

PXL – Digital 421280 Software Analysis Intro - Requirements development & management

Week 01 – period 01

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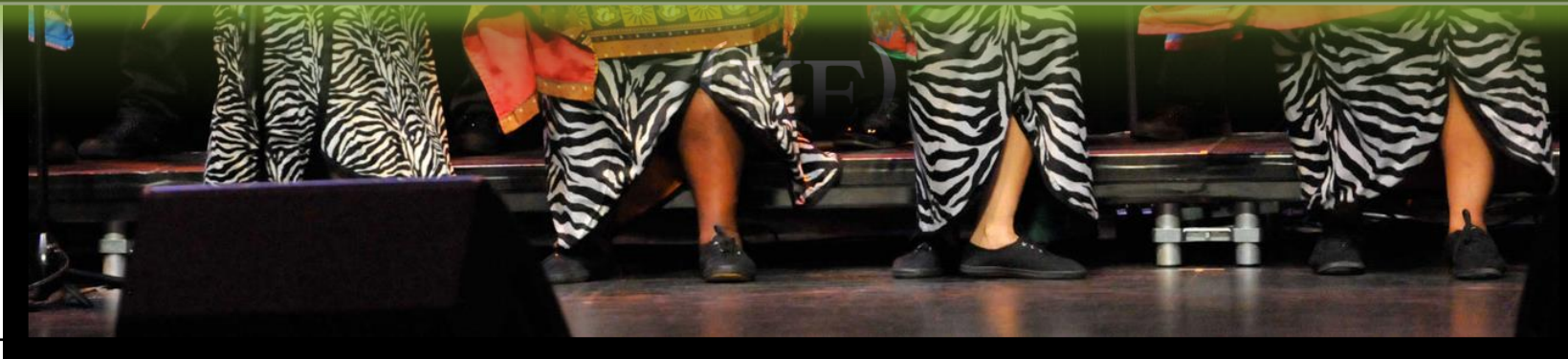


Content

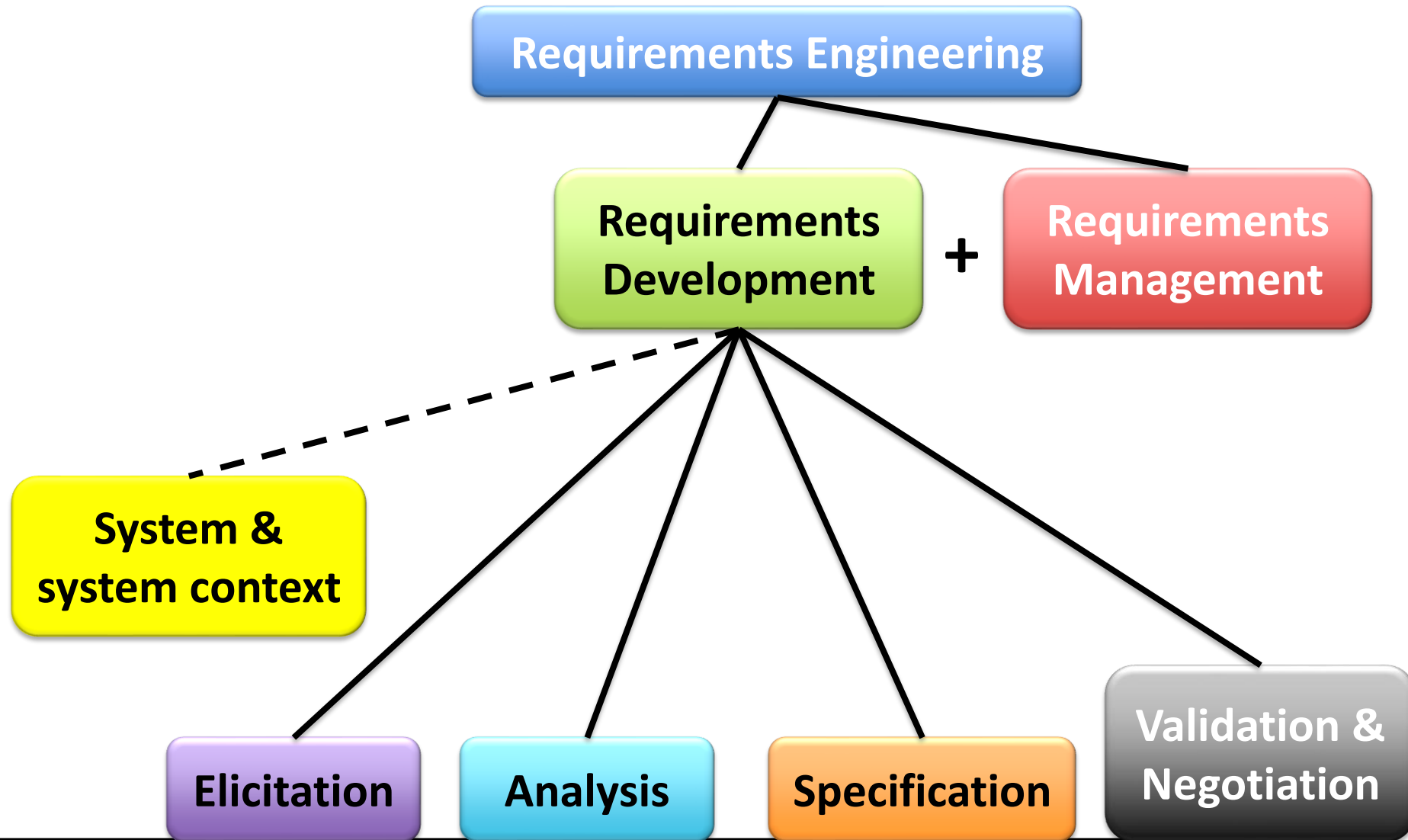
- The essential software requirement
- What are requirements?
- Levels and types of requirements
- Best practices: international standards – ISO
- SMART requirements
- Best practices: JIRA - EPICS - USER STORIES
- **Requirements development and management**
- **Brief history of requirements methods & modeling**
- The role of the analyst + recap case
- Questions & Answers



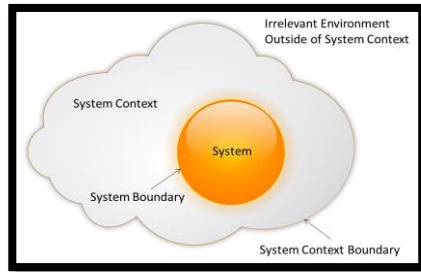
Requirements development & management (RE)



Requirements Engineering – Overall picture (1)



Requirements Engineering – Overall picture (2)



System & system context

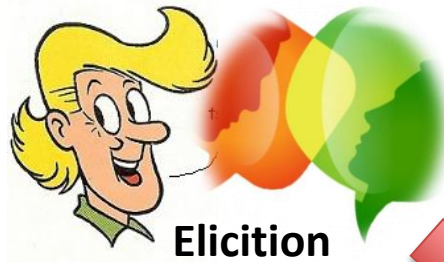


Verification & Validation

RMS



Manage & Trace



Elicitation



Analysis & Specification

Requirements Engineering

- A systematic and disciplined approach to the specification (development) and management of requirements with the following goals:
 - Knowing the **relevant** requirements, achieving a **consensus** among the stakeholders about these requirements, **documenting** them according to the given standards, and managing them systematically,
 - Understanding and documenting the **stakeholders' desires** and needs,
 - Specifying and managing requirements to minimize the **risk** of delivering a system that does not meet the stakeholders' desires and needs.

Requirements Management

- The process of managing **existing requirements** and requirements **related artifacts**.
- Includes particularly **storing, changing** and **tracing** of requirements.



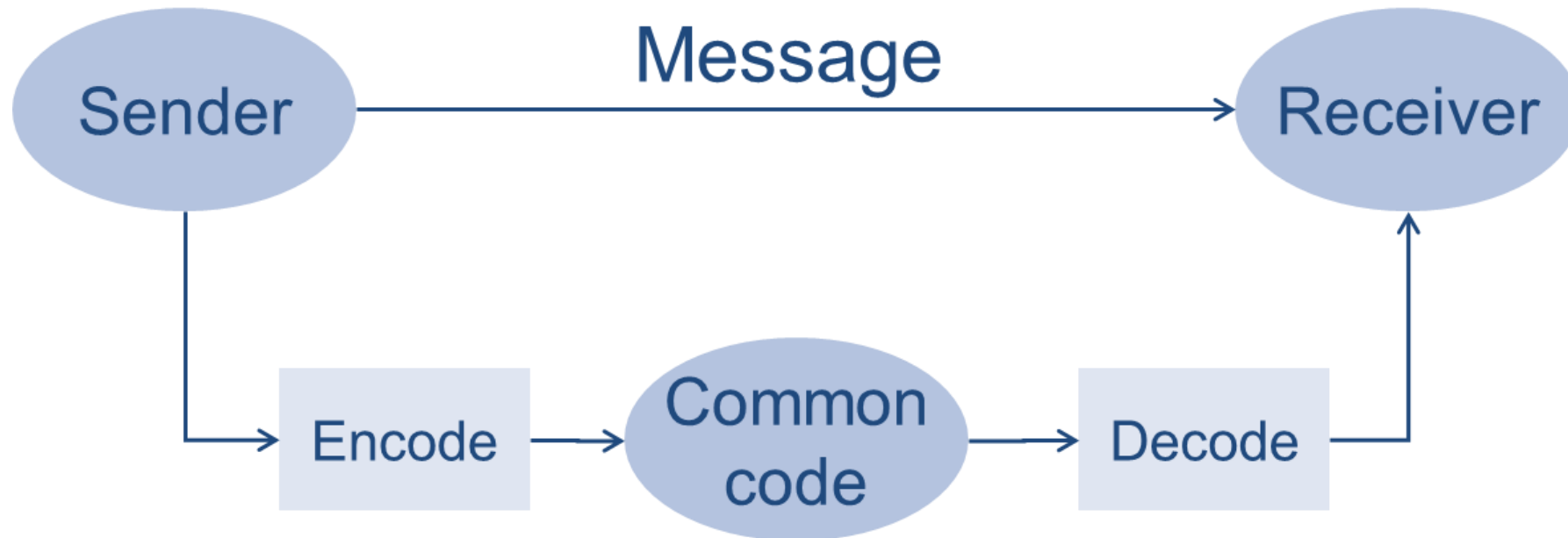
Common Requirements problems

- Typical **symptoms** of inadequate RE:
 - Missing requirements
 - Unclear requirements
- Typical **reasons** for inadequate RE:
 - Wrong assumption stakeholders: 'much is self-evident'
 - Communication problems
 - Experience
 - Knowledge
 - Project pressure from the client

There is not one solution

- **Influencing factors** related to:
 - **Business**
 - Type of system, applicable standards, importance of quality requirements (RAMS: Reliability, Availability, Maintainability, Safety)
 - **Project**
 - Outsourcing, size, number and availability of stakeholders, customer involvement
 - Development process
 - Waterfall, V-Model, Iterative, Incremental, Agile
 - **Human factors**
 - Personal profiles, politics, cultural differences

Basic Communication Model



Informal vs. Formal Communication

- Informal descriptions (unstructured, no rules apply)
 - Subjective and thus misunderstood
 - No universal language
- Formal descriptions (defined rules)
 - No misunderstandings, re-usable
 - The description is appropriate to the matter at hand
- Cf. Requirements documentation: Requirements types, attributes rules and models will be introduced

20 - 80 Rule in Communication

How a message is received is determined by:

- 20 % WHAT is said (words)
- 30 % on HOW it is said (tone used)
- 50 % by the EXPRESSION (face, attitude)

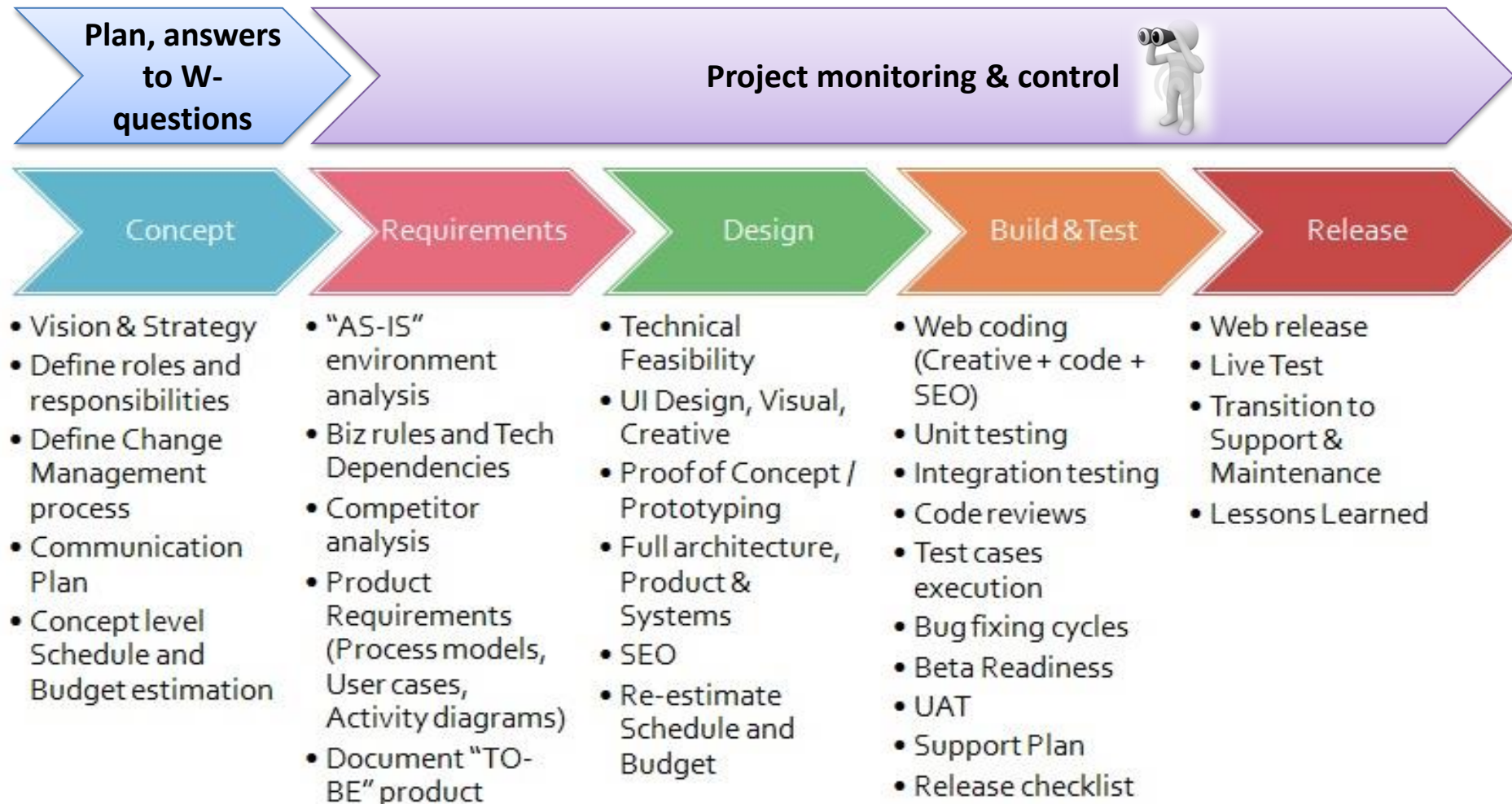
Explaining knowledge \Leftrightarrow Describing requirements
(Cf. behavior of business analyst, requirements engineer)



Brief history of requirements ...

