

MODELING NON-FUNCTIONAL REQUIREMENTS USING SOFT GOALS

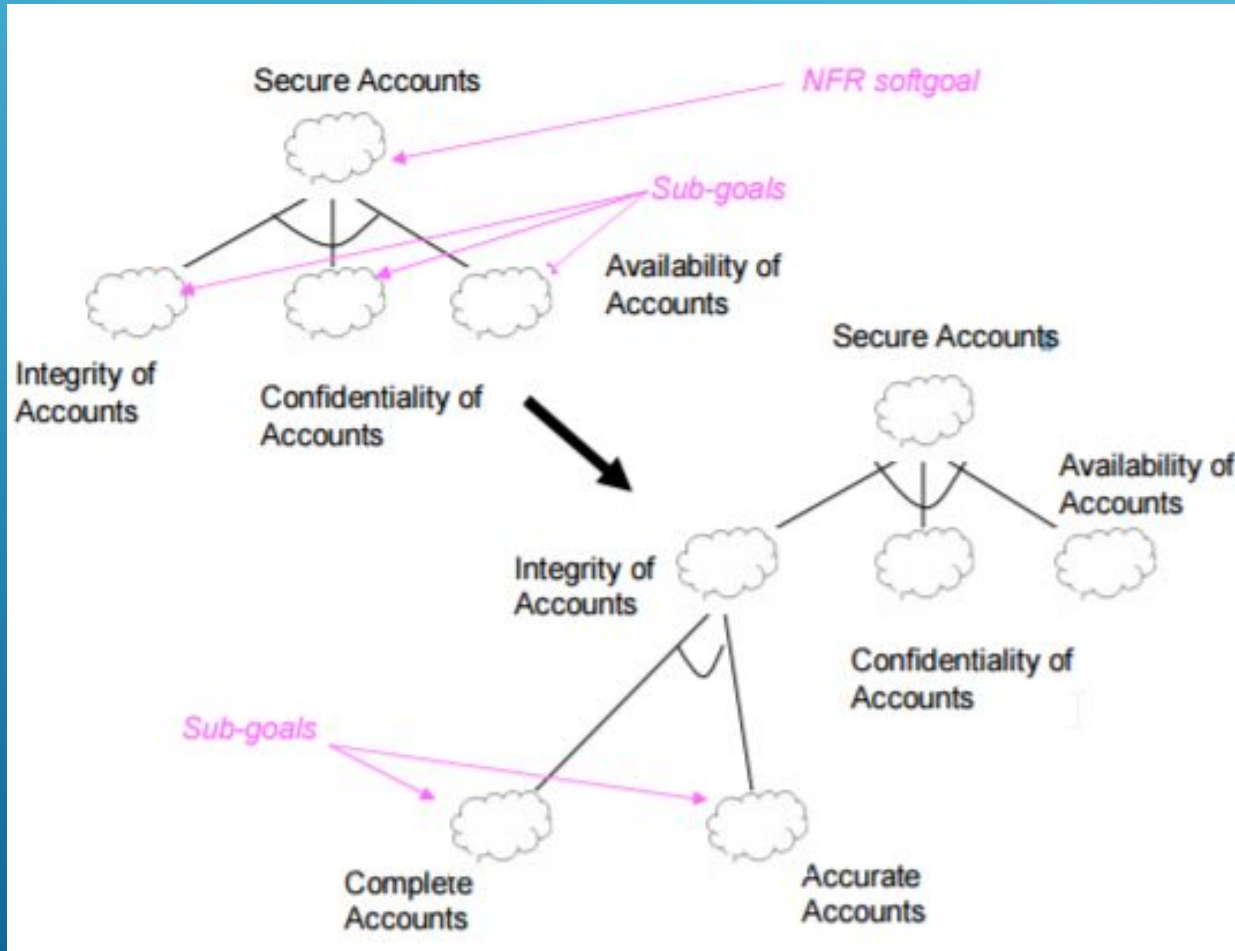
Group 1

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The NFR Framework [Chung]

- A Framework on Goal Modelling (using soft-goals).
- **Soft Goals :**
 - represent NFRs which stakeholders have agreed upon
 - are hard to express precisely and quantify
 - are global qualities of a software system
- NFR Framework is based on Tree-Structured graphs.

