Software Development Processes

Huang Guoan (Student No:13211120)
Zhejiang Normal University
Software Project Management

Abstract

Software development is the process of developing software through successive phases in an orderly way. This process includes not only the actual writing of code but also the preparation of requirements and objectives, the design of what is to be coded, and confirmation that what is developed has met objectives.
The article gives a brief and concise explanation to the Software Development Processes, Waterfall model, V model, Spiral Model and Prototyping model.

Keywords: software development process, Waterfall model, V model, Spiral Model, Prototyping model

1 Introduction

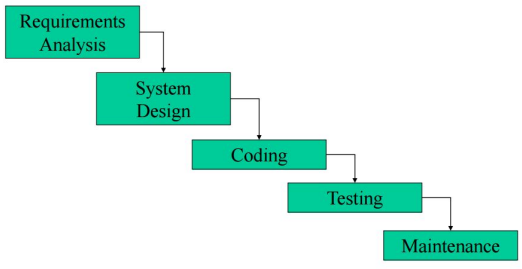
In software engineering, a software development methodology (also known as a system development methodology, software development life cycle, software development process, software process) is a splitting of software development work into distinct phases (or stages) containing activities with the intent of better planning and management. It is often considered a subset of the systems development life cycle. The methodology may include the pre-definition of specific deliverables and artifacts that are created and completed by a project team to develop or maintain an application.[1]

There are many kinds of software process models, for example Waterfall model, V model, Spiral Model and Prototyping model.

2 Waterfall Model

The waterfall model is a sequential development approach, in which development is seen as flowing steadily downwards (like a waterfall) through several phases, typically:

- Requirements analysis
- System Design
- Coding
- Testing
- Maintenance



e-mail:281081884@qq.com

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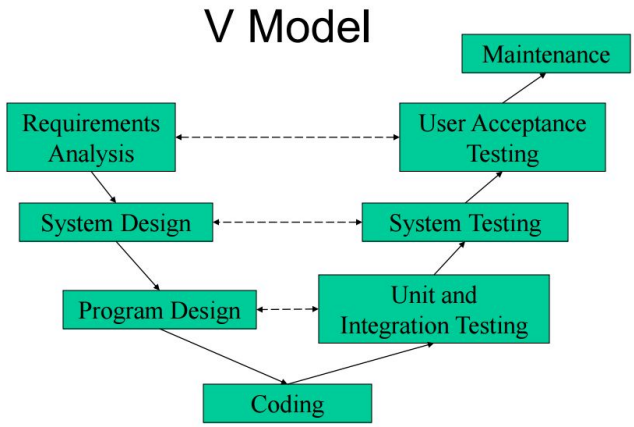
Author Name: 13211120, Huang Guoan
University: Zhejiang Normal University
Title: Software Development Processes
Supervisor: Dr. Kenwright

The waterfall development model originates in the manufacturing and construction industries: highly structured physical environments in which after-the-fact changes are prohibitively costly, if not impossible. Because no formal software development methodologies existed at the time, this hardware-oriented model was simply adapted for software development.[2]

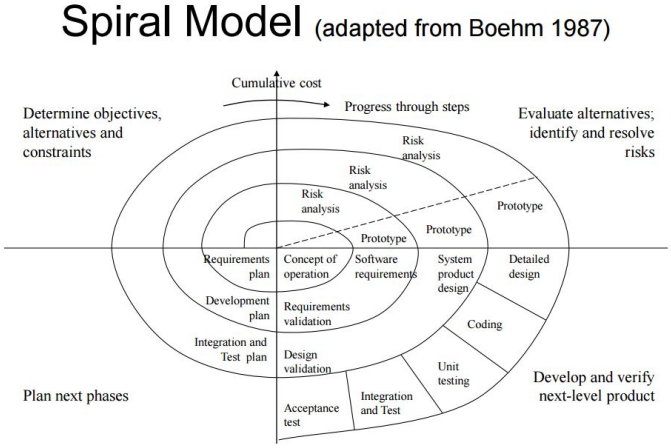
3 V Model

The V-model is a term applied to a range of models, from a conceptual model designed to produce a simplified understanding of the complexity associated with systems development to detailed, rigorous development life-cycle models and project management models.[3]



4 Spiral Model

The spiral model is a risk-driven process model generator for software projects. Based on the unique risk patterns of a given project, the spiral model guides a team to adopt elements of one or more process models.

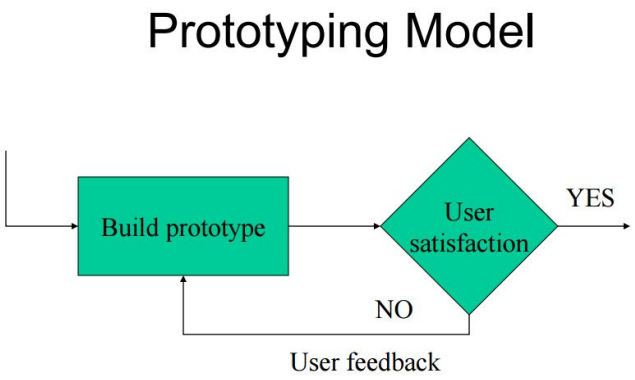


Four major activities

- Planning
- Risk analysis
- Engineering
- Evaluation

5 Prototyping Model

Prototyping is the activity of creating prototypes of software applications, i.e., incomplete versions of the software program being developed. It is an activity that can occur in software development and is comparable to prototyping as known from other fields, such as mechanical engineering or manufacturing.



Goals

- 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

5 Conclusion

The report gives a brief and concise explanation to the Software Development Processes, Waterfall model, V model, Spiral Model and Prototyping model.

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References

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