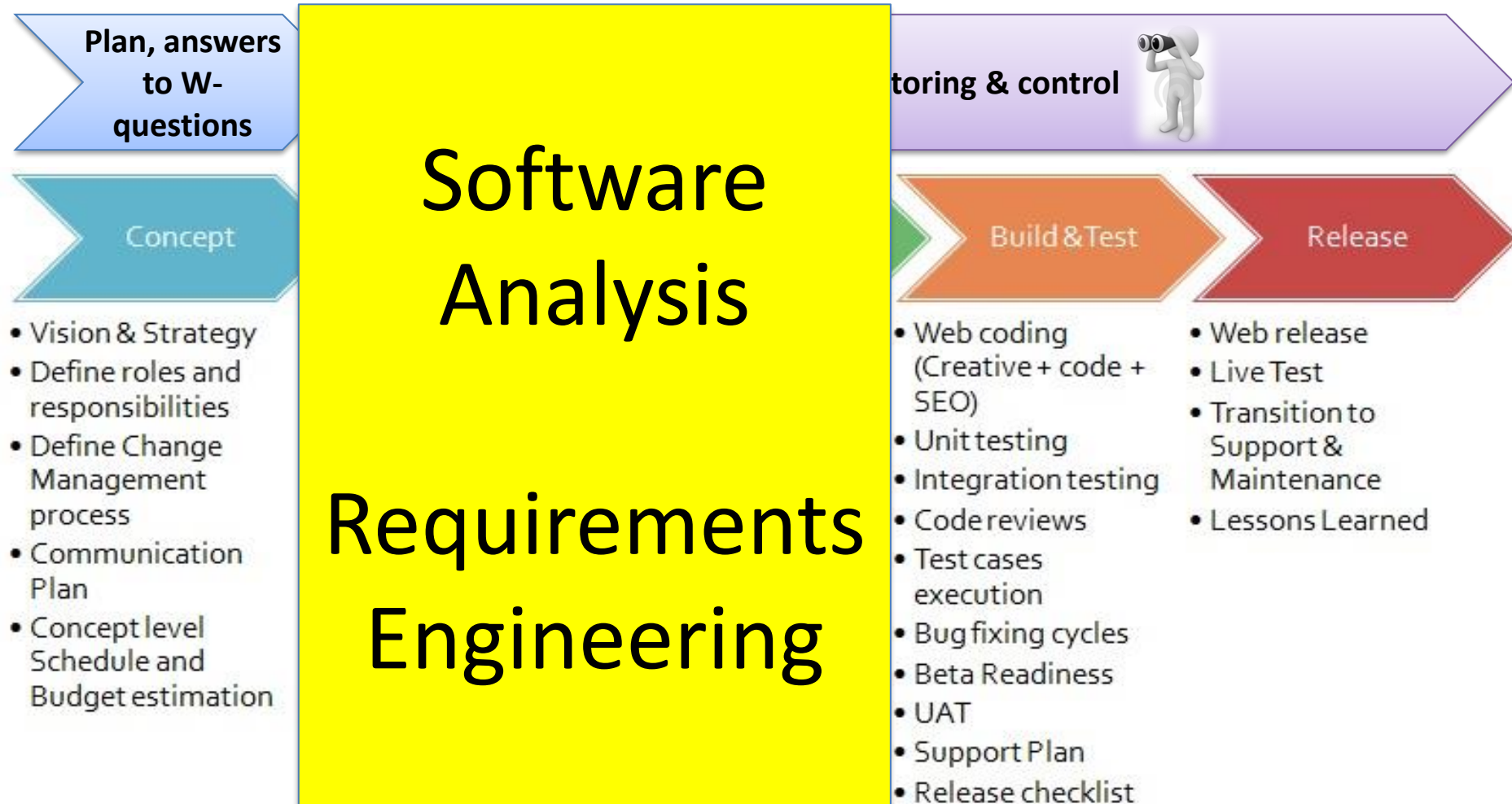
Brief history of requirements ...

- Recap 01: a simple presentation of a project life cycle
- Waterfall model



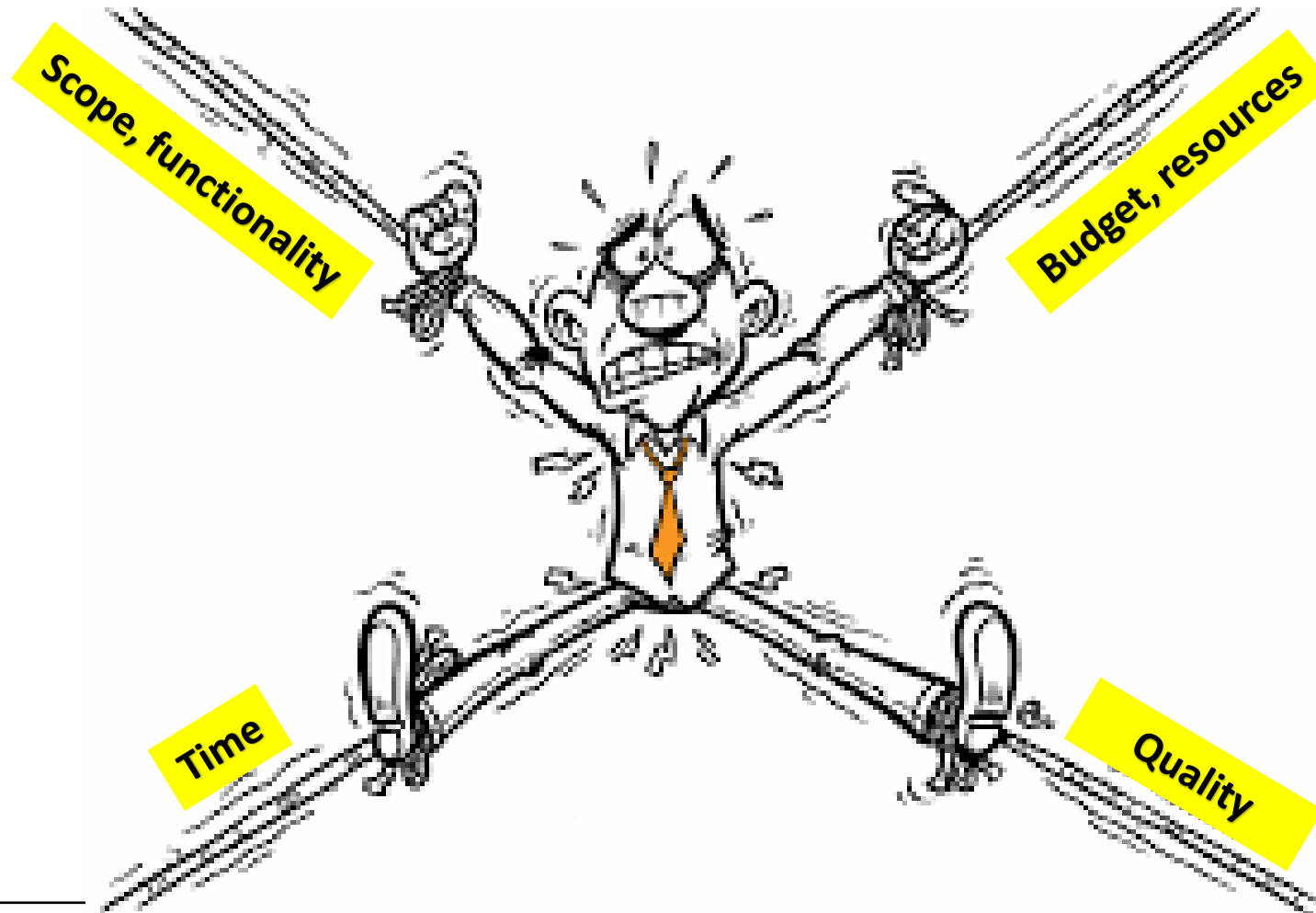
Brief history of requirements ...

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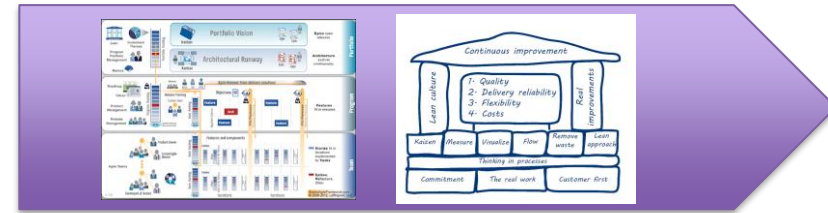
Brief history of requirements ...

- Recap 02: the project leader's game



History of requirements ...

Enterprise-Scale
Adaptive (Lean & Agile)
Processes



Adaptive
(Agile)
Processes

OpenUP
(Crystal)

