also facing new challenges. Therefore, relevant scientific research personnel should continue to deepen the research and development of information protection security technology, constantly improve the deficiencies and loopholes of computer information security technology, and do a good job in information security.

3.3 Cloud Storage Technology

Cloud storage technology is a new derivative technology based on cloud computing. In the current big data background, computer cloud storage technology is widely used in various fields, and the application prospect is very broad. Compared with traditional storage technologies, cloud storage technology can greatly improve the convenience of computer users. When using cloud storage technology to save files and data, computer users only need to log in directly to the cloud network account and upload the files and data to be saved to the cloud server. In the subsequent file data access, you can log in to the cloud server at different device terminals to download or view the saved files and data. The traditional computer storage technology uses hardware storage devices such as memory cards and solid state drives to save files and data. This traditional storage technology has a lower level of data security and convenience than cloud storage technology.

4. Application of Computer Software Technology in the Era of Big Data

In the context of the big data era, the application of computer software technology can be divided into two aspects, namely enterprise management software and commercial operation activities. Therefore, in the practical application of these two aspects, enterprises should pay more attention to improve the core competitiveness and production efficiency of the enterprise.

The practical application of enterprise management software. In the actual application process of the enterprise, the actual management efficiency is not ideal compared to the expected efficiency. Through research and analysis, this paper believes that enterprises can make breakthroughs in two aspects: development exploration and data sampling. The first is the development of computer software. The development and exploration of data information mainly refers to the software research and development personnel to improve the awareness and intuitive perception of users and enterprises using data by analyzing data correlation indexes and collecting abnormal data for analysis. In this process, the effective application of computer software technology can greatly improve the quality of work and efficiency of data development. Followed by data sampling of computer software. Data sampling mainly refers to a certain amount of random sampling of data samples in the process of product production and commercial activities. This randomly selected sample data has a certain representativeness. The relevant staff will statistically and measure the sample data after it is randomly selected. Moreover, according to the sampling data, the corresponding product promotion and development plan is formulated to further improve the efficiency of production and sales of the enterprise products. In the actual sampling process, computer software technology is flexibly applied. Data collectors pair the collected sample data according to actual requirements, thereby improving the efficiency of data collection.

Commercial operations. This article takes a chain supermarket as an example and conducts in-depth research on its commercial operation activities. The supermarket shopping guides use the shopping guide platform to solve the real needs of the users in real time, and improve the various problems encountered in the actual work, which can further optimize the work quality of the

supermarket shopping guide and improve the overall operating efficiency of the supermarket. It can be concluded that the organic integration of computer software technology in the commercial field can effectively improve the core competitiveness of the enterprise, and at the same time improve work efficiency and production efficiency.

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