Software Development Processes

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Abstract

In this project I will talk about software development processes and Software Process Model.

Key word: waterfall model ,"V" model, spiral model, Prototyping ,ModelIncremental Model, Iterative Model.

Introduction

Software Process is the set of activities, methods, and practices that are used in the production and evolution of software.Software Process Model is one specific embodiment of a software process architecture. This article will give a brief introduction of software process and software process model.

1.Why modeling?

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

1.Waterfall module

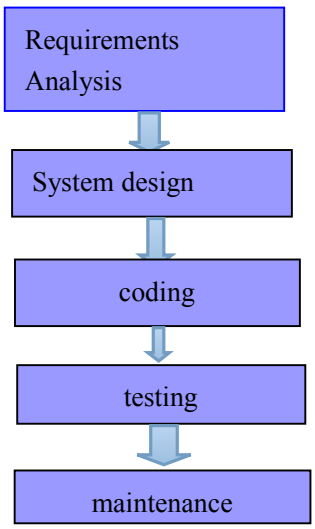

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Figure 1: waterfall model: it is a classic model using one-shot approach, it can effectively control the easy project because it has a limited iteration and its cycle time is too long, if it has a mistake its difficult to go back. So it is not suitable for system of high uncertainty.

4. "V" model

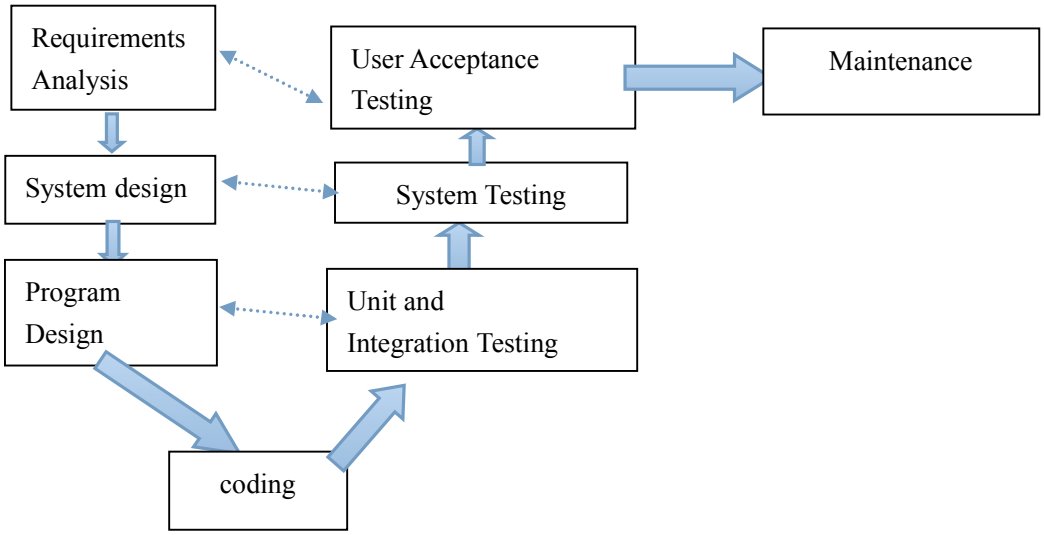

Figure 2: compared with waterfall model, 'V' model has two more testing steps to test the analysis and design, the loop will go back if mistake.. It's more complex than waterfall but more safe.

5.spiral model

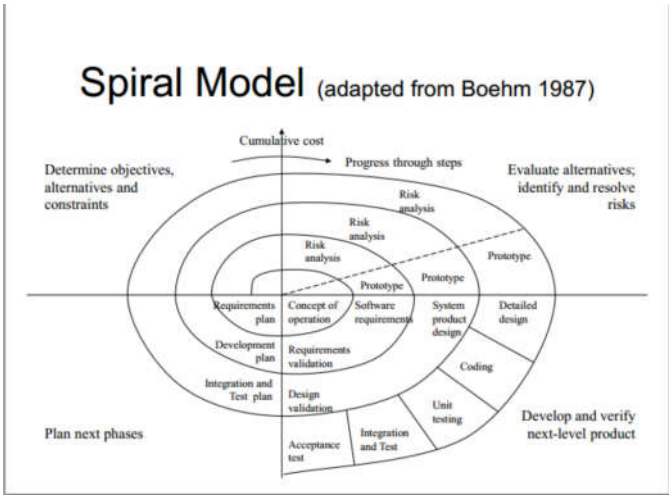

Figure 3: spiral model. Spiral model has four steps planning, risk analysis,engineering,evaluation. Its advantage is that spiral model is good at risk analysis. It means after every main steps it will have a risk analysis so you can forbid the project if has big risks to prevent economic loss.