FDD
Scrum

Lean

Kanban
XP DSDM

Iterative
Processes

RAD

RUP

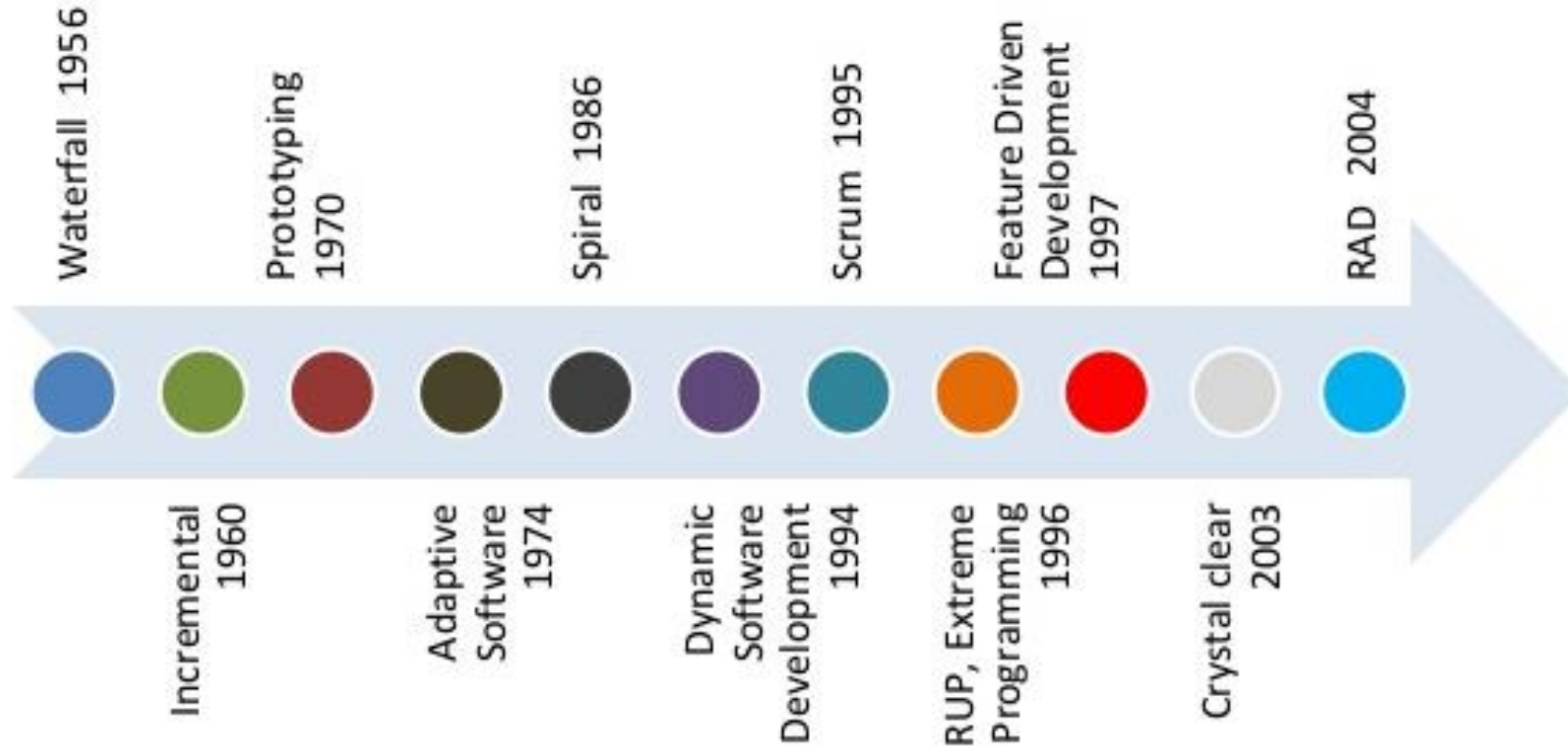
Spiral

Predictive
Processes

Waterfall V-model
model

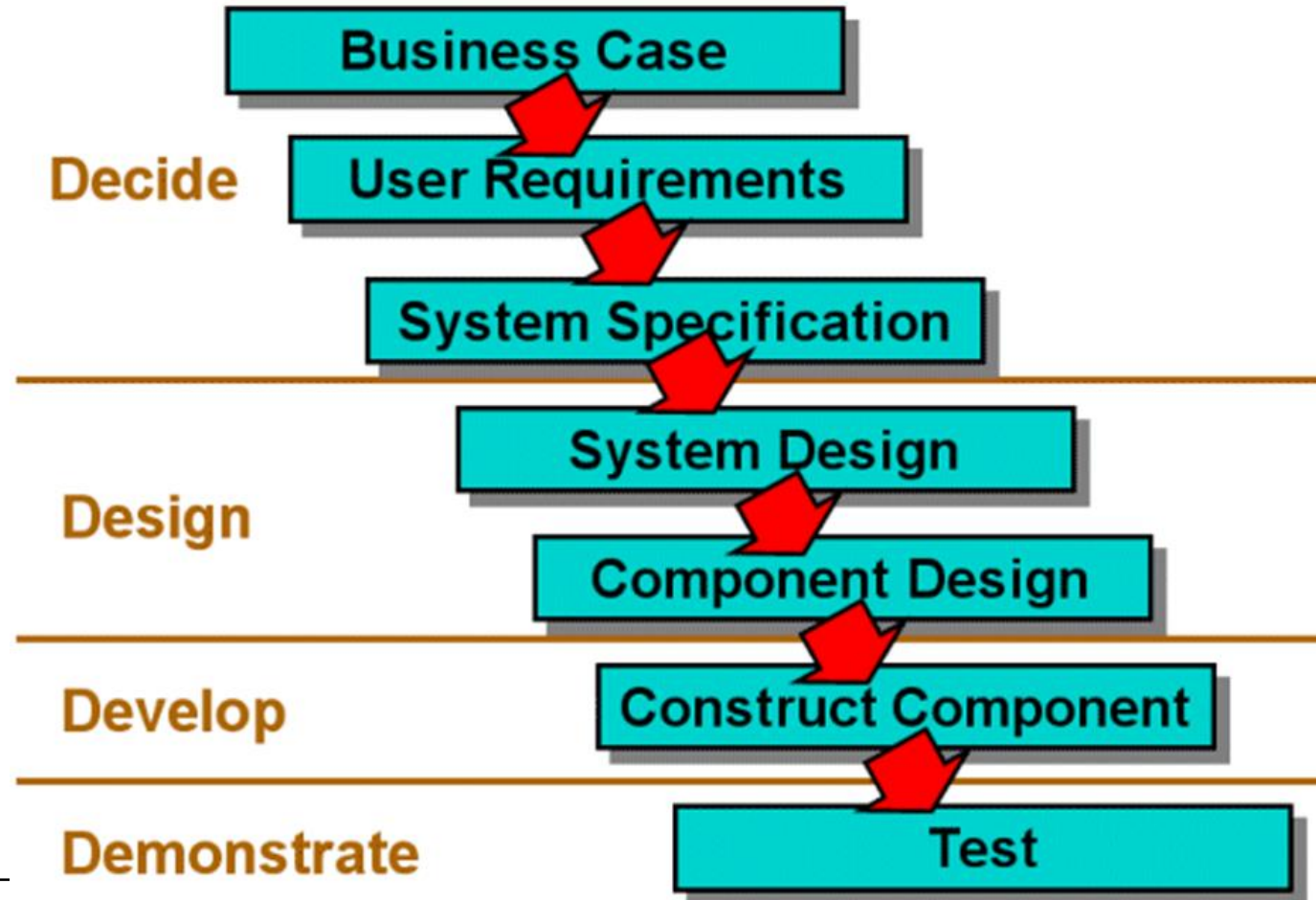
Also see OLOD “[42TIN1250 Project Management](#)” (Lowie Vangaal, ...)

Retrospect of last week ...



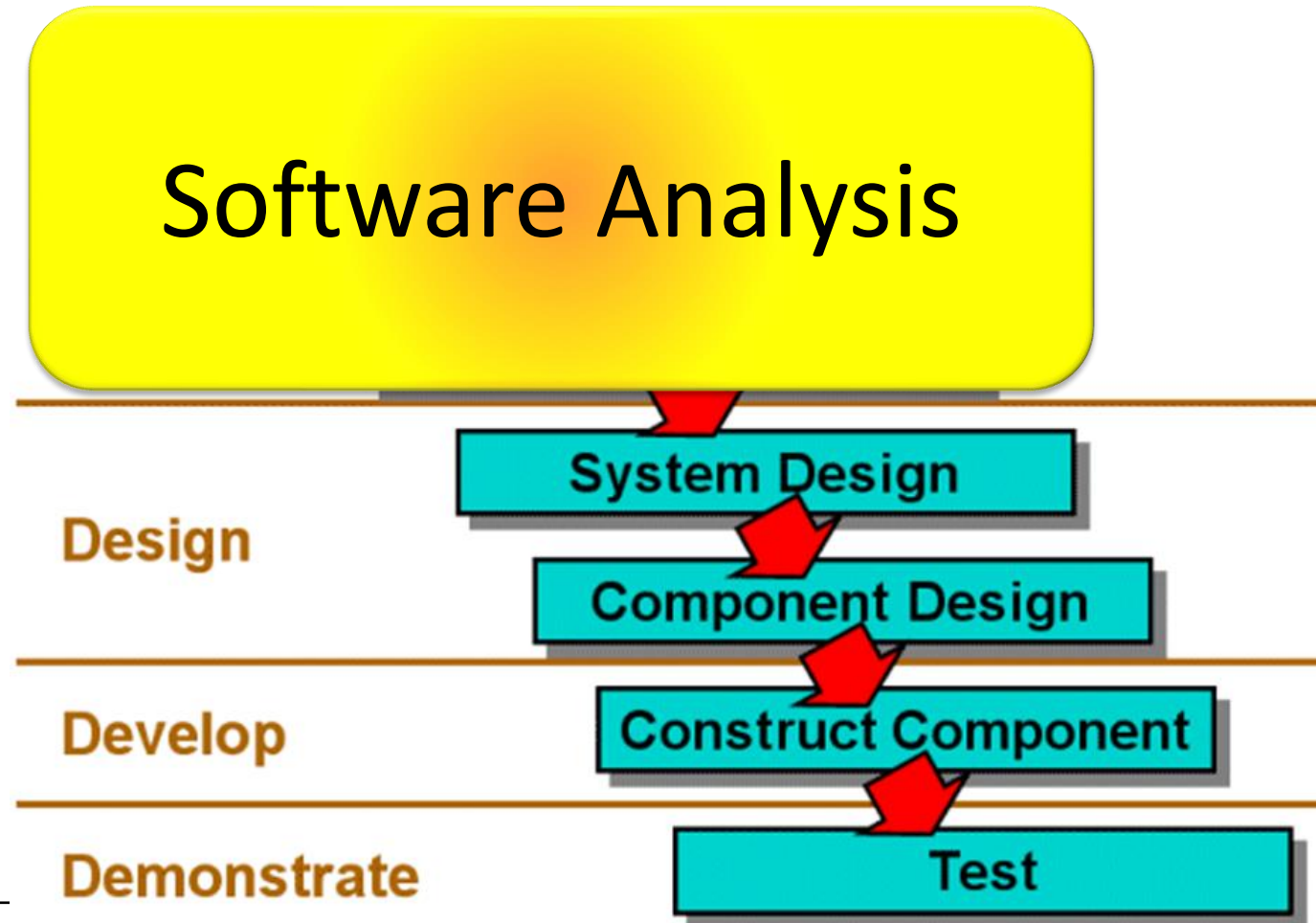
Retrospect of last week ...

- Waterfall - Where does Software Analysis fit in?



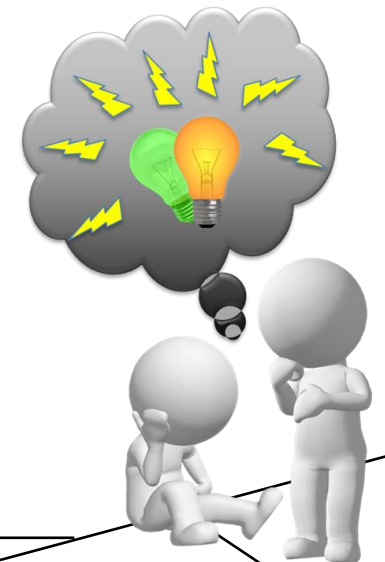
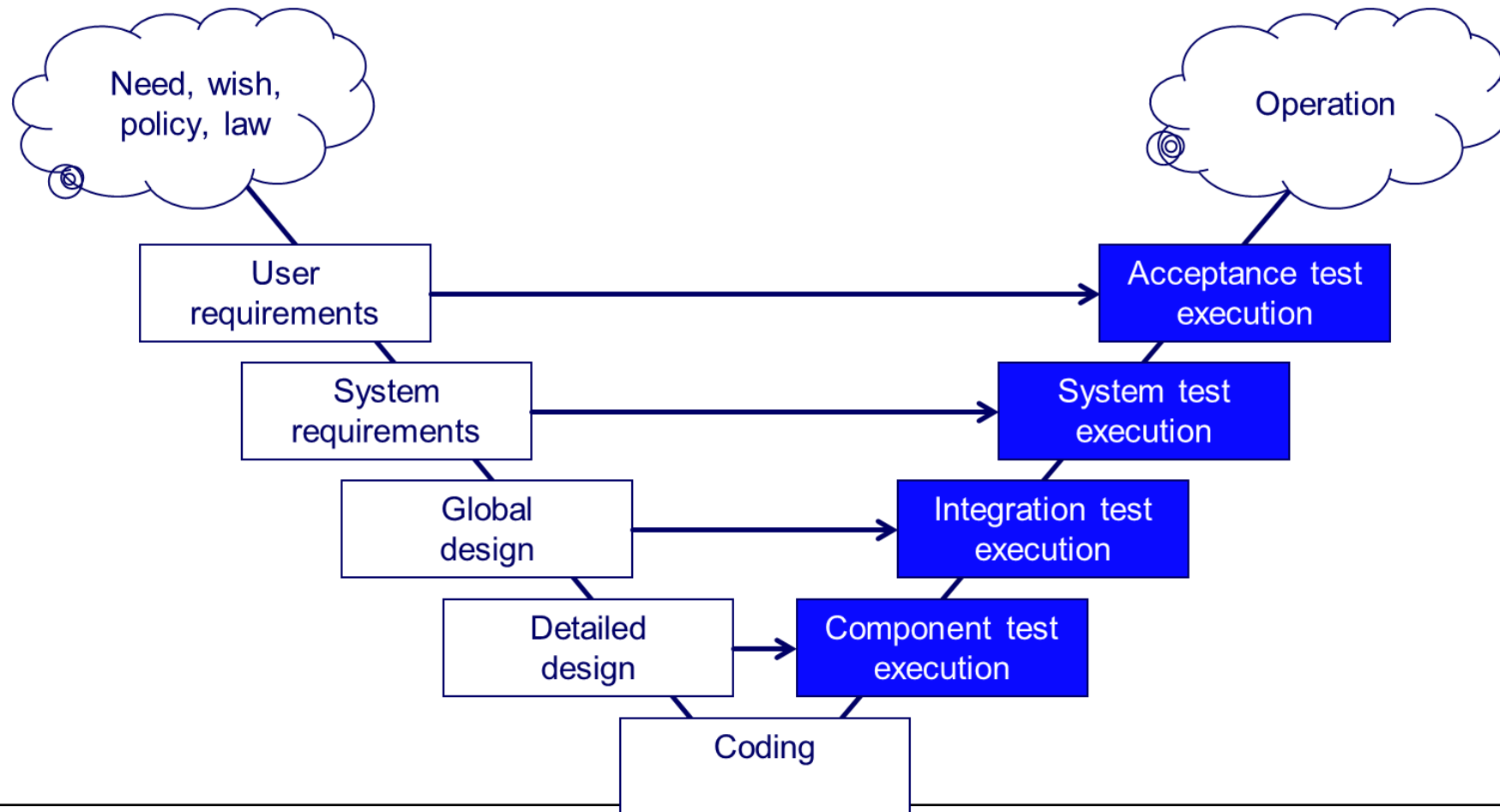
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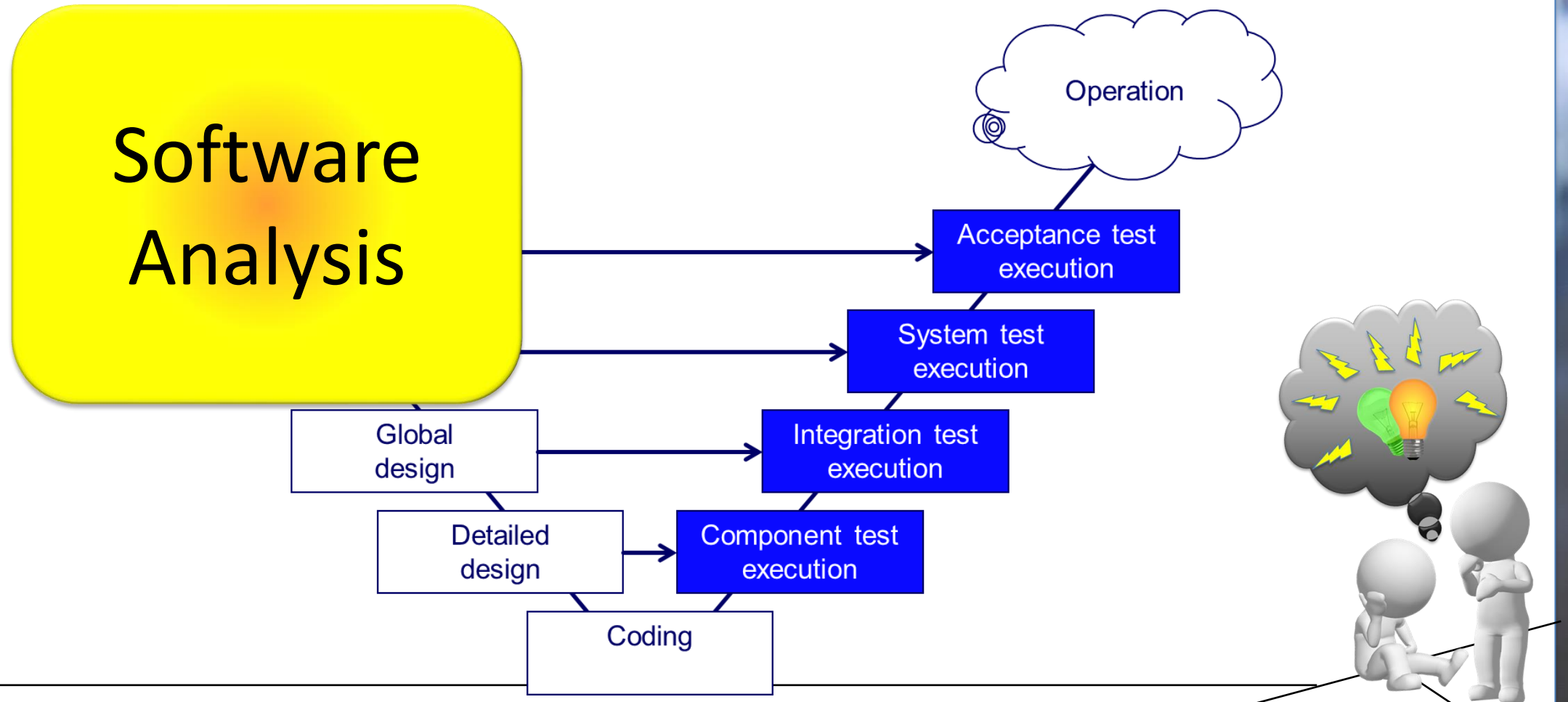
Retrospect of last week ...