Softgoal Interdependency Graphs (SIGs)



Graph Creation:

1. Elicit high-level softgoals (NFRs) from the stakeholders
2. Define sub-goals for each goal until the goal is simple enough and cannot be further decomposed & refined
3. Define Interdependencies

Evaluation (Data Warehousing example)

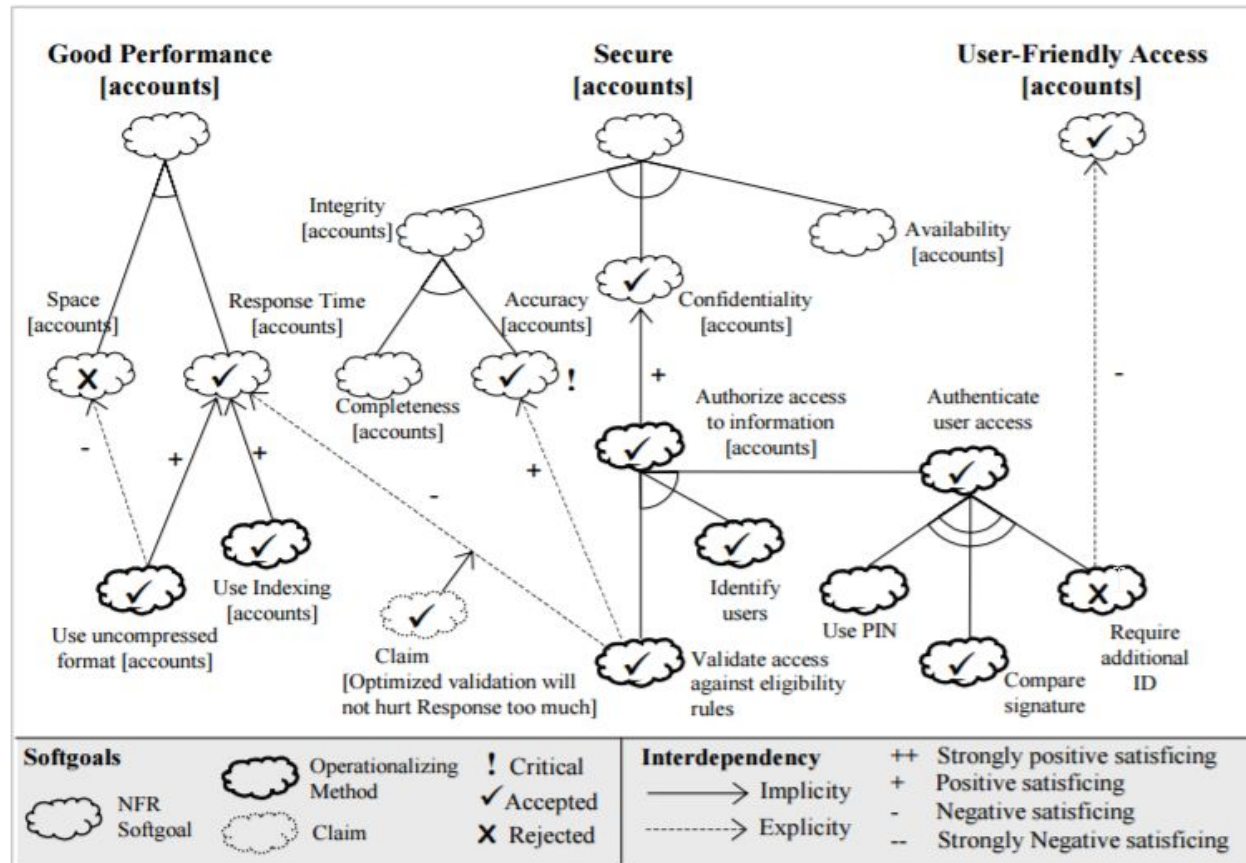


Fig. 2. Softgoal Interdependency Graph (adapted from [3])

