

The Nature of Requirements

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Early Requirements Modeling (ERM)

Constructs

Goal graphs, where goals taken to represent customer requirements

- ▶ Goal decomposition
- ▶ Hard Goals, soft goals
- ▶ Positive, negative contributions among (soft) goals
 - ▶ Satisficing versus satisfying
- ▶ Techne: Optional and mandatory goals and preferences over goals

Value of ERM

Figuring out the Alternatives

Given some target set of hard and soft goals, a *variant* represents the set of goals that would have to be satisfied or sacrificed for achieving each goal in the target set.

- ▶ Customer and analyst can compare variants
- ▶ And pick one (or more) for further analysis
 - ▶ Example: Optional requirement *humidity control* contributes positively to *high cost*. Do you want it?

ZJ-Requirements Engineering (ZJ)

Done For Each Picked One

K, S \vdash **R**

- ▶ **R**: a picked set of customer requirements
- ▶ **K**: domain (environment) assumptions
- ▶ **S**: a software specification

The requirements problem is to find **K, S** such that **R** is satisfied

- ▶ Human insight-intensive engineering problem

ERM and ZJ

Conclusions

Criterion	ERM	ZJ
Space	Problem	Solution
Role	Elicitation	Engineering
Requirements	Tentative	Prescriptive
Representation	Goal graph	List