

Software engineering method in the application of computer software development analysis

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Abstract: This article through the concept, function and basic content analysis method of software engineering, the application of software engineering method and related technology in the development of computer application system, so as to provide some technical reference for computer software development. Today, modern software engineering has been developed and characterized by an object centric approach. In the practical application, many software engineering methods and software environment can not be unified, so it will produce great constraint. Therefore, it is of practical significance to study the application of software engineering in modern software development.

Overview of software engineering methods

Software engineering mainly includes methods, tools and process. Software engineering methods provide technical support for software development, and software tools provide an automated software support environment for software engineering methods. The process can improve the quality of software design and develop the steps of software design.

Software engineering method is an important content of software engineering, and many software engineering methods have been produced since 60s. In the software development process, to analyze the feasibility of software development, the purpose is not only for some of the details of software development process are analyzed, also can analyze the contradictions existing in the development of software, software system to determine whether there is the value of the development, can develop all the content in a short time. In the feasibility analysis of software development stage, should be the overall goal of software development are analyzed, to analyze whether the relevant technology is feasible, should also consider economic factors, feasibility analysis of the user's operation, combined with the legal and social background[1].

To the software requirements analysis, software requirements analysis is a key success of the project, it is the answer to the question of what to do with the customer, is one of the user's needs correct processing, correct understanding, and then process it with the development of software engineering language express. Requirements analysis is not just user needs, but also all the requirements that need to be encountered in the process of development. For example, in demand analysis, we need to clarify the purpose of this project is to solve what problem; then figure out what data should be input in the test case, the last is to figure out what people need to use the system. In the requirement analysis of software, we should establish the logic structure of software and write the requirement specification according to the actual situation of users, so as to establish the document and ensure the software can be accepted by the user. In requirements analysis, the

characteristics of software architecture should be combined.

Software engineering is a familiar subject in engineering method research. It is very useful and the quality of component software is very good. It involves language design, database, software development technology and many other fields, and can establish a systematic platform. Now, the software has been widely used in different industries, people usually send e-mail is used in all kinds of office software, the operation of the system is also used in the software, all kinds of scientific research work, it adopts the man-machine interface and embedded system is widely used in software. In addition, computer software has been widely used in different industries, especially in aviation and industry. Software improves people's work efficiency and promotes social and economic development.

Since the 60s of last century, many developed countries have begun to use software engineering. The main methods include structured methods, formal methods and object-oriented methods. Structured methods can divide the lifecycle of software into different phases, and set different goals for different phases. The formal method uses formal transformation method to develop the software with the help of mathematical concepts, and the system description can be translated directly into the program that can be executed. The object oriented approach is to closely integrate data with other systems, and to ensure that various methods of development can be used in conjunction with software development[2].

Content and advantages of modern software engineering methods

In modern software engineering method, mainly adopts the object oriented method, which effectively avoids the defects of traditional engineering method, in the software development process, all aspects of the goals are very clear, the analysis, design, test and combination of encoding methods, based on the realization of the traditional software development method on the innovation of. However, in the analysis process, this method is aimed at a specific situation, so the object characteristics and properties can fully reflect the essential characteristics of things. In the design link, may carry on the thorough research to a certain stage in the system. The modern software engineering method has realized the innovation, changed the spontaneous state in the traditional engineering software method, and adopted the modular way, so that the software system can be maintained. The modern software engineering method is in a spontaneous state and adopts the modular mode. It has a strong adaptive ability and can meet the needs of the vast numbers of users. Moreover, this modern software method has good performance, and can modify different software defects, so as to optimize the module, and effectively reduce the risk of development in the development process. In the use of software links, you can improve the performance of software, combined with customer demand, so that the performance of the software to fully play, to ensure that the functions of the computer to maximize the play. After the definition of the module is completed, the module can be embedded into the system, and each module can be reused. The advantages of modern software engineering are obvious, mainly in the following aspects[3].

Before software engineering is put into use, many businesses in the development of software, the cost is very high, but the overall performance of the software can not meet expectations, businesses in order to enhance the quality of the software, they will choose to re develop the software, the software development cost is very high, and the efficiency of software development is very low. Since software engineering began to be used, the detection efficiency of computer software has been greatly improved, and the overall performance can be guaranteed.

In the use and experience of software, the user can accomplish the task better in using software. If a software performance is very good, then the software can respond to user instructions in a

timely manner, in the shortest possible time to complete the task, to prevent the emergence of various types of system vulnerabilities. Therefore, in the process of dealing with tasks, the software often encounter many disturbing factors, resulting in the user's task can not be completed in a timely manner.

In the process of software system optimization, it can effectively reduce the pressure of software on network hardware. If the software can not carry out a thorough optimization of computer system hardware, will have a lot of pressure, but in the software running in the link, will occupy a very large space, cyber source will be a lot of consumption, will also affect the service life of software[4].

After the adoption of modern software engineering, the performance of software can be upgraded, so that the overall function of the software can be guaranteed. Storage of software systems will be greatly improved. Users do not have to debug the software repeatedly in the process of using the software to ensure that the software is always intelligent.

