

Requirement Engineering

Types of Requirements

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- The descriptions of what the system should do
- The services that it provides
- The constraints on its operation.

Requirement Engineering (RE)

The process of finding out, analyzing, documenting and checking these services and constraints

- **User requirements**

- The high-level abstract requirements
- Statements, in a natural language plus diagrams, of what services the system is expected to provide to system users
- The constraints under which it must operate

- **System requirements**

- More detailed descriptions of the software system's functions, services, and operational constraints.
- The system requirements document (sometimes called a functional specification) should define exactly what is to be implemented.
- It may be part of the contract between the system buyer and the software developers.

Example: Mental Health Care Patient Management System (MHC-PMS)

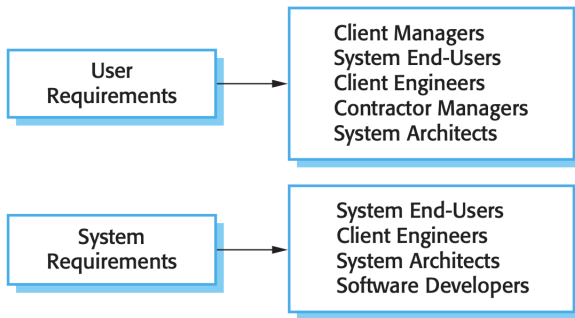
- **User requirements**

- The MHC-PMS shall generate monthly management reports showing the cost of drugs prescribed by each clinic during that month.

- **System requirements**

- On the last working day of each month, a summary of the drugs prescribed, their cost, and the prescribing clinics shall be generated.
- The system shall automatically generate the report for printing after 17.30 on the last working day of the month.
- If drugs are available in different dose units (e.g., 10 mg, 20 mg) separate reports shall be created for each dose unit.
- Access to all cost reports shall be restricted to authorized users listed on a management access control list.

Readers of Different Types of Requirements Specification



Classification of System Requirements

• **Functional**

- Statements of services the system should provide
- How the system should react to particular inputs
- How the system should behave in particular situations.
- In some cases, what the system should not do

• **Non Functional**

- Constraints on the services or functions offered by the system.
- Timing constraints, constraints on the development process, and constraints imposed by standards.
- Often apply to the system as a whole, rather than individual system features or services.

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