4.1 Project 4.1
Modeling non-functional aspects of an information system

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**NFR**
- Accountability
- Reliability
- Adaptability
- Availability
- Security
- Scalability
About the project

The OPM modeling language is rich in notation for modeling the functional aspects of a system but not the non-functional ones.

The goal of our project is to propose a notation for modeling non-functional aspects of a system.
**Key Definitions**

**Non-functional requirements (NFR)** are requirements that impose restrictions on the product being developed (product requirements), on the development process (process requirements), or they specify external constraints that the product/process must meet (external requirements).

**Soft Goal** is a strategic interest of the system having no clear definition or criteria for deciding whether they are satisfied or not.
Every NFR can be represented by a tree diagram, consistent of 5 layers:

The first layer: The root of the tree

The second layer:

a. NFR dimension
b. NFR soft goal

Is not further modeled in our methodology
The Methodology Of Modeling NFR

The third layer: aspects of the NFR dimension

The fourth layer: implementable solution which we call Operationalization
The fifth layer: designated process which implements the Operationalization
The Unfolding of the NFR tree that is generated by running the 5 steps of the general methodology.
Case study: Health and Social Care Information System
The first step of modeling the system is defining the NFR of the system.

Requirement that can be Implemented (Dimension):
• **Security.**

Requirement that can’t be Implemented (soft goals):
• providing appropriate care.
Why security is so important?

Because when patients do not trust the security of the system, they will refuse to provide complete information about their health and social care needs, and this could lead to wrong assessment of needs and inappropriate care plans.
In the second step, we define the aspects of each requirement that can be implemented.

In this case study, it is the Security.

The aspects of that security requirement are:

- Privacy
- Integrity
- Availability
The Soft Goal is represented in the main diagram to make sure that the developer won’t forget it. We need to check whether the goal was fulfilled and by how many percentage.

Security is an attribute of the system and it is one of the dimensions of the NF Requirements.
eSap is a sub system which implements the security requirement.
SD 1.1 Diagram

- Providing Treatment
  - Getting Consent
    - Consent: yes, no
    - Obtaining Personal Information
      - Medical Info
        - Diagnosing the Patient
          - Sick, Healthy
          - Providing Treatment to Patient
        - Diagnose
      - Diagnose
    - eSAP (electronic Single Assessment Process)
      - Firewall
        - <<NFR>> Security
          - Implement
        - <<NFR>> Privacy
          - Share Info only if consent achieved
            - <<NFR. Security Privacy>> Preform Authorisation Check
          - Implement

Professional
Questions