Application Research of Hierarchical Technology in Computer Software Development

Jin Xing

Rizhao Polytechnic, Rizhao, 276826, China

Abstract. With the continuous development of computer technology, in order to better serve people's lives and work, it is necessary to continuously improve the functions of computer software. With the rapid development of big data processing, cloud computing, intelligent technology, neural network computer and AI technology, computer software development has entered a new era, in order to better improve the efficiency of computer software development, and rationally control software system development. Investment costs. In the process of computer software development, the role of layered technology can be fully utilized. Under the application of layered technology, the stability, security and reliability of computer software system operation have been improved. In order to ensure the feasibility of the software development project in the software development process of intelligent computing in the future, it is necessary to always put the user in the first place, develop the computer software around the user, and apply all the software through the practical application of the layered technology. Users provide a better quality, safe and sTable experience, and protect the user's preference for computer software. This paper mainly studies and analyzes the specific application of layered technology in computer software development.

1. Introduction

In the process of computer software system development, relying on traditional software development technology has not reached the real life needs of people. To this end, it is necessary to establish a complete hierarchical network system in a diversified computer system, so as to ensure that computer software development work can be carried out effectively. The current science and technology have effectively promoted the quality of computer software development. The original computer software layer 2 system beads gradually changed to a multi-layer system, which made the layered network of computer software development clearer. In the future computer software development process, the advantages of layered technology can be fully utilized to provide users with better service.

2. Overview of computer software layering technology

2.1 Definition of layering technology

The development of computer software has a certain internal hierarchical relationship and the internal dependence of the computer system is very strong. Based on the operating characteristics of the computer system, the development of computer software is not a single application performance, but has diverse application performance[1].

Under the extension of the two-layer structure technology, multi-layer technolcsgy has gradually become the mainstream technology of computer software development. With the support of multi-layer technology, the multi-service collaborative processing mode has been realized, which has effectively promoted the development of computer software. The pace of the development of

the layer structure.

2.2 Characteristics of layered technology

2.2.1. Good expansion

Both the application of the software system and the upgrade of the software system can take advantage of the layered technology. In the process of computer system layering technology application, the complex and cumbersome system software can be comprehensively analyzed, so that people can understand the specific operation work of the software technology more clearly and intuitively.

Through effective analysis of the software system, the staff can classify and summarize them according to different functions and performances, and carry out scientific and reasonable extension and extension of the software system, thus ensuring better reliability and stability of the optimized and improved software system.

2.2.2. Complete independence

When the computer software is developing and running, due to the influence of the external working environment, the operation problem occurs at a certain level of the software system. However, since the layering technology has a good complete independence, the layer where the problem occurs will appear certain. The impact, but the existence of this problem will not have a certain impact on other aspects of computer software.

In order to ensure the integrity and independence of the layered system in the process of computer development, a sTable working interface is designed for each level in the process of software development, so that each software level has its own dedicated workflow. There will be no mutual influence between the working levels, and the reliability of the post-upgrade optimization work will be guaranteed.

2.2.3. Reliable stability

In the process of computer software development, the development program can be simplified and the development cycle of computer software can be shortened. Therefore, the computer software development and operation phase has good stability and promotes the feasibility of software development.

3. The application meaning analysis of layered technology

The application of layered technology can improve the reliability of software systems and ensure the quality of computer software. Under the application of layered technology, the work efficiency and work quality of the computer software system have been improved, effectively improving the economics and practicability of the software system.

In the process of computer software technology development, by applying layering technology, it is possible to build a platform for hardware devices, software systems, and data information. In this way, in the process of running the software system, the advantages of various computer equipment resources can be fully utilized, thereby better exerting the working performance of the computer software system.

4. The practical application analysis of layered technology in computer software development

4.1 Application of double layer technology

In the process of computer software development, double-layer technology is a commonly used technical method. Under the application of double-layer technology, the software system has good stability and security.

4.1.1Client field

In the process of double-layer technology application, the main task in the client field is to collect and receive the user experience generated by the computer user when using the software system. At the same time, another work content of the double-layer technology client is to solve the specific problem of the user. Processing, as well as some problem information that the client can't solve, feeds it back to the server after collecting it, and judges by the server staff to issue timely work instructions.

4.1.2. Server

The double-layer technology server in the computer software system, the main work content is to receive the data fed back by the client, and process the collected data information according to the preset program of the computer software system, thereby performing the specific data information according to the feedback of the user.

After the server processes the feedback from the client, it is not only necessary to upload the relevant data information to the software development manager, in order to upgrade the software system, and also needs to feed back the result of the processing to the client at the first time. Thereby giving users a better choice, solving the user's use obstacles, and improving the user's software experience.

4.2 Application of three-layer technology

The three-layer technology is mainly based on the two-layer technology to expand and extend the new technology, scientific and rational optimization on the original basis of the client and server of the two-layer technology, thus forming a three-layer technology. By comparing the three-layer technology with the two-layer technology, it can be found that the three-layer technology has one more port than the two-layer technology, and the extra working port is mainly responsible for the following work content [2].

The first is the interface layer of the software system. The main work content of the interface layer is to collect the user experience of the interface operation. Through the collection of relevant data information, a software system optimization and improvement scheme can be developed according to the data summary. Better improve the user experience brought by the interface layer.

The second is the business processing layer of the software technology. The main work content of the computer business processing layer is to analyze and process the user feedback information transmitted by the interface layer. After the data information is processed and analyzed, the final result can be uploaded to the last work process of the three-tier technology client.