- V-model - Where does Software Analysis fit in?



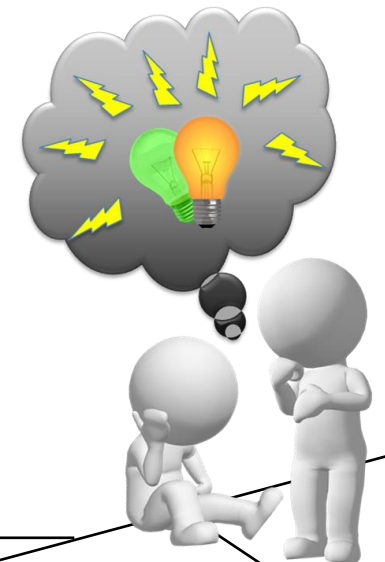
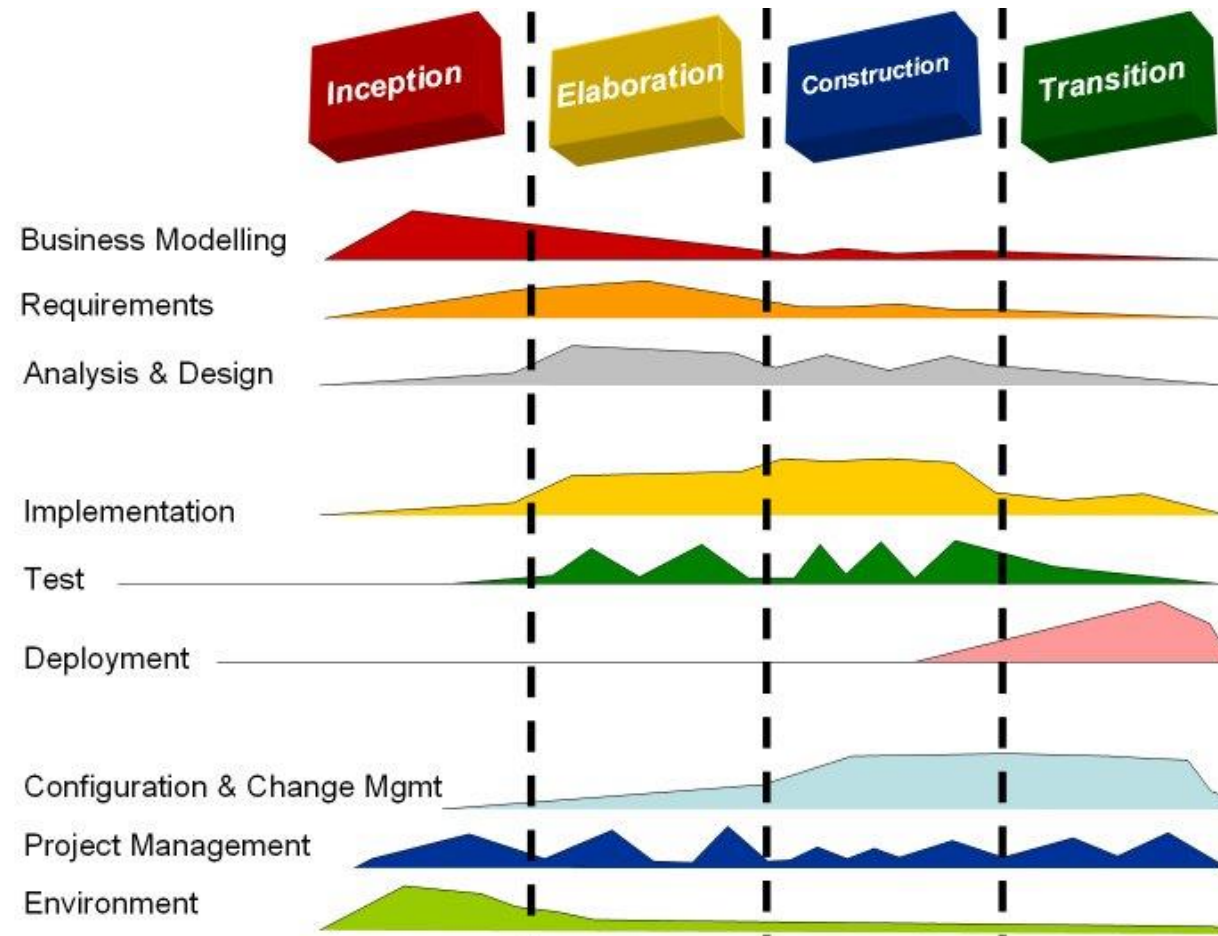
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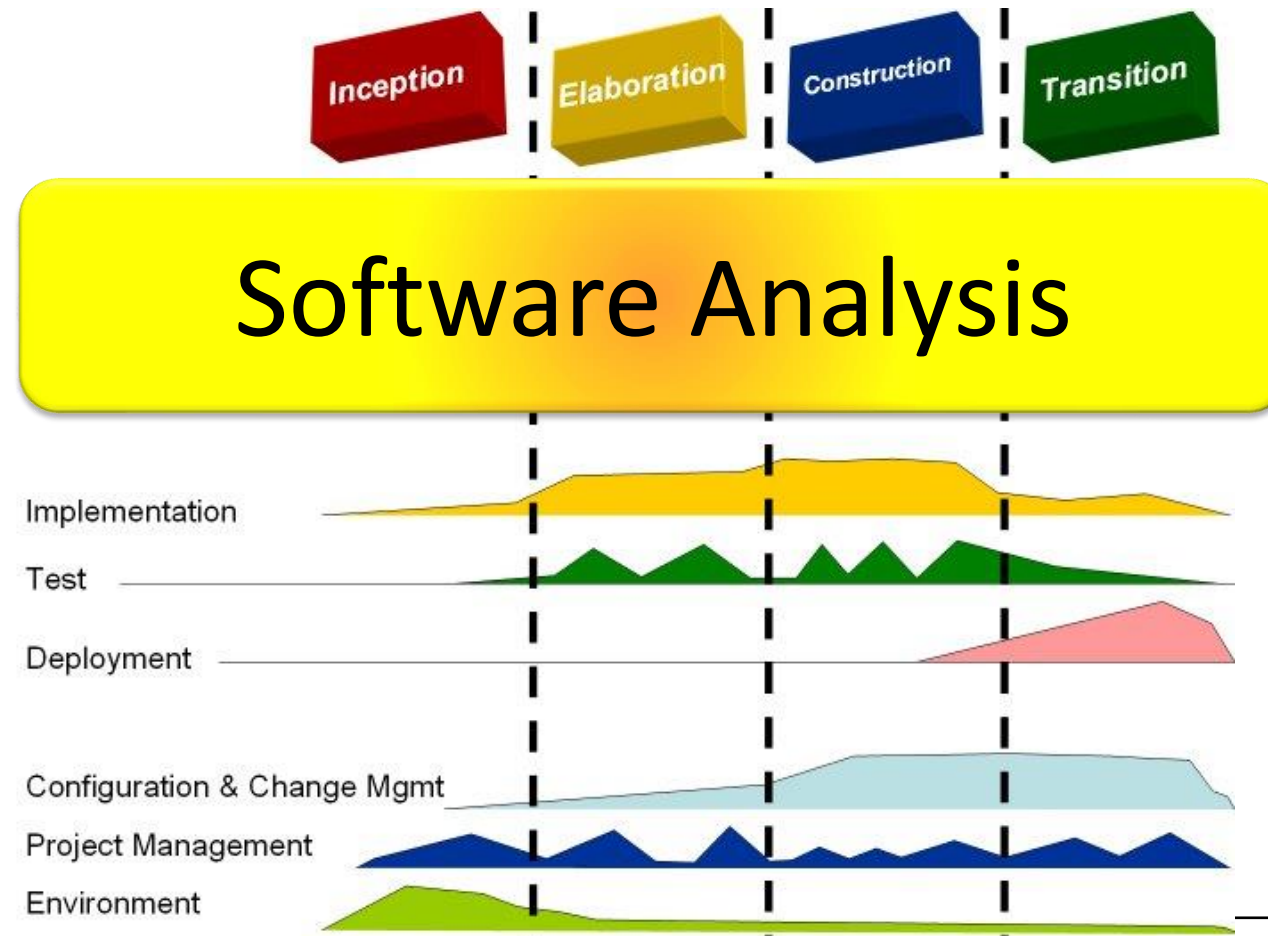
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- RUP - Where does Software Analysis fit in?



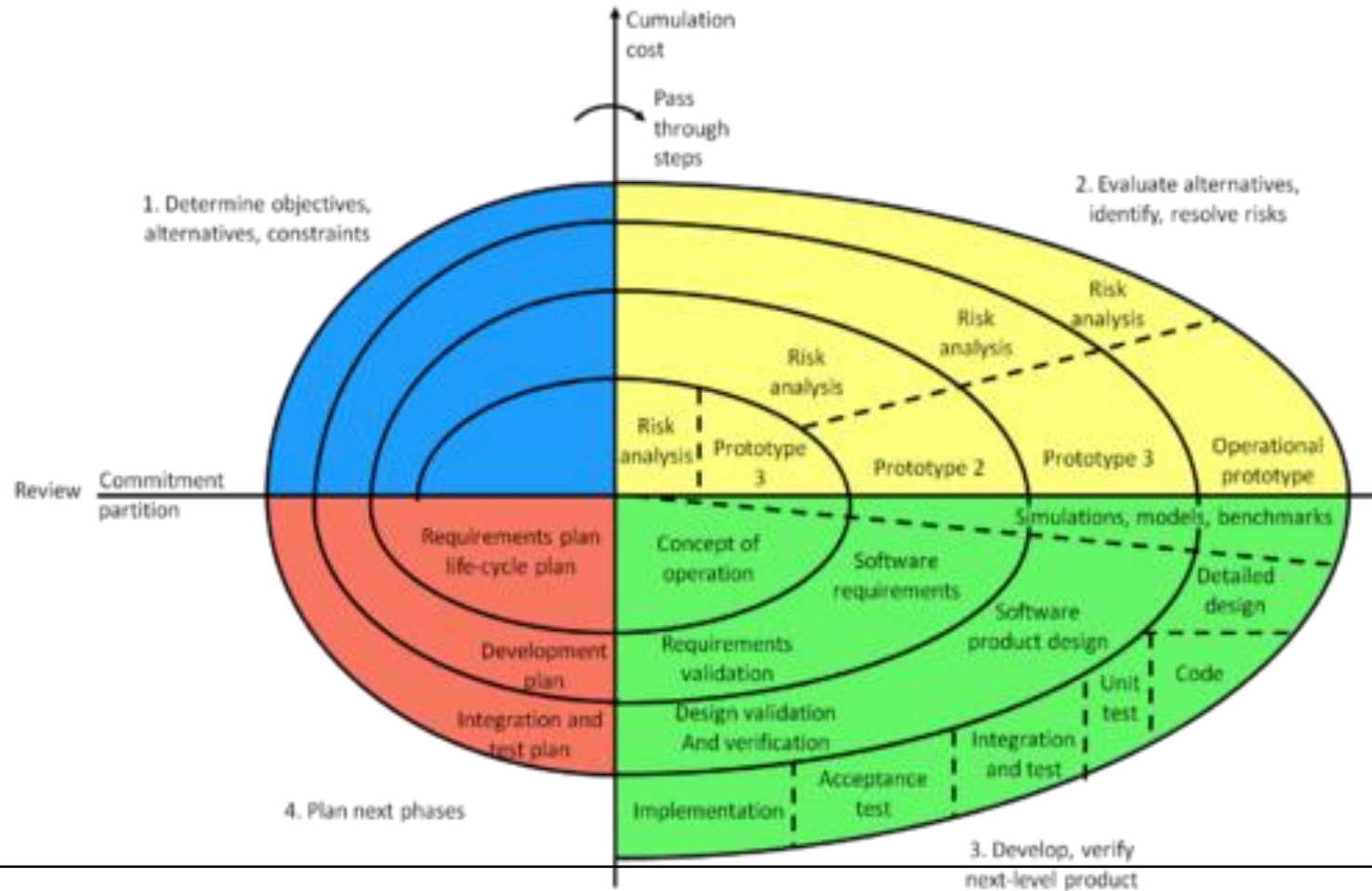
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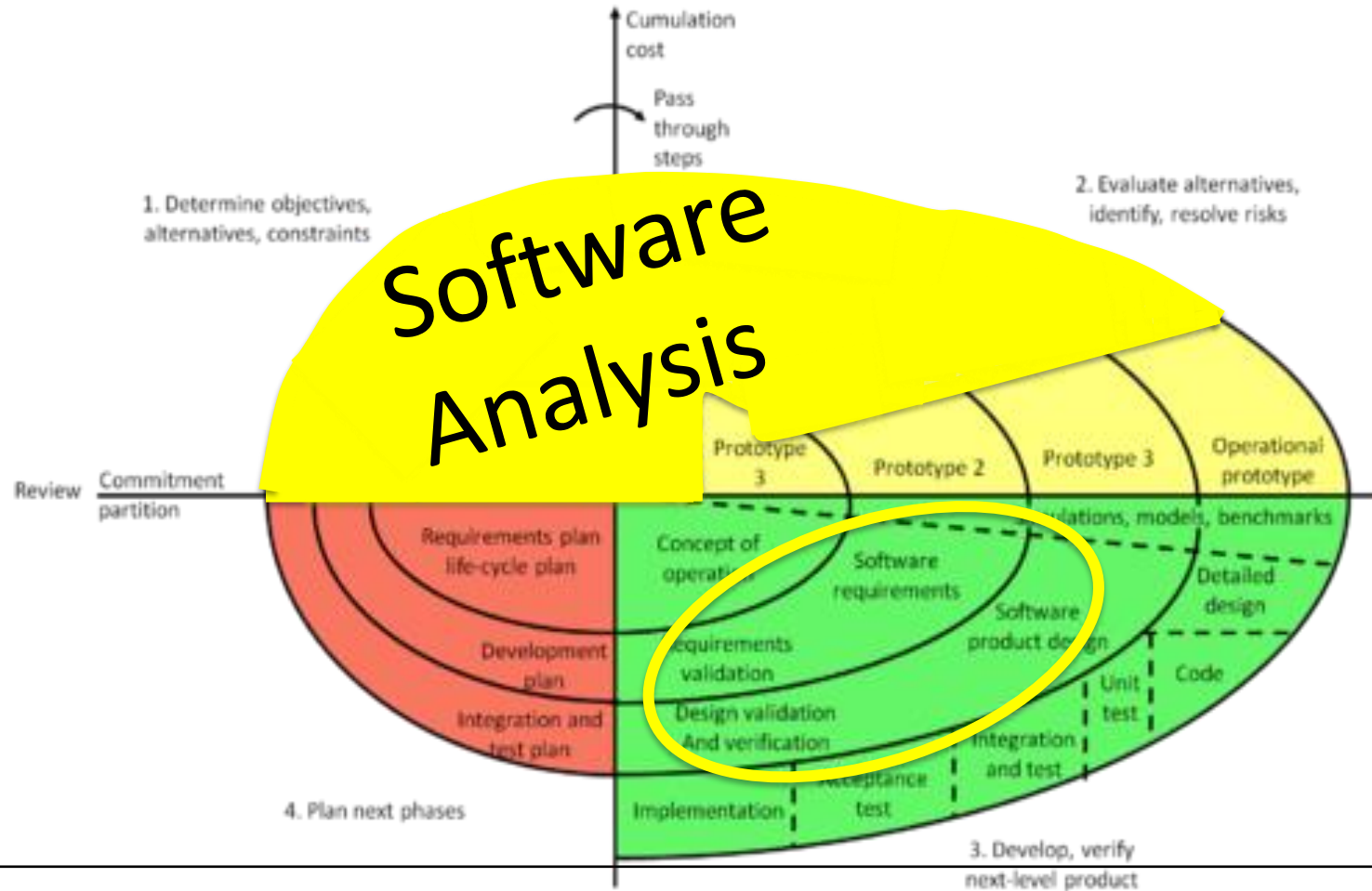
Retrospect of last week ...

