

The application of software engineering techniques in system software development

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Abstract: Software engineering technology is a common technical content in the process of system software development, which plays a good role in improving the overall operating level of the system. In the actual development process of system software, developers need to rely on software engineering technology, for the system software development process, development details, management control, such as integrated, oriented and fine control, so as to improve and optimize the existing system software development management process and operation level. This paper is in this background to carry out research, through the analysis of the content of the system software development needs, and then put forward the software engineering technology in the system software development of the application approach.

Key words: software engineering technology; System software development; Content requirements; application

Under the background of the new era, the management and control of system software development must give play to the advantages of software engineering technology, so as to improve its comprehensive control effect, realize the optimization and perfection of software development and management links, improve the precise control effect of the overall development details, and then improve the comprehensive performance of system software from all levels.

1. The content demand analysis of system software development

(1) Information requirements

In traditional system software development activities, because the relevant elements of development cycle model must be involved, and the software engineering thought must rely on complex calculation to obtain the corresponding lifetime model, it has a defect effect on its software development. Under the current technical conditions, there may be inclusion relations between different information, and in the process of software development, the refinement of the same type of information needs to be extended to the sub-domain level, so as to ensure that a main information contains multiple sub-information, and then presents a tree relationship structure. The tree-like information structure must rely on software engineering technology to meet the realistic needs of its business logic. Taking workload calculation as an example, the workload calculation of some system software development projects includes all the subordinate business requirements and technical requirements. Every completion of a business requirement means that a software development goal has been achieved. Therefore, software engineering technology has become an important support to present the information dependency relationship in the process of software development.

(2) Content requirements

At the present stage, software programs are developed based on WWW, which can provide necessary content support for software development and management. However, the traditional software life cycle and the modern rapid development of the network environment has not adapted to the problem, can not meet the basic needs of the software system in the modern society, especially different enterprise objects also have distinct differentiation of software research and development requirements, so the need for software development must be from the program and content level to make adaptive changes. The traditional software development time is long, the program area is complex, but the software application system development time is shorter, and the adaptability is stronger. Therefore, relying on the software application system can meet the acceptance and use ability of different user groups, but also can meet their requirements for complex information exposition and interface design.

(3) program development

The characteristics and functions of the system software determine its obvious differences from the development of general software. The process model, project management model and organizational public model constructed in the development process need to rely on software engineering technology to build and improve, so as to ensure that the whole development process corresponds to the development cycle of the system software, and achieve the basic requirements of process management and project management. The software development process must rely on the iterative thought evolution, and then generate the process model. The complete system software development process must include user demand analysis, program module design, program writing, application testing, application release and other links, among which the operation activities of technical engineers is the key part to complete the development, only through the design and testing to ensure that the program meets the functional requirements, in order to further meet the needs of users.

(4) Technical management

At the level of technology management, software engineering and software development process can not avoid the complex theoretical structure of the related problems, independent research and development enterprises must consider the software system programming requirements as the key elements, and improve the software program function through technology management, can not only meet the needs of social groups and use, but also bring some convenience for users.

2. The application of software engineering technology in system software development

(1) The application of software development model construction

Different from traditional software development, in the design of system software, developers need to build a new software development model, and the application value and function of software engineering technology must be brought into play in this process. First of all, research and analysis should be carried out for the system software and its application programs. Developers need to fully understand the development cycle, development process and key elements of control of the system software, and then evaluate and budget it. Secondly, developers need to build a development model based on the basic research results to ensure that the system software model has practical design functions. Third, developers need to comprehensively optimize and redesign the project management method to further improve the quality level of software development, but also to correct errors in real time during the development process to ensure that the development schedule meets the requirements of the program. In the early stage of model construction, developers need to adopt a more scientific and efficient way to ensure that the software framework and software structure meet the actual requirements, and can pass the corresponding simulation tests.

Therefore, in this process, developers need to give full play to the excellent modeling ability of software engineering technology, optimize and demonstrate the feasibility and technology of the model based on the actual demand, so as to meet the multi-faceted and multi-dimensional functional requirements, and meet the use needs of the actual software development application scenarios and people. And thus in the development mode to modify and improve its parameter Settings, in order to achieve the purpose of improving the level of control and efficiency. For example, in the development of hotel management system, developers need to meet the management and control needs of customer consumption records, manager information of customer dormitory, providing necessary services for customers and other aspects in the construction of system software model. In the software management system, the hotel should have the ability of efficient integration of information resources, and then need the system software for customer information, room number, room category, room price, room service and other information for fine control. In the system software development, it must rely on the system module, the construction of information input terminal control system, such as the user name and password can be entered to determine, and then can be developed for the account information management module. On this basis, should establish the main module, user input and output module, system management module, input and output management module, user information module, dining management module, room information module, dormitory administrator module and other modules are designed in order to achieve the purpose and effect of subroutine mutual contact and provide service functions.

