Introduction to UML; Cours 1

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*Diapo : Course1*

### 1/ Introduction : Understand the specification to produce the software

Encouraged reading : <https://www.wsj.com/articles/SB10001424053111903480904576512250915629460>

Every company is a software company

Eg : Ariane 5 if condition true only on Ariane 4, so crashed

2/ Issues

Complex systems + many technologies + environnements + stakeholders

3/ Imporvements

Need to improve : quality and productivity

You have to product quickly the software because of :

* Costs
* People are waiting
* Technological evolution

4/ Requirements

* Req1: software process (waterfall/V-Cycle/Agile…)
* Req2 : eg : language : Java; Tools : Slack;

5/ Process models

**Waterfall mode**l

* **Step 1** : analyze all the specifications. You have to understand what the customer needs.
* **Step 2** : you have to propose a solution. *How to solve the problem*?
* **Delivery/maintenance** : eg : updates (bug fix…). Very important step, since it’s very evolutive.

**V-cycle process model**

* **2 axes** : one for development and the other one for testing.

All the process models have more or less same steps. You have to analyze what is the problem, how to answer it and what does the customer wants.

### 6/ Model

* Communication
* Makes it more easy to understand the system
* It’s easier to manage to system
* You can simulate your system
* If there is problems; there isn’t much of consequences
* Abstraction != simplification
* You manage the complexity

<https://informationisbeautiful.net/visualizations/million-lines-of-code/>

If you have only the source code, you lose your expertise on he project. So you need other models….

You also use models so you can increase productivity.

With UML you can generate automatically the source code of a lot of classes.

UML = Unified Modeling Language

The standard !

-> Allow reverse engineering

Modelio : tool to use