- SPIRAL - Where does Software Analysis fit in?



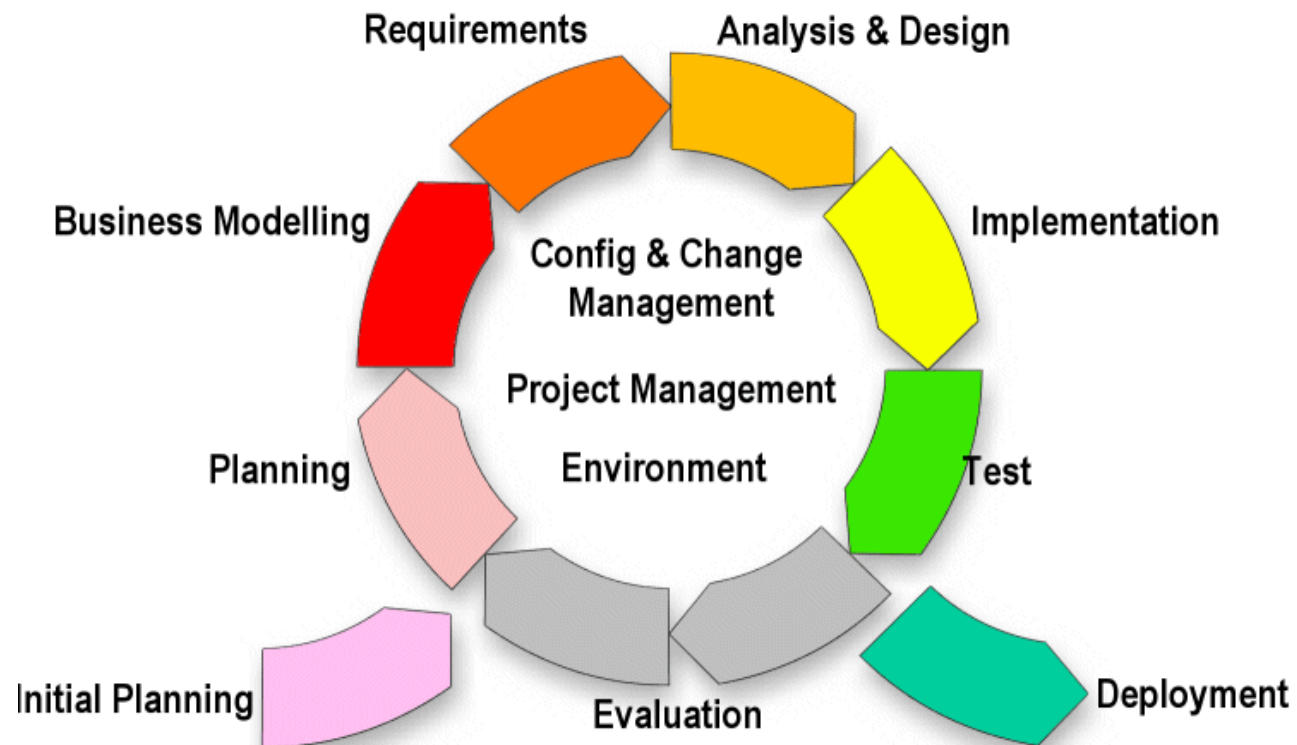
Retrospect of last week ...

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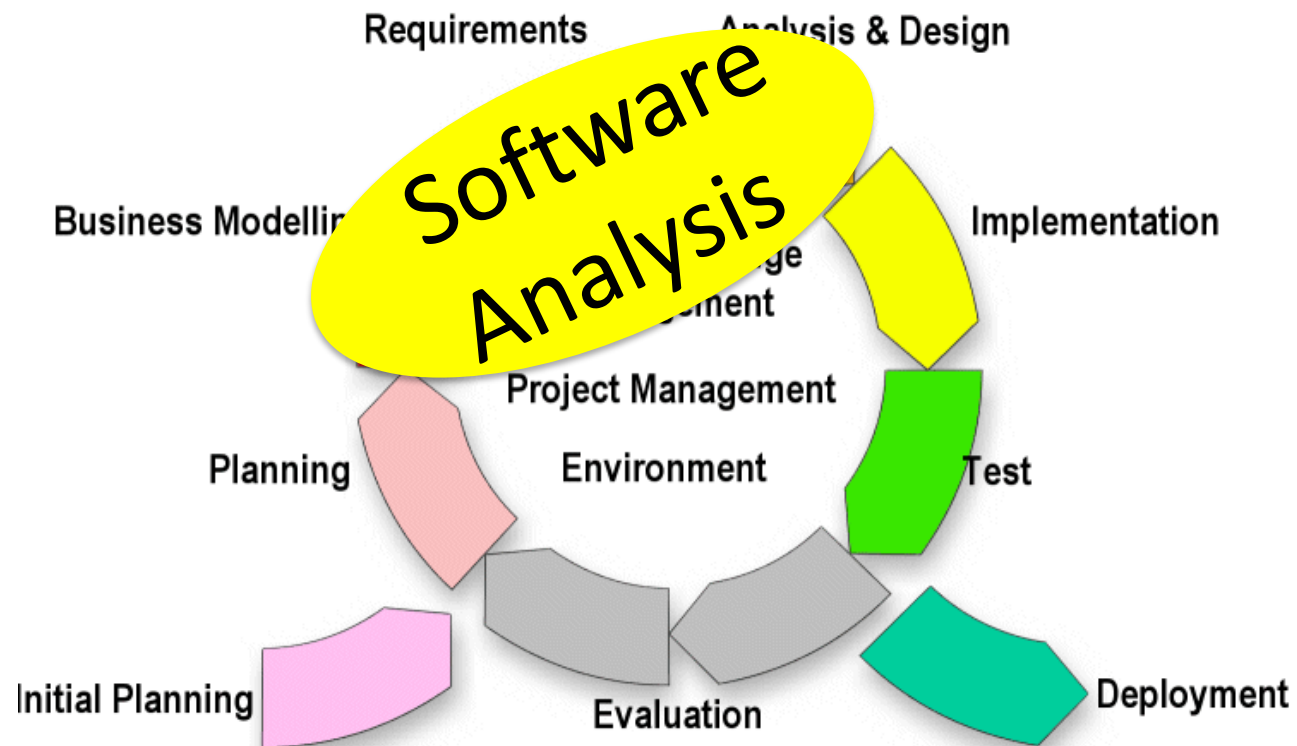
Retrospect of last week ...

- RAD - Where does Software Analysis fit in?



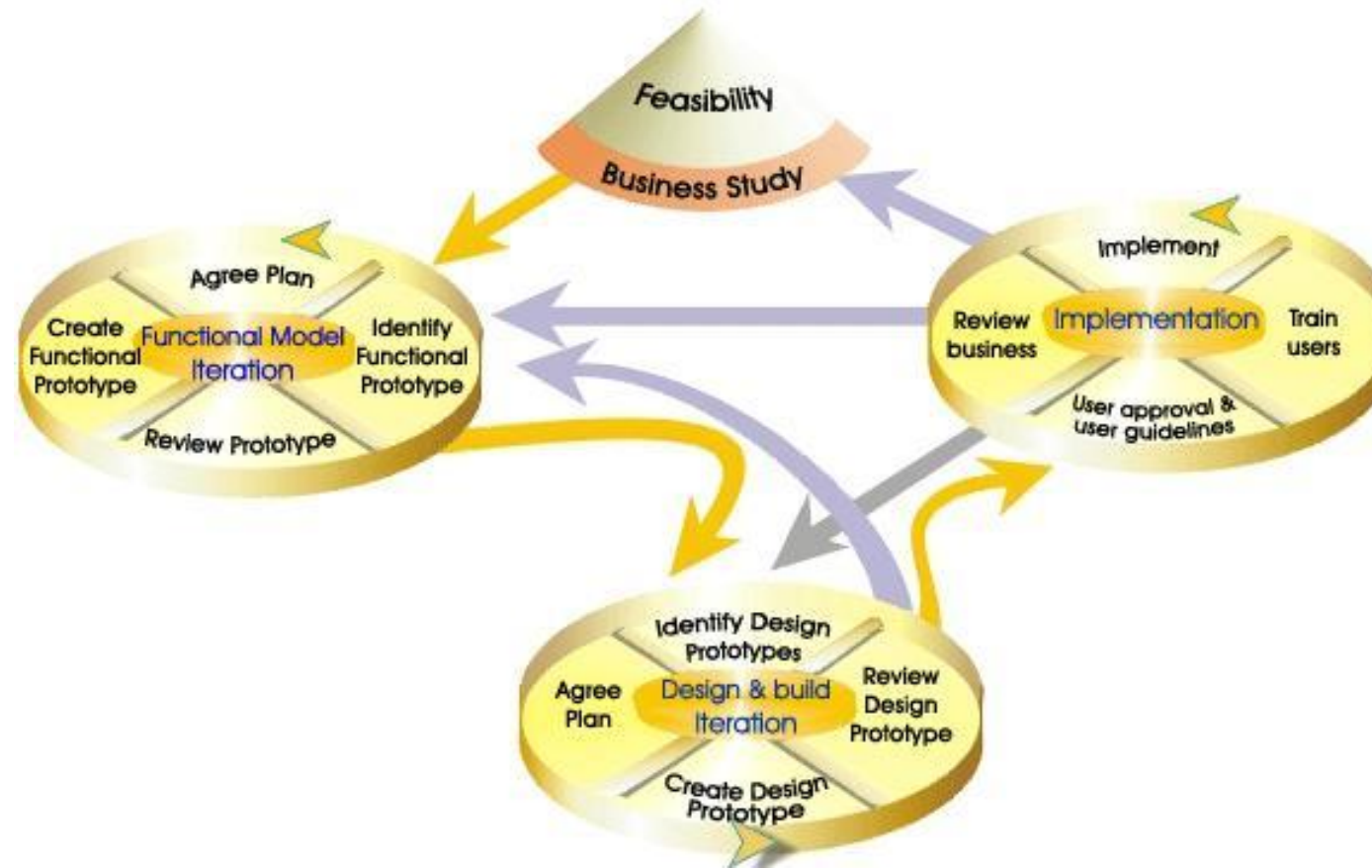
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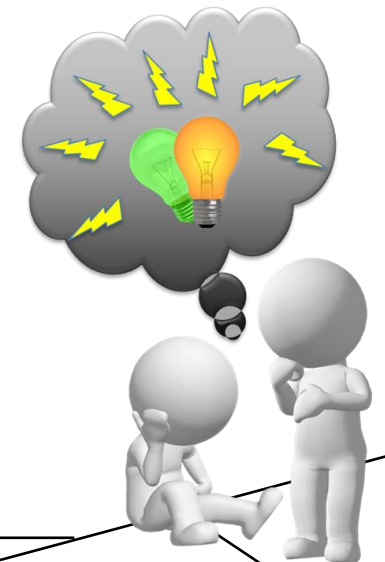
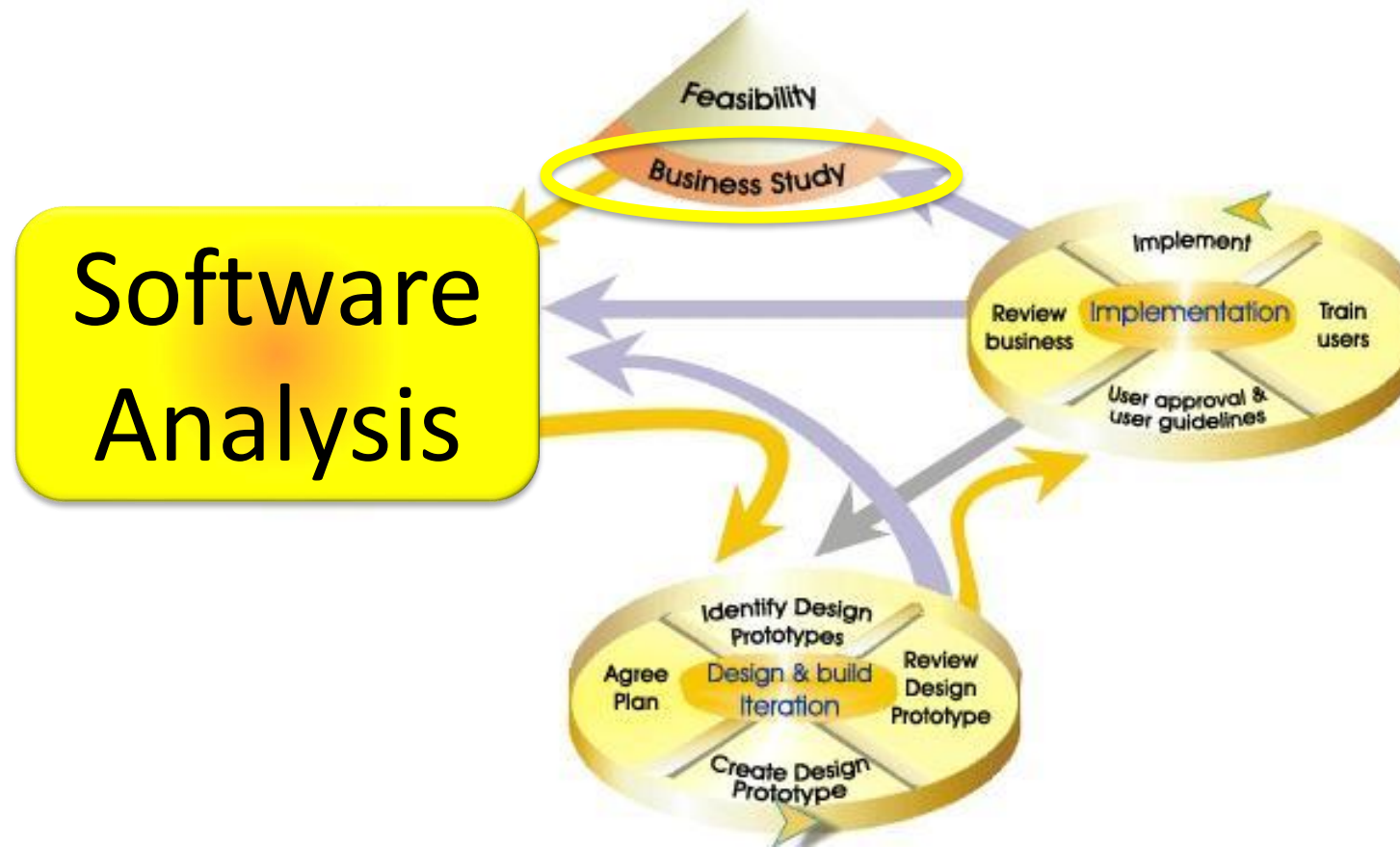
Retrospect of last week ...

