

UML ,Unified Process (UP) & Inception



UML

- The unified modeling language is a visual language for specifying , constructing and documenting the artifacts of systems.

- **3 Ways to apply UML**

1. UML as sketch

Informal or incomplete diagrams created to explore difficult parts of the problem or solution .

2. UML as blueprint

Detailed design diagrams used for either forward engineering or reverse engineering .

3. UML as programming language

Still under development

Complete specification of a software system in UML.



3 Perspectives to apply UML

- Conceptual perspective

The diagrams are interpreted as describing things in a situation of the real world or domain of interest.

- Specification perspective

The diagrams describe software abstractions or components with specifications and interfaces but no commitment to a particular implementation.

- Implementation Perspective

The diagrams describe software implementations in a particular technology.



Class – Meaning

- In UML rectangular boxes are called as classes .
- **In UP**
- when the UML boxes are drawn in the domain model they are called domain concepts or conceptual classes.
- When UML boxes are drawn in the design model they are called design classes.
- The design classes shows a specification or implementation perspective .

What is the UP ?

- A software development process describes an approach to building , deploying and possibly maintaining software .
- Iterative development process
- Used for building object oriented systems.
- Rational Unified Process or RUP-A refinement of UP .
- UP is flexible .
- Supports test driven development , refactoring and continuous integration, XP.



Key concepts in UP

- Tackle high risk and high value issues in early iterations.
- Continuously engage users for evaluation, feedback and requirements.
- Build a cohesive , core architecture in early iterations.
- Continuously verify quality .
- Apply use cases where appropriate
- Do some visual modeling (UML)
- Carefully manage requirements
- Practice change request and configuration management.



UP Phases

4 phases

- Inception
- Elaboration
- Construction
- Transition



UP Phases

- Inception
Identify approximate vision , business case , scope , vague requirements .
- Elaboration
Refined vision , Iterative implementation of the core architecture , resolution of high risks , identification of most requirements and scope .
- Construction
Iterative implementation of the lower risk and easier elements and preparation for deployment.
- Transition
Do Beta Tests ,then deployment



Unified Process Discipline

- Business Modelling
- Requirement Analysis
- Design
- Implementation
- Testing
- Deployment
- Configuration and Change Management
- Project Management
- Environment