Application practice of modern software engineering method

Management information systems combine the collection and collation of different areas of information. In the development of the management information system, we must improve the system analysis and design links. However, in the process of system development, there are still some inherent defects in the system, which will adversely affect the efficiency of the entire system. In the system analysis part, mainly to establish logic model, improve the analysis of data collection, the user can in a business process all of the data and the whole process of recording, and then to the organization chart to show the way out, through mathematical modeling, lay a good foundation for the development of the entire project. In this section, the way the client uses the data dictionary and the organizational chart can simplify the way data flow is processed, giving full play to the advantages of lifecycle and structured analysis. But the user units are very large, their internal structure is very complex, and the branch structure contains a lot of some outlets across a very wide, can even touch the whole world, so in the business processing link is very complex, and show the characteristics of unstructured, which increases the a lot of difficulty to the system design. Aiming at the above problems, the object-oriented approach in software engineering can be combined with the needs of customers, for business analysis, with the help of physical objects, between the form and characteristics of the full contact line, improve the conversion of the state of the object, establish perfect logic model on this basis, so as to the organization business data analysis, to prevent the non structured data, and in the specific operation, can provide the perfect data environment for customers, so that the system can provide more comprehensive service for customers.

The computer has been widely used in the medical and food service industry, which can improve the production efficiency and restrict the operation specification and the specific process of the industry to a certain extent. In the process of software development, we should perfect the consciousness of modern software engineering, and ensure that the software is carried out in a certain order in the development process. In the modern medical and health undertakings in today's rapid development, the scale of the operation, combined with various types of management software, to carry out medical software management in hospital, and to combine all kinds of information detection software. In the hospital, the management of the patient's information and information is also used in computer software, and a large number of pathological reports are displayed in the form of software. In computer software, a large amount of data and data are stored for a long time, which provides a lot of convenience for the doctor's diagnosis and treatment, and

can observe the patient's condition in real time. The operating interface of such software is very simple, and the data processing accuracy is very high in a modular manner.

In the actual software development process, the uneven distribution of workers are many software development companies, often appear a job vacancy problem, coordination between people is very poor and have a bad effect on the efficiency of software development. So, before the software development, should analyze the needs of customers, if not on the client software development company of global and local needs to fully understand, so they cannot be developed in line with the actual work needs of the software, it can not adapt to the needs of customers, it will bring great losses to software developers.

The common development process of computer assisted instruction software is mainly to choose language or tools, with tools and experience to meet the needs of customers, through the application of structured methods, through the method of the modular design, the deployment of the task. Now, customer demand for software changes in direction, so software developers in the original system on the basis of the corresponding adjustment of the system, so in this link prone to some errors. Customer demand for software changes in direction, so the software system should be implemented with the times, but after the software development, software maintenance costs are relatively high, but also inconvenient to re-use. For example, before software development, the associated functions cannot be used alone. Developers should introduce modern software engineering methods to improve the efficiency of computer aided instruction software development[5].

In software development, there are several very good software development engineers in an excellent development team, which is critical to the overall effectiveness of software development. Therefore, a qualified software engineer should have high sense of responsibility and perfect logical thinking. In the software development process, through the analysis of logic should back the way in making decisions in the decision should be to determine a good way of thinking, in the formulation of the part of the program, should choose several schemes as alternatives, and these can be realized with the help of software engineering method.

The method from abstract to concrete refers mainly to the abstract rules formed in the object and forms the logic method of the whole. In the software development process, should follow the nature of the way from the abstract, developed in the software development decision should also follow this principle, developers have to distinguish between primary and secondary contradictions, learn to better the customer analysis. If in the software development link, cannot see the primary and secondary question, then the software design only has grasped some appearance question, cannot carry on the elaboration with the deep level question. For example, in the library of software development process, for a particular system, to book lending and return records, and provide query and management functions for customers, but if in the design of the system to skip this several functions, but the library system analysis of simple management functions, can not make the system is designed to meet customer needs. So, with the help of software engineering method, we can follow the order characteristics and distinguish the primary and secondary in the system design link[6].

Conclusion

In computer software development process, should fully use the modern software engineering, and the traditional method of software development has a selective application, in order to ensure the software development work smoothly, so as to ensure the development effect can be guaranteed. In recent years, the development of computer technology is very fast, and it has been applied in

different fields, and it has a great impact on the development of computer software.

References

- [1]Hatebur D, Heisel M, Souquieres J. A Method for Component-Based Software and System Development[C]// Software Engineering and Advanced Applications, 2006. Seaa '06. Euromicro Conference on. IEEE, 2006:72-80.
- [2]Altmeyer J, Riegel J P, Schuermann B, et al. Application of a generator-based software development method supporting model reuse[C]// International Conference on Advanced Information Systems Engineering. Springer-Verlag, 1997:159-172.
- [3]Sobel A E K, Clarkson M R. Formal methods application: an empirical tale of softwaredevelopment[J]. Software Engineering IEEE Transactions on, 2002, 28(3):308-320.
- [4]Song X J, Zeng Z L. Research on Application of Software Engineering Theory in Software Development[J]. Applied Mechanics & Materials, 2014, 687-691:1921-1924.
- [5]Hota H S, Kumar Singhai S, Shukla R. Application of Fuzzy Analytic Hierarchy Method in Software Engineering Scenario[J]. International Journal of Computer Applications, 2012, 57(21):45-50.
- [6]Nunes N J, Cunha J F. Wisdom: A Software Engineering Method for Small Software Development Companies[J]. IEEE Software, 2000, 17(5):113-119.