- DSDM - Where does Software Analysis fit in?



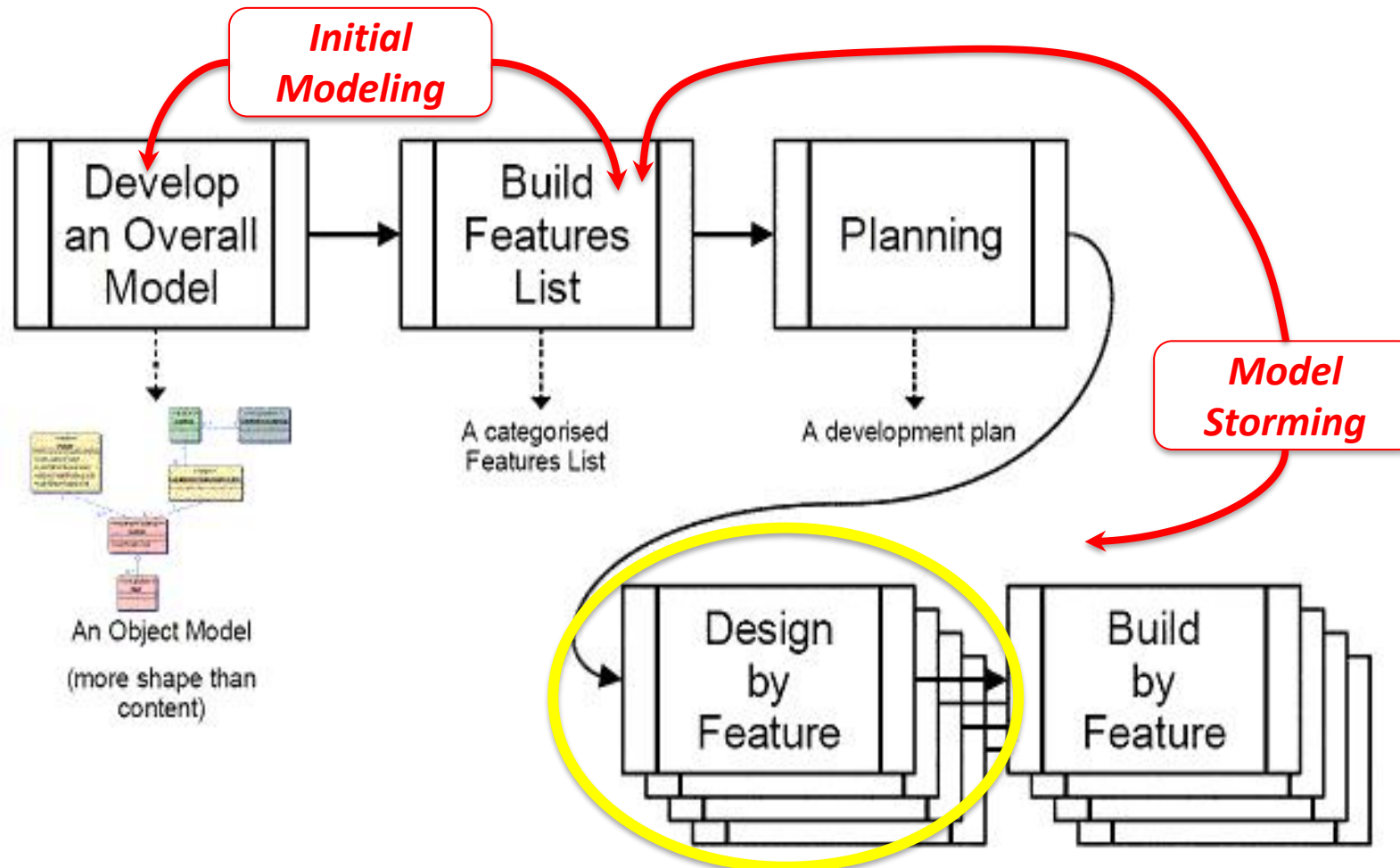
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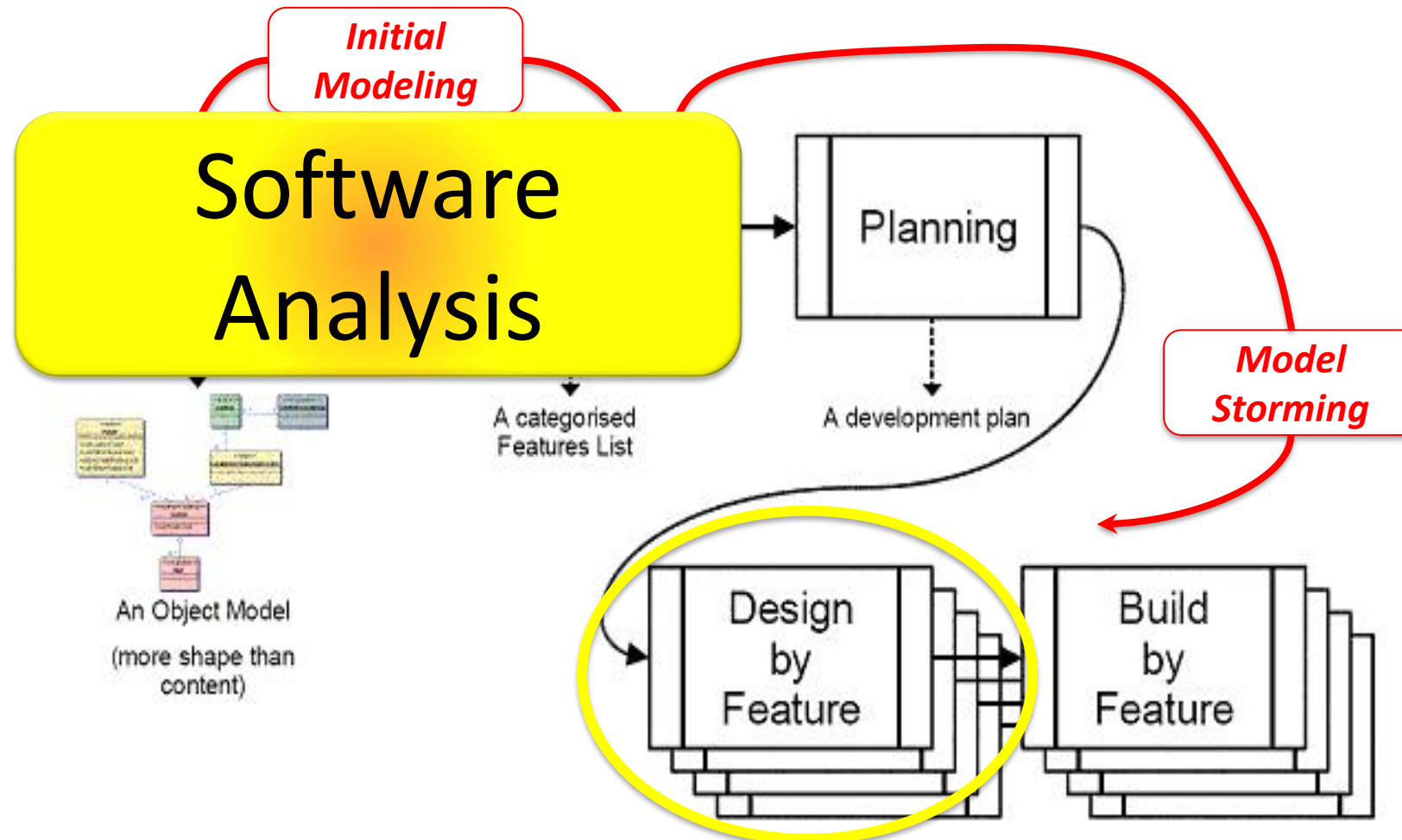
Retrospect of last week ...

- FDD - Where does Software Analysis fit in?



