Software Development Processes

Author name:Fang Tianyi
Zhejiang Normal University
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Abstract:

the article gives a brief and concise explanation to the highly valuable nature of software development processes.this article has been formatted ,so whether or not you are currently a software project manager,actively working on a project team , or completely in the dark about this mysterious field,this article a light refresher to the subject,and if you are deciding whether or not to delve into the field of software management,this article may help you make that significant dicision .this is an ambitious article , but not unrealistic .for the sake of practicality ,we discuss a variety of important aspects of software development processes,such as, quality control and risk assessment

1.introduction:

The general process of software development process that software design ideas and methods, including the function of software design and implementation of algorithms and methods, software, the overall structure design and module design, programming and debugging, program debugging and testing and prepared and submitted to the procedures and so on a series of operations.

2.The history of software development processes

The software development methodology (also known as SDM) framework didn't emerge until the 1960s. According to Elliott (2004) the systems development life cycle (SDLC) can be considered to be the oldest formalized methodology framework for building information systems. The main idea of the SDLC has been "to pursue the development of information systems in a very deliberate, structured and methodical way, requiring each stage of the life cycle – – from inception of the idea to delivery of the final system – – to be carried out rigidly and sequentially"[2] within the context of the framework being applied. The main target of this methodology framework in the 1960s was "to develop large scale functional business systems in an age of large scale business conglomerates. Information systems activities revolved around heavy data processing and number crunching routines".

Methodologies, processes, and frameworks range from specific proscriptive steps that can be used directly by an organization in day-to-day work, to flexible frameworks that an organization uses to generate a custom set of steps tailored to the needs of a specific project or group. In some cases a "sponsor" or "maintenance" organization distributes an

official set of documents that describe the process. Specific examples include:

1970s
Structured programming since 1969
Cap Gemini SDM, originally from PANDATA, the first English translation was published in 1974. SDM stands for System Development Methodology
1980s
Structured systems analysis and design method (SSADM) from 1980 onwards
Information Requirement Analysis/Soft systems methodology
1990s
Object-oriented programming (OOP) developed in the early 1960s, and became a dominant programming approach during the mid-1990s
Rapid application development (RAD), since 1991
Dynamic systems development method (DSDM), since 1994
Scrum, since 1995
Team software process, since 1998
Rational Unified Process (RUP), maintained by IBM since 1998
Extreme programming, since 1999
2000s
Agile Unified Process (AUP) maintained since 2005 by Scott Ambler
Disciplined agile delivery (DAD) Superseded of AUP

3.Development processes

requirement analysis

1. The related system analyst to the user a preliminary understanding of the demand, and then use tools list the major functional modules of system development, and each function module has what function module, for some demand is clearly related to the interface, in this step can be preliminary defined small amount of interface.

2 systems analysts have a thorough understanding and analysis of requirements, according to their own experience and needs with WORD or related tools and then make a document system functional requirements document. This document will be clear about the general system of large functional modules, which are small functional modules, and also lists the relevant interface and interface functions.

3 system analysts to confirm the needs of users.

Outline design

First, the developer needs to design the software system, that is, the system design. Outline design of the system software design are considered, the basic process includes the system, the system organizational structure, module division, function distribution, interface design, operation design, data structure design and the design of the error, for the detailed design of the software provides the basis.

detailed design

On the basis of the summary design, the developer needs to carry on the detailed design of the software system. In the detailed design, describe implementation of the key algorithms involved in specific modules, data structure, class hierarchy and call, to illustrate various levels of a software system of every (each module or subroutine) program design considerations, in order to code and test. Should ensure that the requirements of the software are distributed to the entire software. Detailed design should be sufficient in detail, according to the detailed design report for encoding.

code

In the coding stage, developers according to the requirements of the report on the detailed design of the software system design

of data structure and algorithm analysis and module realization, began to specific written procedures, respectively, to achieve the function of each module, to achieve the goal of system functionality, performance, interface, interface. In the standardization of the development process, coding in the whole project process does not exceed a maximum of 1 / 2, usually in 1 / 3 of the time, so-called brothers do not misuse wood work, complete the design process of good, coding efficiency will be greatly improved, coding schedule coordination between different modules and is the need to be careful, perhaps a small module may affect the overall progress, let many programmers therefore forced to stop working and waiting, this kind of problem in many research and development process. Code of mutual communication and emergency solution is very important, for the programmer, bug exists forever, you must always face the problem, famous Microsoft, had not for three months, patch? Never!

test

Test writing system. To the user to use, after the user to use one of the confirmation of each function. Software testing has a lot of kinds: in accordance with the test execution can be divided into internal and external testing, in accordance with the scope of the test can be sub module test and overall debugging; according to the test conditions, test for normal operation and abnormal testing can be divided into; in accordance with the test input range can be divided into full coverage testing and sampling tests. The above is very good understanding, no longer explain. In short, the test is also a very important step in the development of the project, for a large software, 3 months to 1 years of external testing is normal, because there will always be an unexpected problem exists. After the completion of the test, and acceptance is completed and finally some of the help documentation, the whole project had ended, of course, the future less upgrade, repair and so on, as long as they do not want to through the sale of a hammer scam, tracking software is necessary to stop the operation status and continue to repair upgrade, until the software was completely eliminated so far.

software delivery

In software testing to prove the result of the software to meet the requirements, software developers should is submitted to the user development target setup, data dictionary, the user installation manual, the user guide ", reporting requirements, design reports, test reports the parties agreed.

The user installation manual should be introduced to install the software on the operating environment requirements, installation of software definition and content, in the client, server and middleware specific installation steps, after the installation of the system configuration.

"User guide" should include the use of the software functions of the process, the operation steps, the corresponding business introduction, special tips and notes, etc., in the need for example.

check before acceptance

User acceptance.

maintain

According to the change of the user's demand or the environment changes, the whole or part of the application program is modified.

4.References

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5.Acknowledgements

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6.Conclusion:

The report should finish with a summary to give a brief overview of what the reader should remember most .what was most important?