



Software Engineering

هندسة البرمجيات

جامعة بغداد

كلية التربية للعلوم الصرفة/ابن

الهيثم

قسم علوم الحاسبات

المرحلة الثالثة

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Agile

Topics covered



- ✧ What Agile?
- ✧ Agile VS Waterfall model
- ✧ Types of Agile

What is Agile?



“**Agile**” is a relatively new term, officially coined in 2001 when a group of software professionals released a document called the **Agile Manifesto**.

Agile model VS Waterfall model



✧ Requirements:

In Agile:

Assumes they will change

In waterfall:

Assume they will not change

Agile model VS Waterfall model



✧ Design:

In Agile:

Informal and iterative

In waterfall:

Formal, and done up front

Agile model VS Waterfall model



✧ User involvement:

In Agile:

Crucial, frequent, through-out the whole process

In waterfall:

Required only at the beginning

Agile model VS Waterfall model



✧ Documentation:

In Agile:

Minimal, only what is necessary

In waterfall:

Usually required heavy, formal documentation of every phases of project

Agile model VS Waterfall model



✧ Communication:

In Agile:

Done informally, through the project

In waterfall:

Relies mainly on documents and formal memos and meetings

Agile model VS Waterfall model



✧ Process complexity:

In Agile:

Relatively, low; initial description contains less than 200 pages

In waterfall:

High

Agile model VS Waterfall model



✧ Overhead:

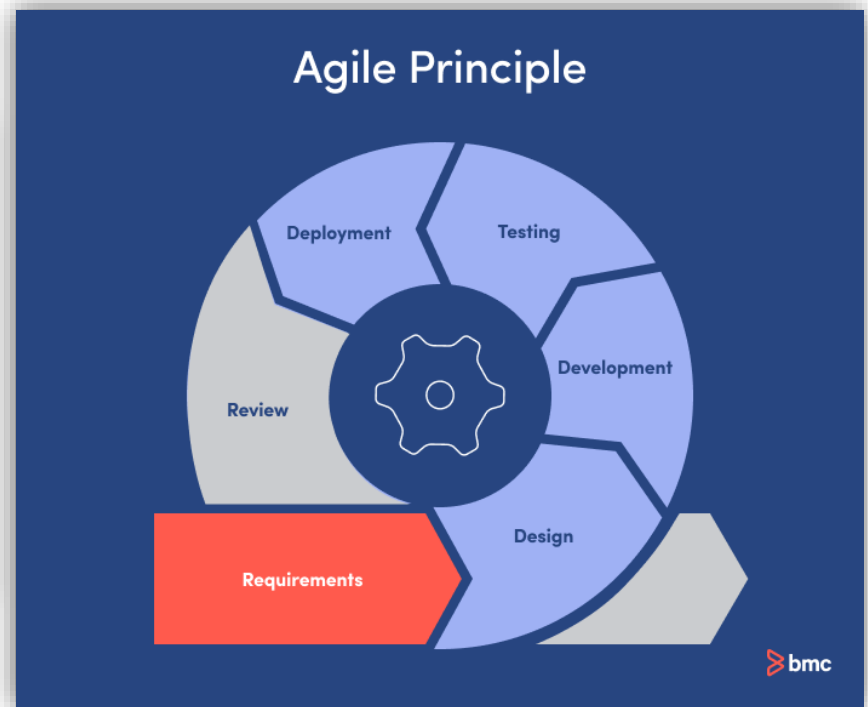
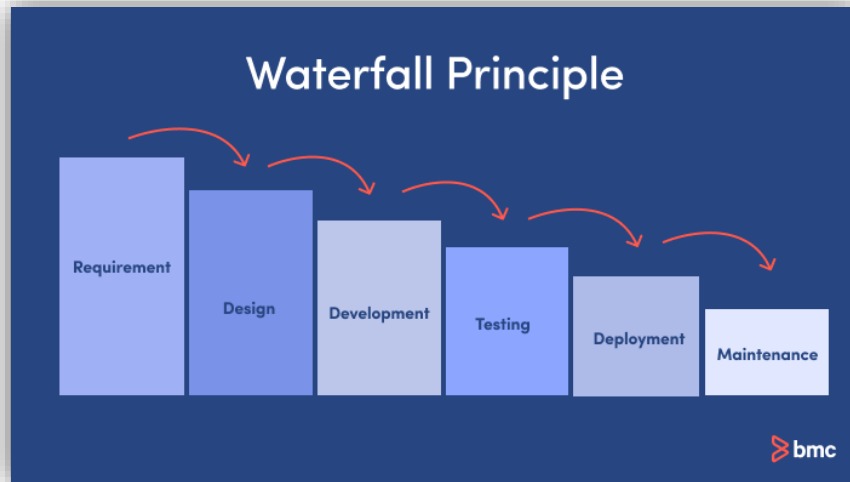
In Agile:

Low

In waterfall:

High, although it can be scaled down for small projects

Agile model VS Waterfall model



Types of Agile



- ✧ Extreme Programming (XP)
- ✧ Crystal Family (Crystal Clear & Crystal Orange)
- ✧ Scrum
- ✧ Dynamic Systems Development Model (DSDM)

Extreme Programming (XP)



Most popular Agile process. Requires high discipline and adherence to principles and practices. Based on four core values (**communication, simplicity, feedback, courage**), five fundamental principles:

- ✧ **Rapid feedback**
- ✧ **Simplicity**
- ✧ **Incremental change**
- ✧ **Embracing change**
- ✧ **Quality work**

Crystal Clear



Extremely light in methodologies. Does not require adherence to all principles. Based on seven principles:

- ✧ Frequent delivery
- ✧ Reflective improvement
- ✧ Close communication
- ✧ Personal safety
- ✧ Easy access to expert users
- ✧ Good technical environment
- ✧ Will only work for small projects and teams

Crystal Orange



- ✧ A heavier methodology than Crystal Clear and suitable for large projects. It has different teams for different functions. Still not suitable for large or life critical projects.

Scrum



- ✧ Scrum theory is based on the experimental learning circle. This states that knowledge and understanding come from a process of planning something, doing it, reviewing how it worked and then adapting the process to be used the next time
- ✧ The scrum team consists of the product owner, the development team and the scrum master
- ✧ The optimum size for the development team is between five and nine people (not counting the product owner and scrum master)
- ✧ The scrum master's role is to facilitate the team's processes, deal with any obstructions and ensure the correct processes are being followed

Dynamic Systems Development Model (DSDM)



- ✧ Active user involvement is imperative
- ✧ The team must be empowered to make decision
- ✧ The focus is on frequent delivery of products
- ✧ Fitness for business purpose is the essential criterion for acceptance of deliverables
- ✧ Change during development are reversible
- ✧ Requirements are baselined at a high level
- ✧ Testing is integrated through out the cycle
- ✧ A collaborative and cooperative approach between stakeholders is essential



Thanks