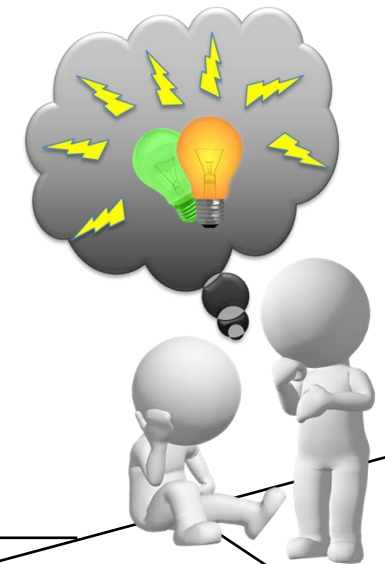
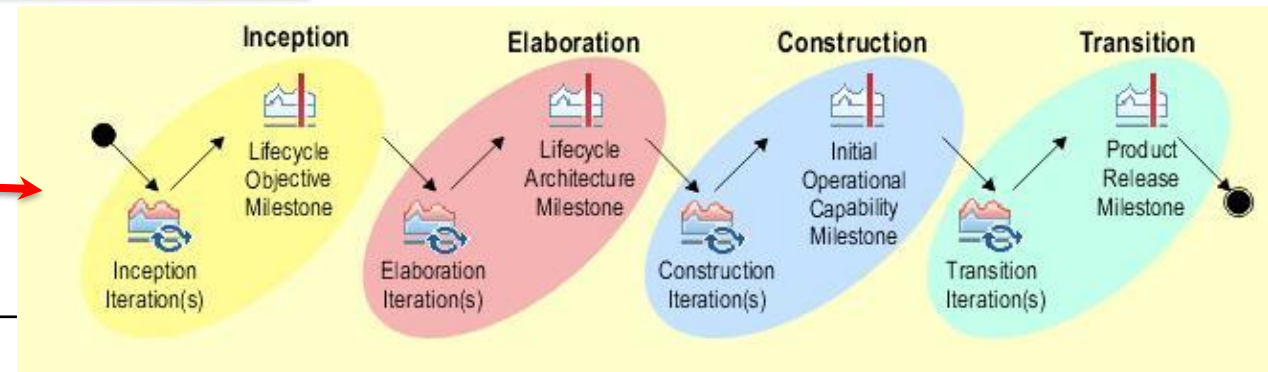
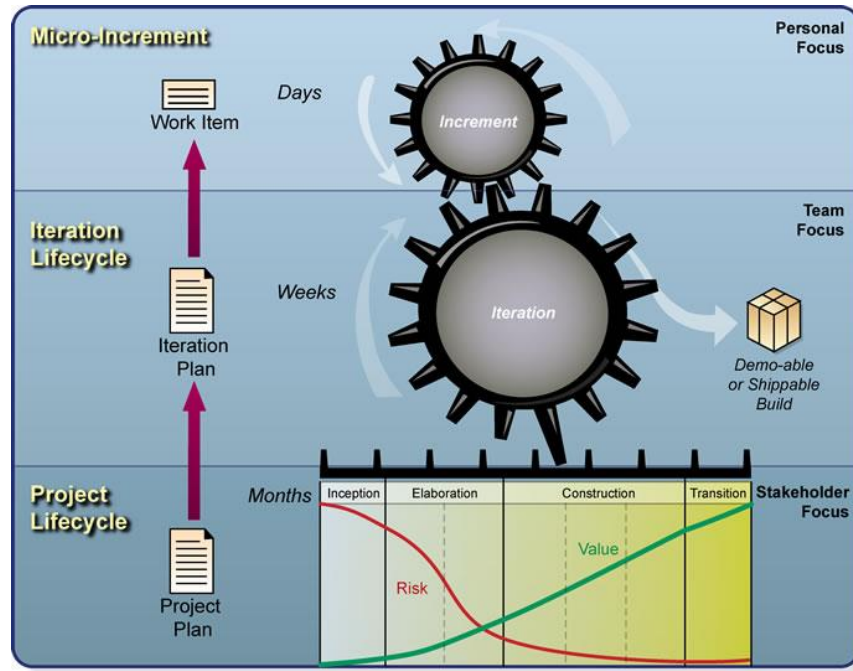
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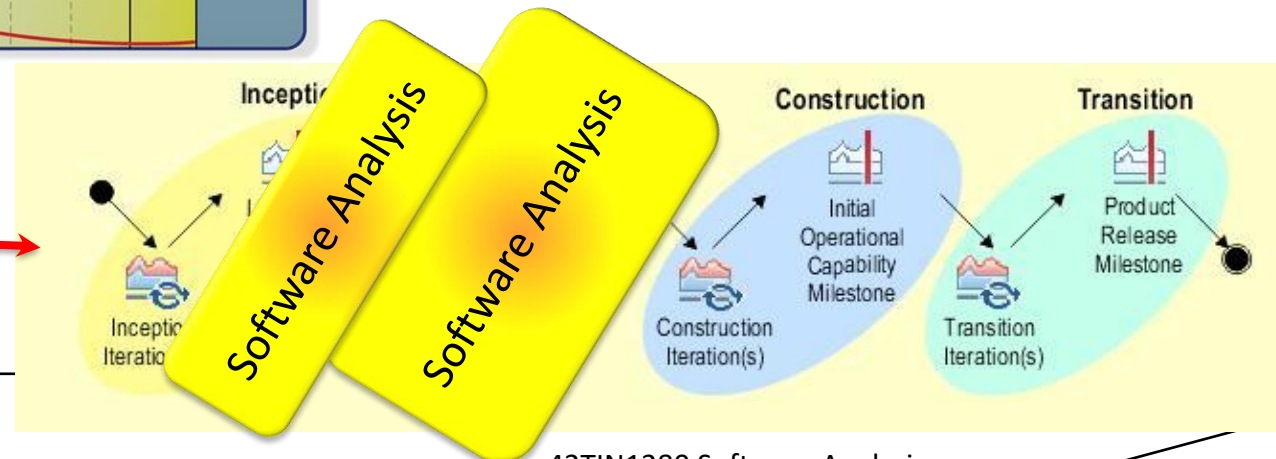
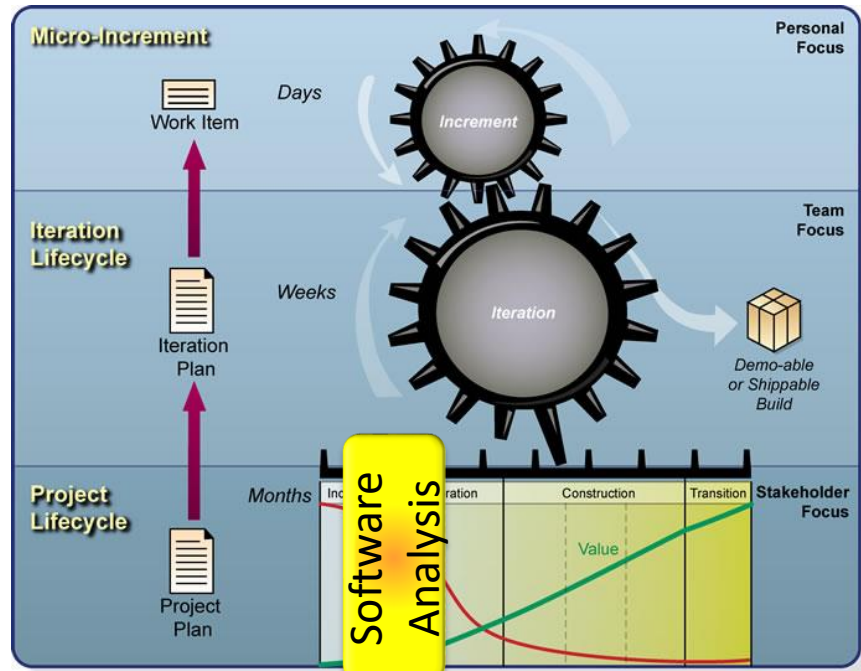
Retrospect of last week ...

- OpenUp - Where does Software Analysis fit in?



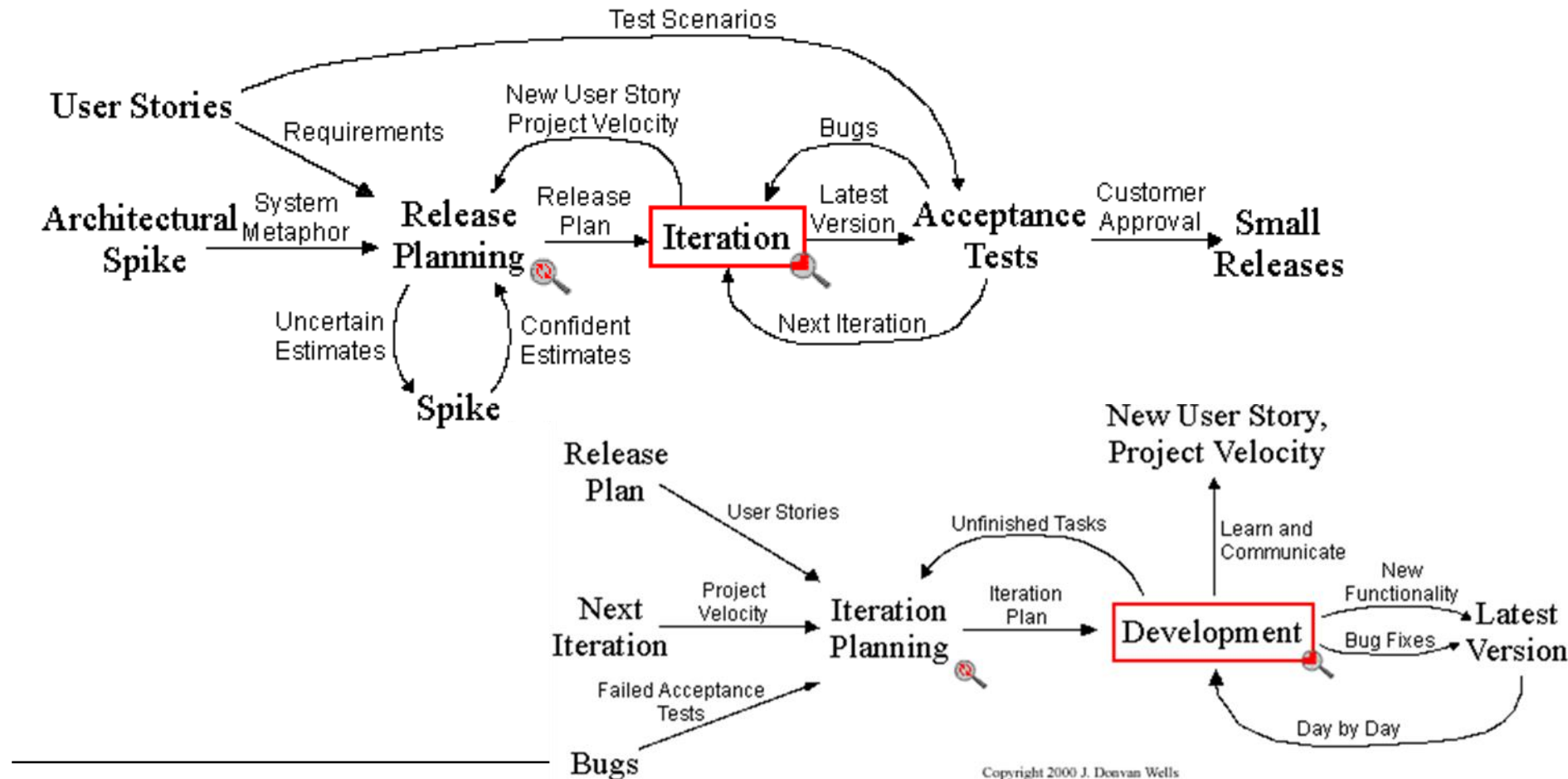
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- OpenUp - Where does Software Analysis fit in?



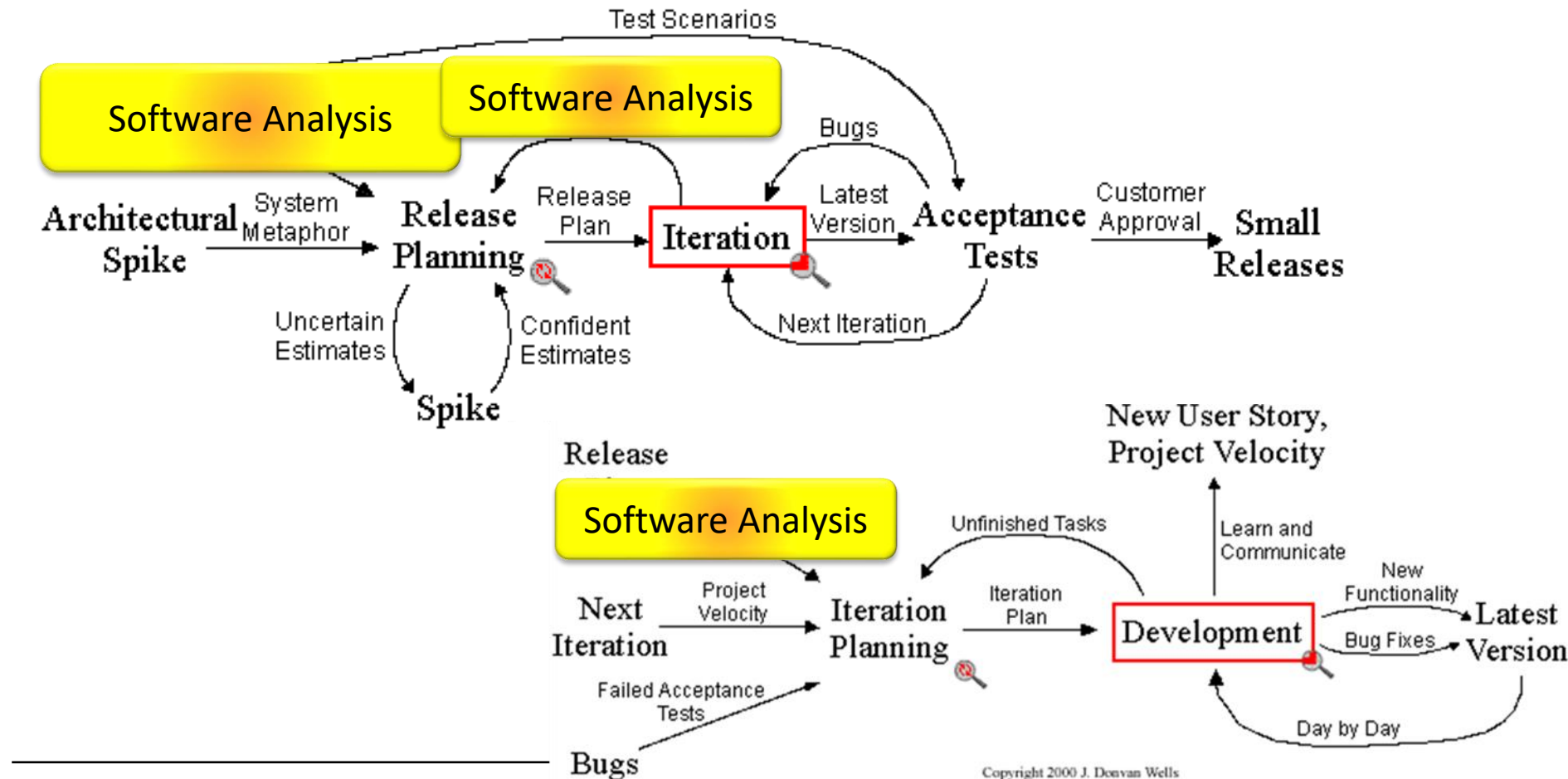
Retrospect of last week ...

- XP - Where does Software Analysis fit in?



Retrospect of last week ...

