Software Development Processes

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Abstract

The article gives a brief and concise explanation to the highly valu-able nature of soft development processes. This article has been formatted, so whether or not you are working on software development processes, or completely in the dark about this mysterious field, this article has something for you. If you're deciding whether or not to delve into the field of software development processes, this article may help you make that significant decision. This is an ambitious article, but not unrealistic, and we know that software development processes is a little bit of an art and involves a lot of practice. There is so much to know than this article is able to present. It's not that we necessarily excluded anything from this article. For the sake of practicality, we discuss a variety of important aspects of software project development processes.

Keywords: software development processes, software development modle

1 Introduction

Software development process is an essential tool. It's aim is to develop large scale functional business systems in an age of large scale business conglomerates. Most importantly, it enable you to improve productivity and quality. This article gives a brief introduction to software development processes and software development model. We address the following concepts in this article:

- ✔ What define a software development processes?
- ✔ Why modelling?
- ✔ Which model/Approach?
- ✔ What is project characteristics and considerations?
- ✔ What is software process models?

What is this article for? This article was written in a concise format to emphasis the key point of software development processes and its importance. However, this article is only a teaser and the recommended reading list at the end provides a much more detailed and comprehensive explanation of the core components.[Dr.Kenwrigh 2016]

2 History of software development processes

The software development methodology (also know 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 framwork 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" 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 reorganization 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. [Wikipedia 2016]

3 Overview

The most important part of software development processes is software process model. Software process model is one specific embodiment of a software process architecture. And in the methods/Techniques the article will writes why modelling. Also project characteristics, project considerations, technical constraints, technical approach, technical implementation, technical implications.

4 Methods/Techniques

Why modelling? There has 4 reasons:

- To provide a common understanding,.
- To locate any inconsistencies redundancies and omissions.
- To reflect the development goals and provide early evaluation.
- To assist the development team to understand any special situation.

About Project Characteristics, there is several questions:

- Data oriented or control oriented system?
- General package or application specific?
- A particular type of system for which specific tools have been developed?
- Safety-critical system?
- Nature of the hardware/software environment.

Project considerations:

- Control systems
- Information systems
- General applications
- Specialized techniques
- Hardware environment
- Safety-critical systems
- Imprecise requirements

Technical constraints: type of the system to be developed.

Technical approach: selected methodology or process models.

Technical implementation: development environment, maintenance environment, training.

Software process models:

- Waterfall Model: classical, one-shot approach, effective control, limited scope of iteration, long cycle time, not suitable for system of high uncertainty.
- V model: additional validation process introduced, relate testing to analysis and design, loop back in case of discrepancy.
- Spiral Model: evolutionary approach, iterative development combined with risk management, risk analysis results in "go, re-do, no-go" decision.

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- Prototyping Model： meet(some) user requirements at an early stage, reduce risk and uncertainty, verify a design or implementation approach. Should always answer specific questions; goals must be identified.

[Dr.Kenwrigh 2016]

5 Conclusion

Software development processes is a very large theory. It's aim is to created and completed by a project team to develop or maintain an application. Common methodologies include waterfall, prototyping, iterative and incremental development, spiral development, rapid application development, extreme programming and various types of agile mythology.

References

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