

Non-Functional Requirements

- system properties and constraints
- quality
- relate to the system as a whole
- what the system should have/ how system performs a certain function
- add constraints on functional requirements
- difficult to gather

Functional Requirements

- functionalities/services of the system.
- depend on the type of s/w
- capture, roles separately
- what the system should do
- describe system in detail
- easy to gather

REQUIREMENTS

Domain Requirements

- Functional + Non-Functional Problems
 - Understandability
 - Implicitness

User Requirements

- what are the services and constraints
- natural language + diagrams
- readers
 - client managers
 - contractor managers
 - client engineers
 - system end users
 - system architects

System Requirements

- detailed description,
 - functions, services, constraints
- readers of system requirement
 - system end users
 - client engineers
 - system architects
 - software developers

Why difficult?

- stakeholders don't know what exactly need
- express requirements → own language
- different stakeholders → conflict in between requirements
- organizational and political factors
↳ change with the time
- requirements change → analysis process

What?

- The gathering requirements and refining

From whom?

project stakeholders

Interview

- Expensive
- Formal or informal (free style)
- what stakeholders do, how they might interact with the system
- effective interviewer
 - open minded
 - not suitable to ask "tell me what you want"
- disadvantages
 - ↳ not good → domain requ.

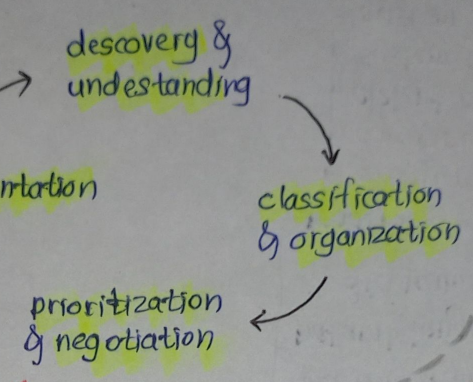
Requirements elicitation and analysis

Requirement Elicitation Techniques

Ethnography or Observation

- Types of interview
- closed
 - ↳ predefined questions
 - open
 - ↳ range of issues

- understand operational process (organizational & social context)
- system prototype
- help understanding existing systems.
- effective to gather requirements, the way in which people actually work, cooperation and awareness of other people's activities



Requirement Specification

REQUIREMENT ENGINEERING PROCESS

Natural Language

- ↳ each sentence → one requirement as a passage

- problems
- lack of clarity (ଅସ୍ପଷ୍ଟତା)
 - meaning may be confusion
 - requirement amalgamation (ମିଶ୍ରଣ)

Requirements Notation Types

structured Natural Language

- ↳ natural language
- ↳ standard form/template

Mathematical Specification

- finite-state machines or sets
- very precise
- hard to deal
- difficult to express
↳ business requirements

Graphical Notation

- graphical models + text
- UML use case and sequence diagrams

SRS

software requirements documentation
when systems are out of

Stories and Scenarios

- real life examples
- easy
- include
 - what the system and user expect
 - normal flow
 - what can go wrong
 - other activities
 - system state at end

- Document analysis
- Questioners
- Site visit
- Viewpoint
- Prototyping

Interview and Ethnography

Requirement Validation

Validation techniques

Requirement review