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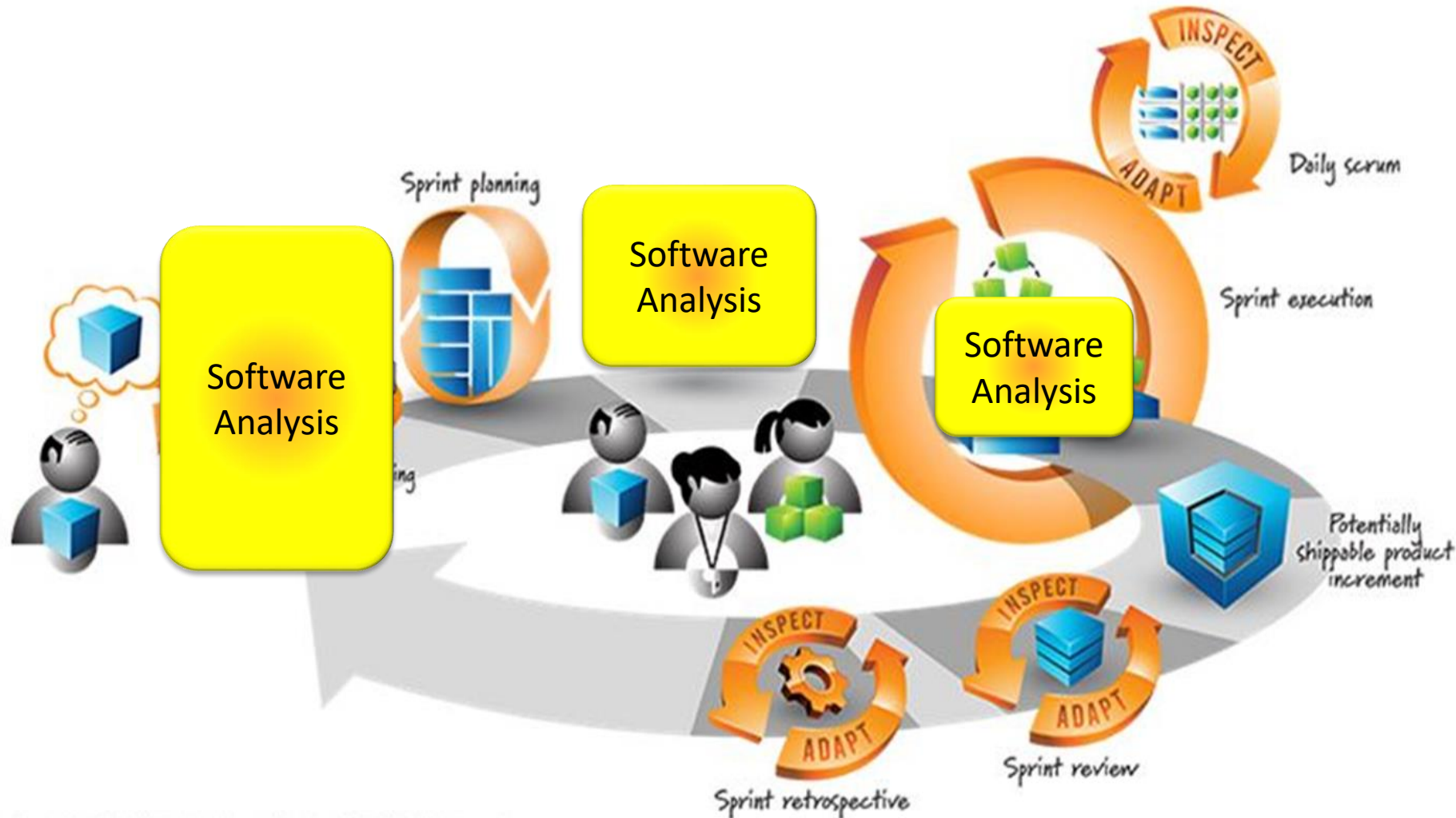
Retrospect of last week ...

- SCRUM - Where does Software Analysis fit in?



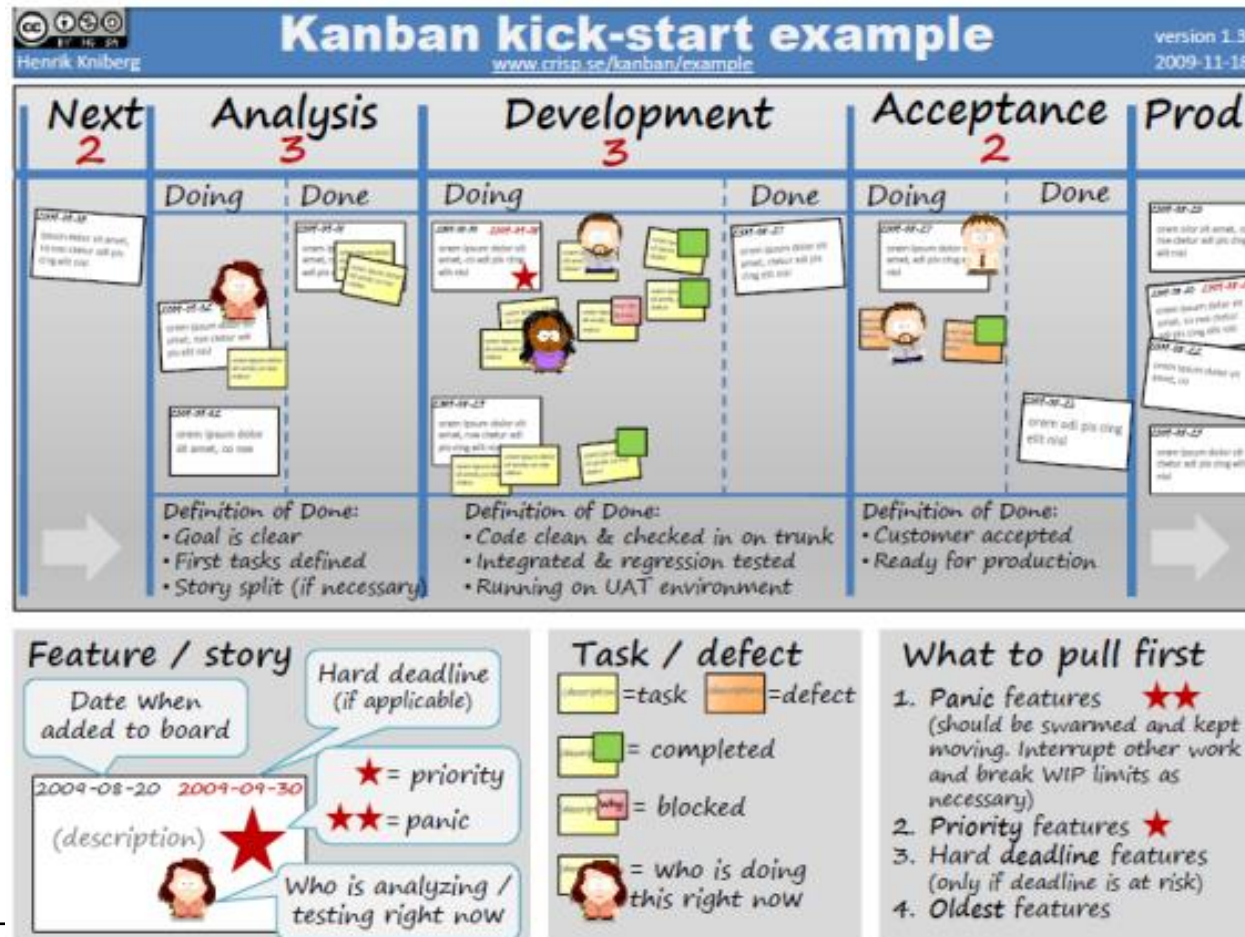
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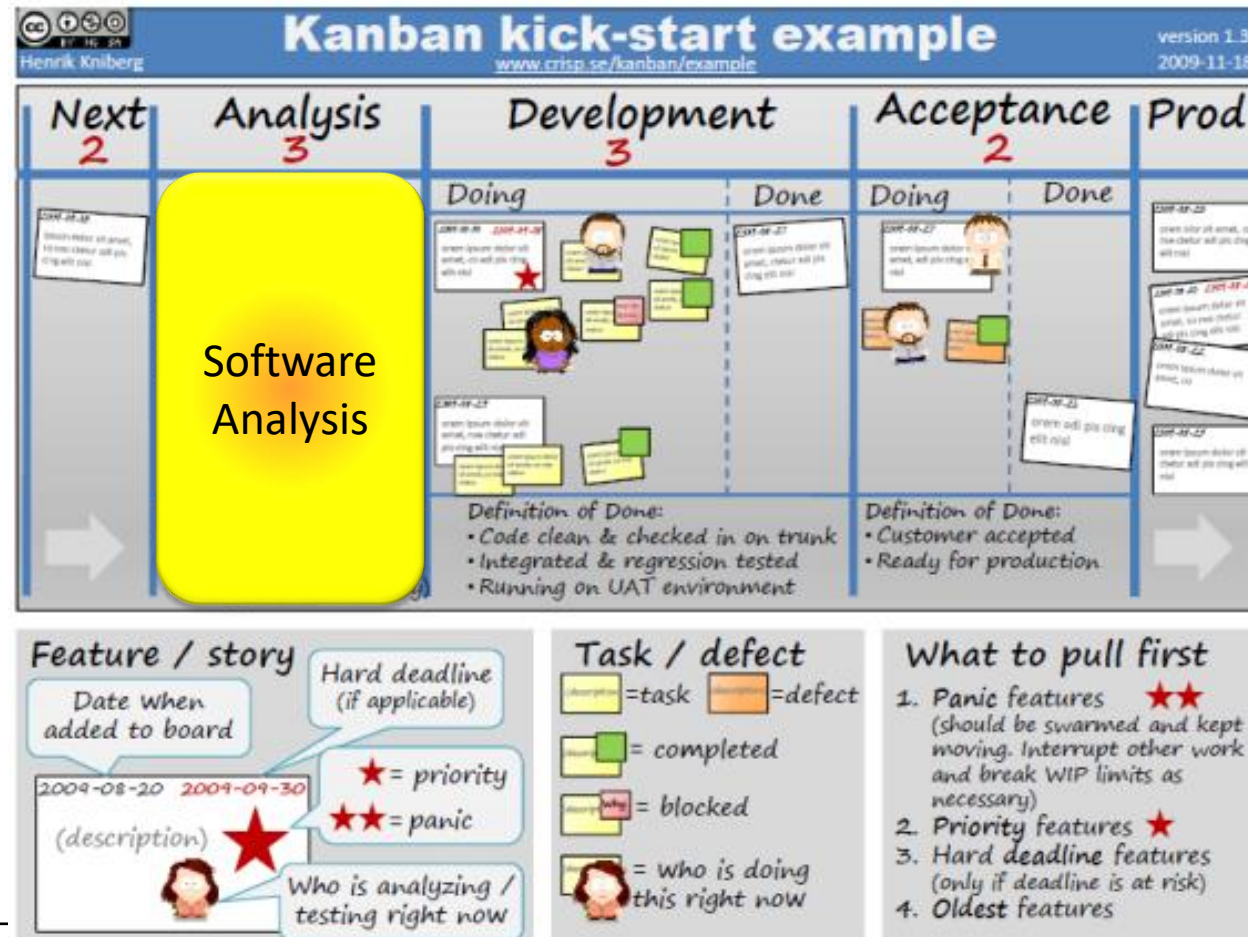
Retrospect of last week ...

- KANBAN - Where does Software Analysis fit in?



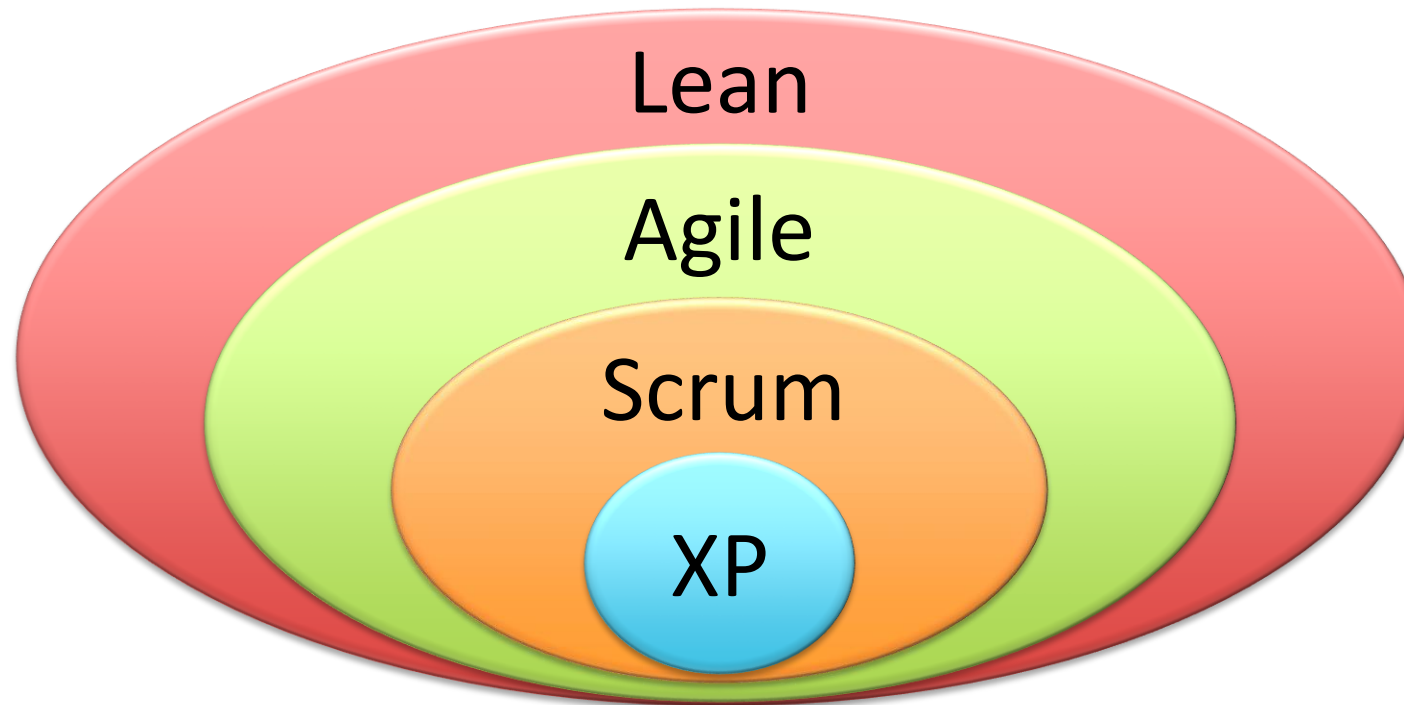
Retrospect of last week ...

- KANBAN - Where does Software Analysis fit in?



Retrospect of last week ...

- Lean - Where does Software Analysis fit in?





Questions & answers