The third is the data layer of the computer software system. The data layer is the key link in the processing of the three-layer technology. When the data layer software system works, it first needs to review the data information uploaded by the computer software user to ensure the business layer. The statistical data information is accurate. Secondly, the data layer performs unified analysis and processing on all data information, and optimizes the computer three-layer technology software system according to the final processing result. With the support of the three-layer technology, the processing efficiency of the server to the client can be effectively improved, and the quality of the problem processing feedback of the computer software system user can better improve the quality of the user's participation in the software system.

By comparing the three-layer technology with the two-layer technology, it can be found that the computer software system supported by the three-layer technology has better data processing efficiency, and the operation of the computer software system is well optimized and improved.

4.3 Application of four-layer technology

The four-layer technology is mainly based on the three-layer technology as the cornerstone for

the new technology, and the application of four-layer technology in the process of computer software development can guarantee the flexible transformation between the two-layer technology and the three-layer technology of the computer software system. .

In the process of computer software development, in order to ensure the full play of the functional advantages of the four-layer technology, it is necessary to conduct research and analysis on the practical application environment of the four-layer technology, and analyze the limitations of the application of the software system, so as to be based on the application of the computer software system. Insufficient, better highlight the working advantages of four-layer technology.

In the process of four-layer technology application, the client endpoint, the business processing layer, the interface layer, and the data layer need to be scientifically and rationally distributed, so as to ensure that the computer software development staff can upgrade and optimize the client. The intrinsic link of layer technology is optimized for targeted links, so that when processing is optimized at a single level, other layers will not be affected too much, because in many computer software optimization and upgrade, the processing layer and business of the software system Layer, interface layer and data layer will have a greater impact. Therefore, in the four-layer technical analysis, scientific and reasonable design must be combined with the actual application environment of the software system to ensure the relative independence and relevance between the layers. .

At present, the application of multi-layer technology in computer software development is mainly reflected in the four-layer technology. The four-layer technology is compared with the three-layer technology. It can be clearly found that the four-layer technology processing has more WEB layer and storage layer, and the business layer and data. The layers are upgraded and improved with the basic functions of the three-layer technology, thus forming a component of the four-layer technology. The WEb layer in the four-layer technology of the computer software system, the main work content is to process and process the data transmitted by the data layer, complete the exchange of data information after the data processing, and use the storage layer to convert the data information through the storage layer. Compared with the source code of the computer software system, the data information comparison and difference matching work is completed, and the computer software system is better optimized and improved according to the final data conclusion and the best quality and reliable service is provided for the user.

4.4 Application of intermediate layer technology

The middle layer technology is somewhat different from other layering technologies. The middle layer technology is a stand-alone system structure. It is to monitor the fault of the software system. In the process of running the software system, the middle layer technology can preprocess the problems that may occur. The rational application of the middle layer technology in the process of computer software development can improve the overall efficiency of computer software development. Due to the particularity of the middle layer technology, it is necessary to select the best intermediate layer technology according to the specific direction of computer software system development when applying the middle layer technology [3].

In the process of computer software system development, it is easy to be affected by two aspects, one is the software system designed by the R&D personnel, and the other is the attack of the external network virus. In the process of software system development, if there is a problem in the degree of staff design, the middle layer technology applied in the software system can fully exert the work efficiency. The software system can detect the software system in time by detecting the security of the software system. In the loopholes, and timely reporting to the staff, the software system R&D staff can upgrade and optimize the designed software system according to the

detection results of the middle layer technology, thus ensuring the reliability of the computer software system.

In the process of computer software development, because the software system is not designed, the software system has poor self-virus protection capability, and the software system will be affected when any virus attacks, because the software system is a network virus infected when the design is not completed. If it is not discovered in time, the computer software system will be put on the market, which will affect countless users and directly endanger the security of the project. However, when the computer software project is developed, the middle layer technology is applied. Because the middle layer technology is a protection technology that is separated from the multi-layer technology and the software system, when the external network virus attacks the computer software system, the middle layer technology It can play its own work efficiency and provide a security protection for software development projects, avoiding the computer software system being attacked by external network viruses during development. The software development work is carried out under the work of the middle layer protection technology, which improves the security and stability of the project development.

5. Conclusion

In summary, in order to improve the reliability and economy of development work in the process of computer software development, a comprehensive and systematic evaluation of software system development projects can be carried out. Because computer software development work is at the forefront of technology, there is no experience to refer to. In the process of software development, once the "grey rhinoceros" event occurs, it will cause a huge blow to the project. In the process of computer software system development, in order to scientifically avoid the risks brought by the market and the risks brought by technology research and development, layered technology can be applied in the process of software development. Because the research and application of layered technology is very mature, the application of multi-layer technology in the process of software system development can effectively realize the commercial transformation of scientific research, so that the economics of the project can be effectively guaranteed. All in all, in the process of computer software development, the advantages of multi-layer technology can be reasonably utilized, which can improve the feasibility of software development projects.

References

[1] Jiang Feng. Application of Hierarchical Technology in Computer Software Development [J]. Computer Programming Skills and Maintenance, 2015, 18: 21-22.

[2] Wang Zhiqiang, Wang Xiulan. On the application of layering technology in computer software development [J]. Computer Knowledge and Technology, 2017, 1303: 85-86.

[3] Wang Li. Practice and exploration of layering technology in computer software development [J]. Computer programming skills and maintenance, 2018, 05: 25-26.