6.Prototyping Model

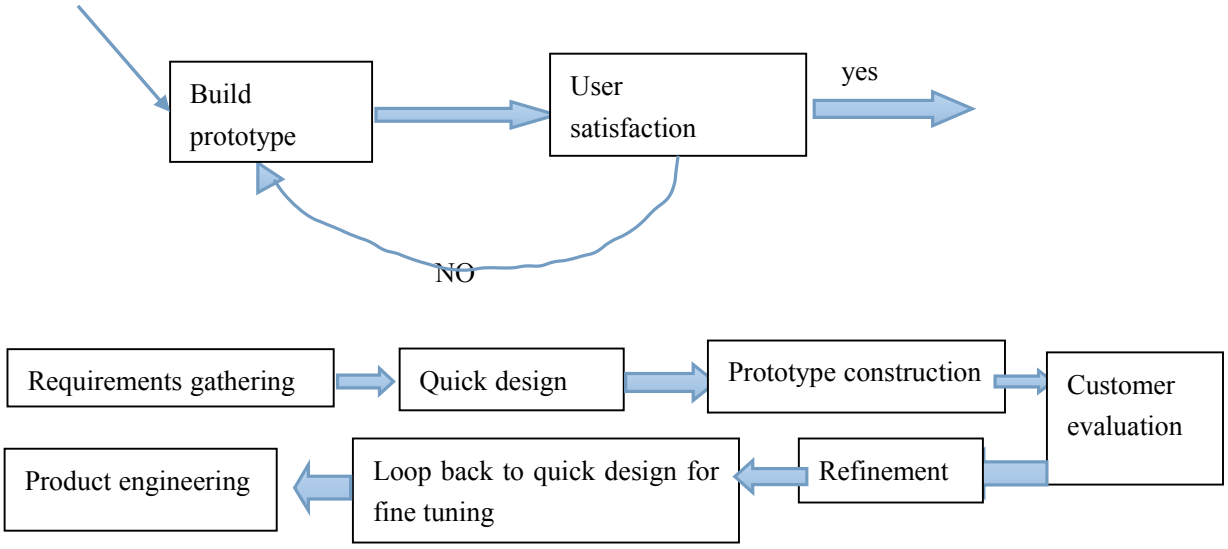

Figure4 : prototyping model.

Prototyping model is a model which meet users requirements at early stage. It can reduce risks and uncertainty, improve communication between engineer and user,improve user involvement.

Benefits of Prototyping model:

a.Demonstration of the consistency and completeness of a specification

b.Reduced need for documentation

c.Reduced maintenance costs

d.Feature constraint

e.Production of expected results for testing real system

Drawbacks of Prototyping:

a.Users sometimes misunderstand the role of the prototype

b.Lack of project standards possible

c.Lack of control

d.Additional expense

e.Machine efficiency

f.Close proximity of developers

7.Incremental Model

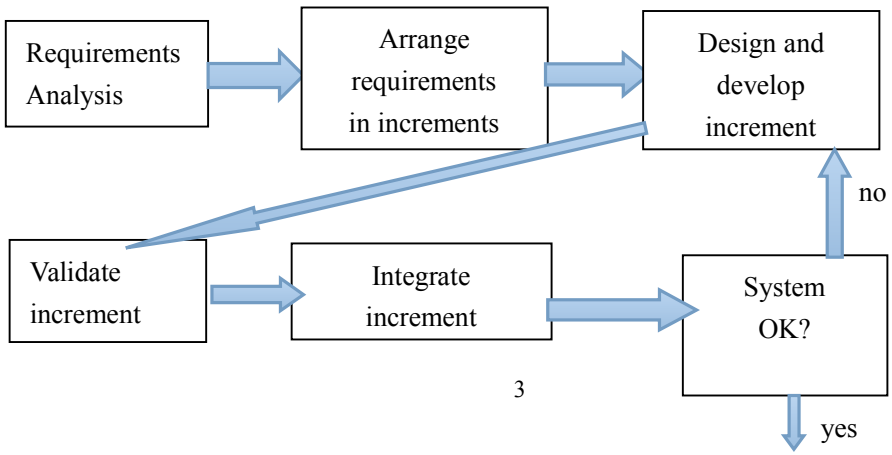

Figure 5 :Incremental Model.Incremental Model can break system into small components, implement and deliver small components in sequence .Every delivered component provides extra functionality to user.

8 Iterative Model.

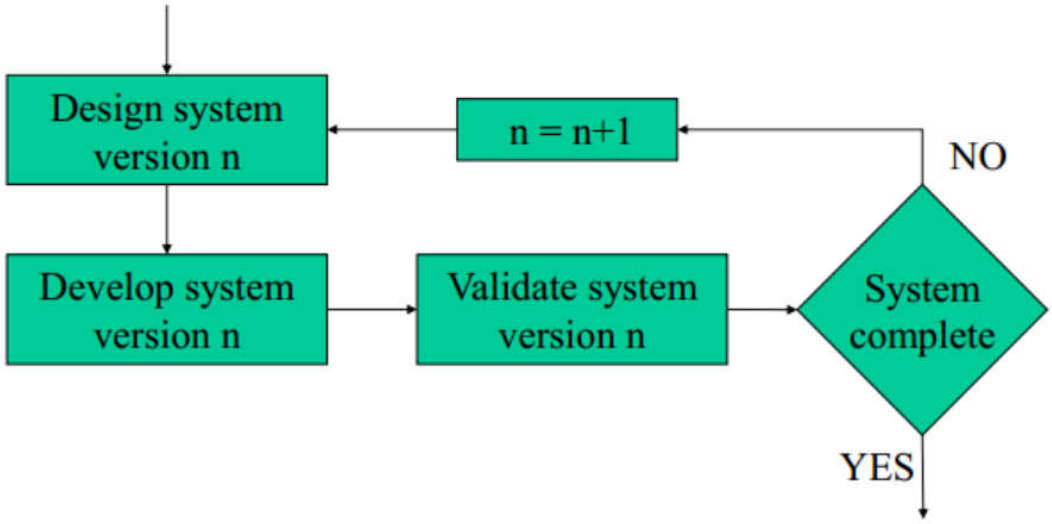

Figure 6 :Iterative Model.

Advantages of Phased Development

a.Early feedback
b.Less possible requirement changes
c.Early benefits for users
d.Improved cash flow
e.Easier to control and manage
f.Capture early market
g.Facilitate early training
hCan be temporarily abandoned
i.Increase job satisfaction

Disadvantages of Phased

a.Development
b.‘Software breakage’
c.Reduced productivity

9.Conclusion.

There different model every model has its own benefits, no one is perfect. So choosing a suitable model should depend on the user requirement and project.