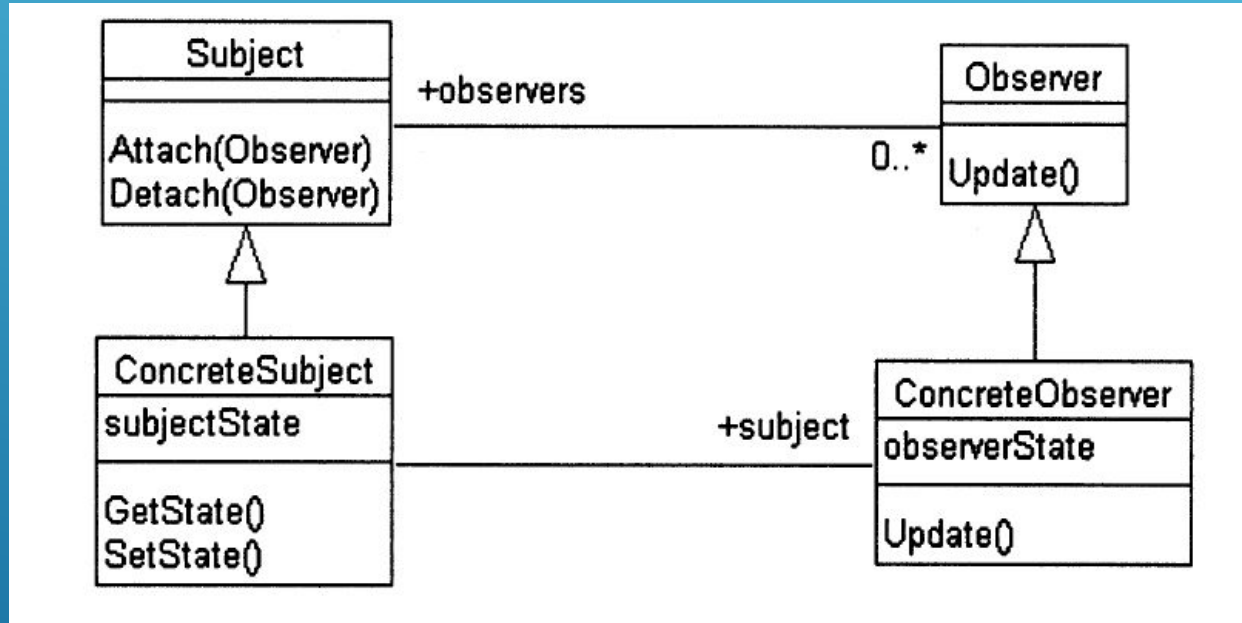
During Analysis Stage:

The proper subgoals should be chosen so the root softgoals (NFR) can be satisfied.

How can the NFR Framework be
used with design patterns?

