



Software Engineering

هندسة البرمجيات

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المرحلة الثالثة

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Waterfall Model

Topics covered



- ✧ What is Waterfall Model?
- ✧ Phases of Waterfall Model
- ✧ Strengths of Waterfall Model
- ✧ Weaknesses of Waterfall Model

What is Waterfall Model?



- ✧ The waterfall development process model is probably the oldest model. It is sometimes referred to as classical software life cycle model. Royce (1970) is one of the earliest people to write about this model.
- ✧ The waterfall model is considered the traditional approach to systems development. It describes a development approach that is linear and sequential objectives for each phase, and in which the output is the input for the next phase.

What is Waterfall Model?



- ✧ The waterfall model was so named because once goes over the falls, it can not turn back to or go back up. Similarly, in software development, once phases has been completed, you can not return to the prior phase.

Phases of Waterfall Model

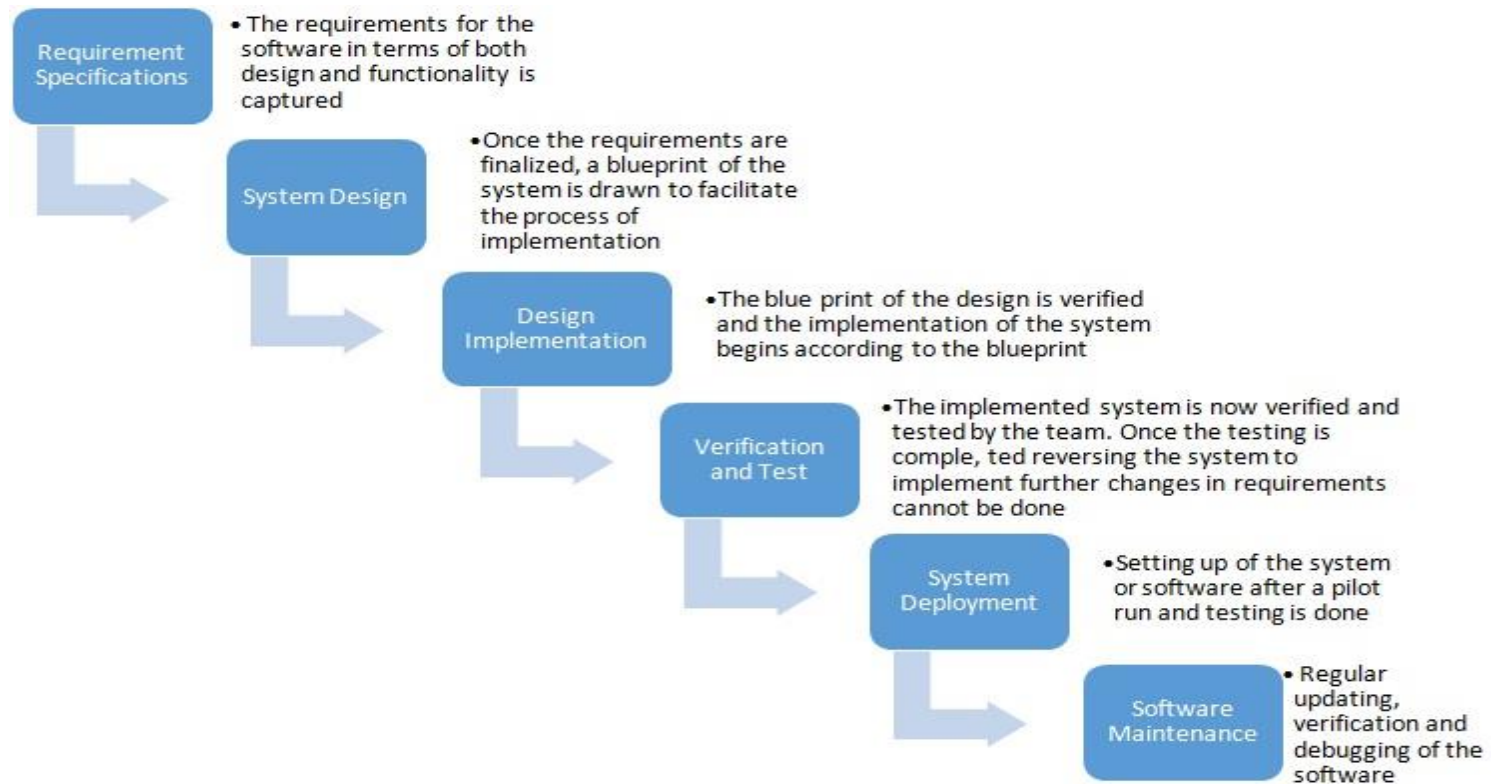


Figure 3: Waterfall Model

Verification and Validation



- ✧ Each phase stands for **Verification** and **Validation**.
- ✧ **Verification** asks if the system meets its requirements (are we building the system right) and thus tries to assess the correctness of the transition to the next phase.
- ✧ **Validation** asks if the system meets the users' requirements (are we building the right system).

Strengths of Waterfall Model



- ✧ It is well understood.
- ✧ It is easy to manage.
- ✧ When teams are distributed geographically.
- ✧ Documentation produced can reduce maintenance costs.
- ✧ Verification is done after each phase.

Weaknesses of Waterfall Model



- ✧ It does not accommodate change to requirements very well.
- ✧ All requirements must be known and defined in the beginning.
- ✧ It does not allow the team to go back and repeat a phase.
- ✧ It can not be adapted to different project types very easily.

Weaknesses of Waterfall Model



- ✧ It is not works with large, complex applications.
- ✧ Documentation and verification after each phase slow down the process.
- ✧ The working version of the system is not seen until late in project' life.



Thanks