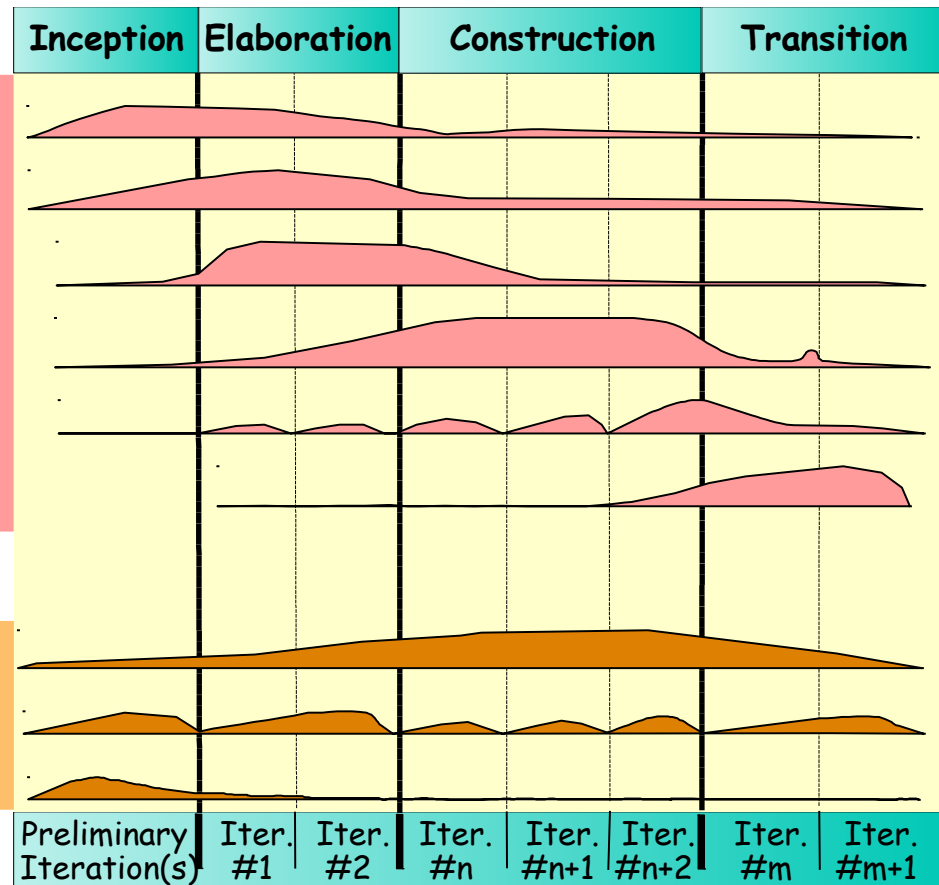
Phases

Process Workflows

Business Modeling
Requirements
Analysis & Design
Implementation
Test
Deployment

Supporting Workflows

Configuration Mgmt
Management
Environment



Inception : Initial short step in the process

What needs to be done?

- Describe the *initial common vision* and business case for this project.
- Exhibiting at *least one candidate architecture*
based on experience gained from similar systems or in similar problem domains
- Determine if the project is *feasible*
- Determine if the organization should *build or buy* the necessary system
- Make a *rough estimate* of the *cost* and *time* .
- Determine if we should *go ahead* with the project *or stop*

Example Questions in Inception

Ask questions such as:

- What is the vision and business case for this project?
- Feasible?
- Buy and/or build?
- Buy components and glue them together or from scratch?
- Estimate potential risks
- Rough estimate of cost: Is it \$10K-100K or in the millions?
- Should we proceed or stop?

If the answer is YES

Feasible ?

Legal feasibility

No conflicts with legal requirements, e.g. a data processing system must comply with the local Data Protection Acts..

Schedule feasibility

Schedule feasibility is a measure of how reasonable the project timetable is. Given our technical expertise, are the project deadlines reasonable?

Cultural feasibility

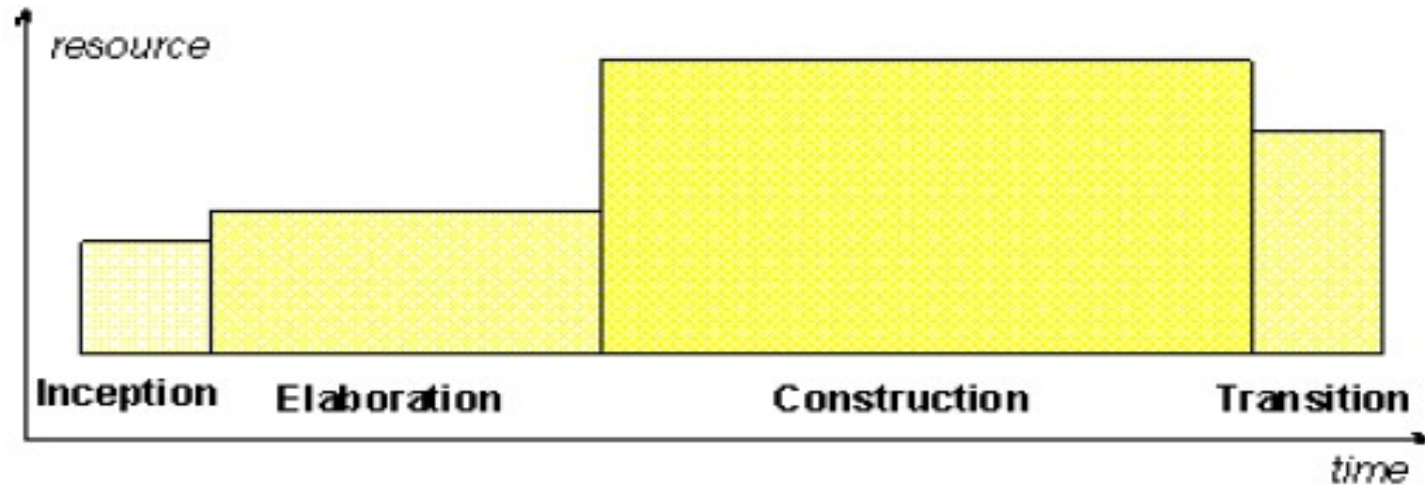
Impact on the local and general culture

Resource feasibility

So what is the purpose of Inception ?

- Do just enough investigation to be able to present a rational business case to show purpose, feasibility and need for the proposed software.
- Plans and estimates created during the inception phase are ***not to be considered as reliable***
- Decide whether it is worth to make serious investigation (during elaboration) further or stop right now?

How Long Should the Inception Phase be?



	Inception	Elaboration	Construction	Transition
Effort	5 %	20 %	65 %	10%
Schedule (length)	10 %	30 %	50 %	10%

What Artifacts (documents or model) may start in Inception?