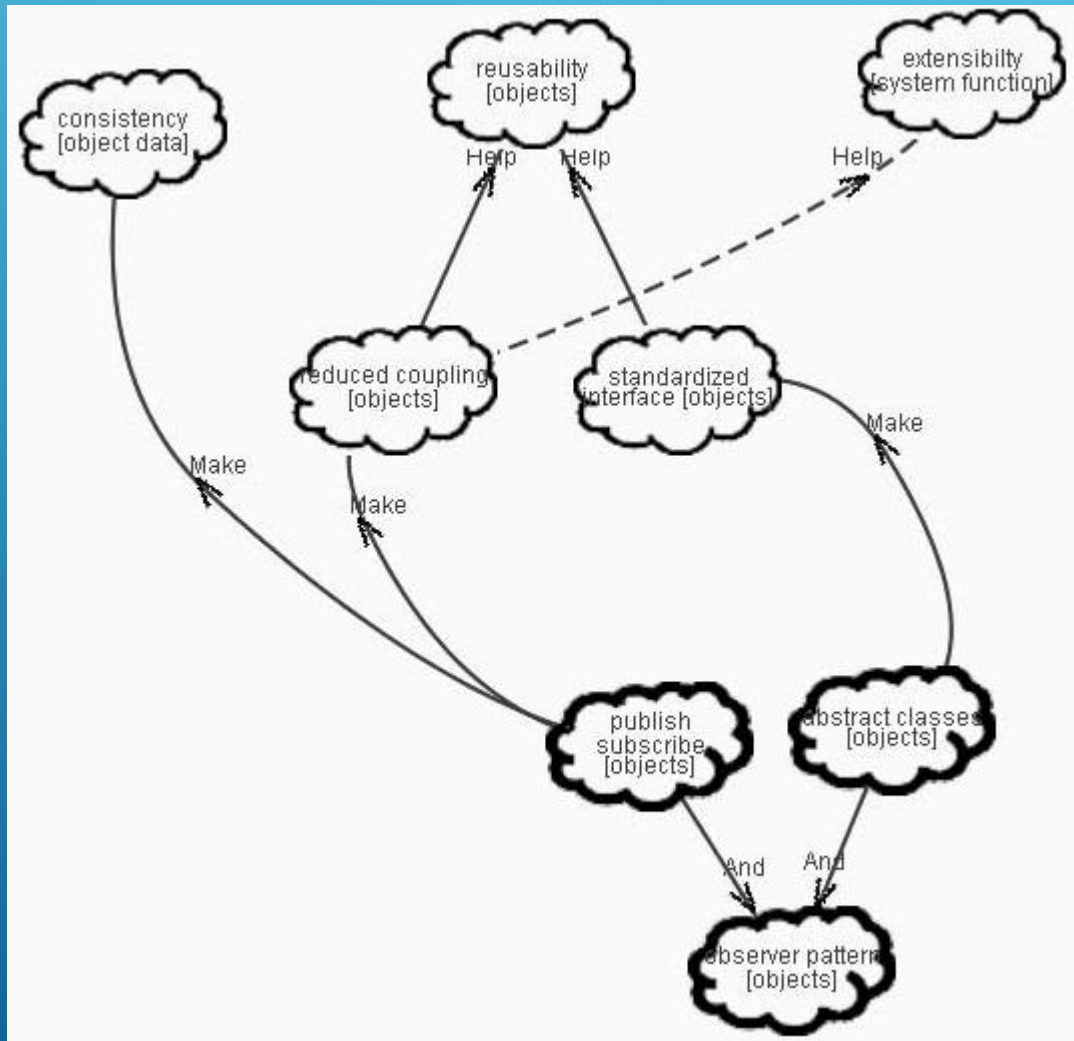


Observer pattern



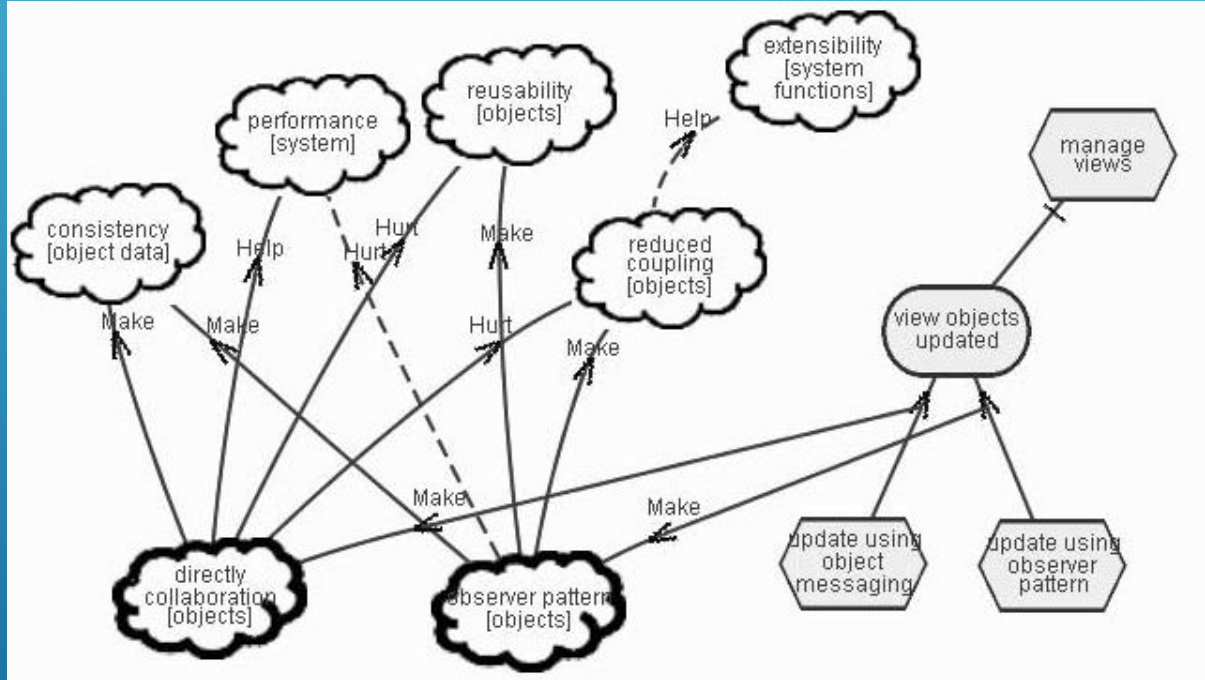
- One subject
- Multiple observers
- Observers register with subject to get notified

Observer pattern as SIG



- Link softgoals to the Desing pattern
- From operationalized softgoals to top level softgoals (NFR)
- Create SIG from scratch or use knowledge catalogs

Link to functional goals



- Compare the pattern with alternatives
- Link the softgoals to the implementation design
- Select the pattern by analyzing the impact of each pattern

DISCUSSION



Questions

- ❖ How can these methods be used in large projects?
 - ❖ What are the recent discoveries in this field?
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- A series of several parallel white lines of varying lengths, slanted diagonally from the bottom right towards the top right, located in the lower right quadrant of the slide.