(2) The application of software development limitation breakthrough

Traditional software system development has certain limitations, so it is limited in the link of information resources acquisition and utilization, and then the utilization rate of information resources is low, unable to meet the basic requirements of modern society. Therefore, the development staff need to play the development management function of software engineering technology, through optimizing and perfecting its development limitations and defects, to play the system software better running level and service function.

First of all, relying on software engineering technology can achieve the purpose of data sharing, which can solve the problem of information disconnection in the system software development, but also can ensure that the system software can complete the development work under the support of fuzzy data. Secondly, the design of system software must be based on meeting the needs of customers, but in the process of data management, it will inevitably face the problem of too much data and too wide range of data content. Under this problem, we can also use software engineering technology to integrate and optimize data information. For example, in the development of the office management system, in the traditional development technology, once the system into the structure of the maintenance, it can not operate normally, which makes the office can not use the system to work normally, such as data query, data research, etc., which has caused some obstacles to work. But with the help of software engineering technology, we can ensure that in the process of background maintenance, the system software can normally provide users with data query services, so as to ensure that the work can be normal operation. For example, for the social media platform software such as qq and wechat used in daily life, different versions of the software can also communicate and interact. The key lies in the support of software engineering technology and data query technology, which improves the user experience.

(3) The application in the development of software applications

In the process of software application development, a convenient and unobstructed communication channel must be established among the developers responsible for engineering, technology and design, so as to ensure the synergistic effect of the work. And software engineering technology has a good application role in this link. The program system must be designed to meet the needs of users as the goal, so in the system update and development activities, developers need to comprehensively analyze the overall performance, functional effects and development potential of the software, and then put forward suggestions for further optimization through evaluation and judgment. From the macro level, the application program is based on the development of software application system, which can play the deep value and multiple functions of the system software, so as to meet the needs of users. For example, in the development process of software engineering technology, more control functions can be realized, such as software supply and demand description, system function realization, system control design, operation management and maintenance, system function verification and so on. Developers need to clarify the basic objectives of development management and control, and then master the specific demands of software target users through demand authentication, description and summary. For another example, in the process of software development and design, engineers and technicians need to master the user's target software usage habits, so as to ensure the scientific arrangement of the software core content

design, and then optimize the user interface, so as to improve user experience and enhance user stickiness.

(4) The application of tracking and evaluation of development projects

In the process of system development and management, developers also need to evaluate and control each link of the project implementation, so as to continuously improve the functional demands achieved by the software. In this process, software engineering technology also has important application value. For example, in the development project of library internal control system, developers need to use JAVA, JSP and other different software engineering technology to develop and optimize, not only to ensure that it has the effect of normal maintenance and management, but also to be able to establish a continuous tracking and evaluation module for the development system. At the same time, it can also integrate the faults, defects and hidden problems generated in the process of software operation, so as to achieve efficient management, reduce operation and maintenance costs, and improve the security of the system

In the tracking evaluation management link, development staff also need to improve the science and efficiency of process management, so as to achieve the goal of tracking evaluation. In the implementation process, engineering and technical personnel need to carry out the plan evaluation, according to the software development plan, the functional effect achieved by the software and the operation results are compared, so as to evaluate the actual development effect and put forward the corresponding evaluation results. In this process, engineers need to make evaluation and comparison documents, based on the actual results, develop differentiation comparison through the documentation software, and then provide additional refined management activities. In addition, in the management activities, it is also necessary to evaluate the cost, especially to manage and control the schedule cost, and improve the control level through scientific optimization measures. During the management period, developers need to adopt process intervention and management methods to ensure that when the test results deviate from the actual situation in the software operation process, timely measures can be taken to correct them. Among them, the most critical problem is that by tracking the setting of evaluation management links, developers can also evaluate and control resources, especially including office, computing, customer and other aspects of resource demand changes to establish an analysis system, so as to provide necessary support for the software function improvement.

3. Conclusion

To sum up, in the process of system software development, software engineering technology has important application value. Relevant developers should pay more attention to the application of software engineering technology, and then play their due value and function in the links of software development model construction, software development limitation breakthrough, software application program development, development project tracking and evaluation, so as to improve the running level of system software and enrich its functional connotation, so as to meet the actual work needs of enterprises. It can also meet the user's usage habits and functional needs, and achieve the purpose and effect of improving the comprehensive operation level of the whole system.

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