- **Vision and Business Case:** describes the high-level goals and constraints, provides an executive summary;
- **Use Case Model** ([next chap](#)): describes the ***fundamental requirements***: during inception identify the names of the use cases and analyse perhaps **10%** of the them;
- **Supplementary specification:** describe non-functional requirements, look-and-feel, atmosphere etc.

What artifacts (documents or model) may start in Inception?

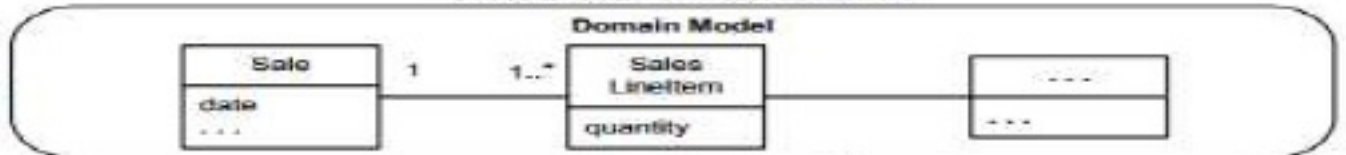
- **Glossary:** keeping track to key terms;
- **Risk list and risk management plan:** describe the risks (business, technical, resource, schedule) and ideas for their mitigation;
- **Prototypes and proof-of-concepts:** to clarify the vision, and validate technical ideas;
- **Iteration Plan:** Describes what to do in the first elaboration iteration, and overall goals of the elaboration phase;

IMPORTANT :

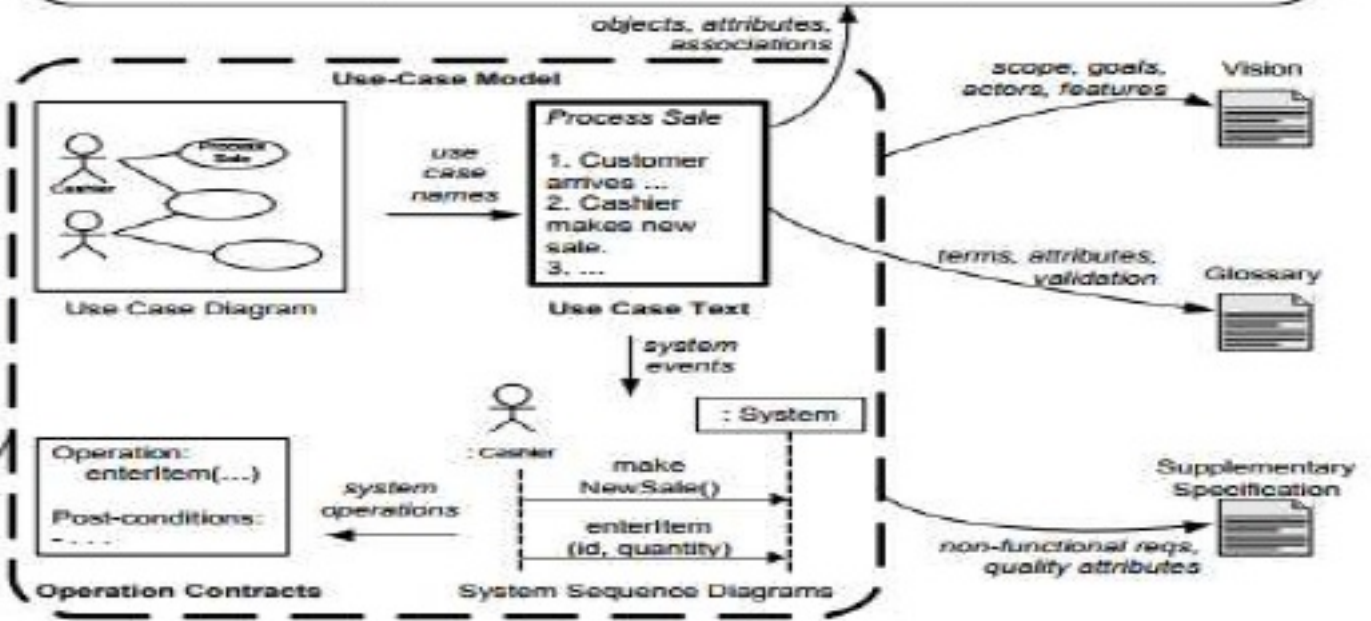
Artifacts will be partial at this stage. Will be refined in later iterations.

Sample UP Artifact Relationships

Business Modeling



Requirements



Design

