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P#1

Q No 1 REQUIREMENT

Requirements are descriptions of the services that a software system must provide and the constraints under which it must operate.

Requirements can range from high-level abstract statements of services or system constraints to detailed mathematical functional specifications.

OR

* May range from

- a high-level abstract statement of a service

or

- a statement of a system constraint to a detailed mathematical functional specification.

· Requirements may be used for

- a bid for a contract
  · must be open to interpretation
- the basis for the contract itself is
  · must be defined in detail

Example;

Banking ATM system

- The example used here is an auto-teller system which provides some automated banking services.

- I use a very simplified system which offers some services to customers of the bank who own the system and a narrower range of services to other customers.

- Services include cash withdrawal, message passing (send a message to request a service), ordering a statement and transferring funds.

CNO2 TYPES OF SOFTWARE REQUIREMENTS.

A software requirements have three types.

Functional Requirements.
Non-functional requirements
Domain requirements.

Functional requirements

These are the requirement that the end user specifically demands as basic facilities that the system should offer. All these functionalities need to be necessarily incorporated into the system as a part of the contract. These are represented or stated in the form of input to be given to the system, the operation performed and the output expected. They are basically the requirements stated by the user which one can see

directly in the final product unlike the non-functional requirements.

For example, in a hospital management system a doctor should be able to retrieve the information of his patients. Each high level functional requirement may involve several interactions or dialogues b/w the system and the outside world.
In order to accurately describe the functional requirements, all scenarios must be enumerated.

Non-functional requirements

These are basically the quality constraints that the system must satisfy according to the project contract.
The priority or extent to which these factors are implemented varies from one project to other. They are

also called non-behavioral requirements. They basically deal with issues like:

- Portability
- Security
- Maintainability
- Reliability
- Scalability
- Performance
- Reusability
- Flexibility

Domain Requirements

Domain requirements are the requirements which are the characteristic of particular category or domain of projects. The basic function that a system of a specific domain must necessarily exhibit come under this category. For instance, in an academic soft software that maintains records of a school or college. The functionality of being able to access the list of faculty and

Q No 3

System Requirement engineering

System requirements are all the requirements at the system level that describe the functions which the system as a whole should fullfill to satisfy the stakeholder needs and requirements, and are expressed in an appropriate combination of textual statements, views and non functional requirements, the latter explain expressing the levels of safety, security, reliability etc. that will be necessary.

System requirements play major rules in system engineering as they

- From the basis of system architecture and design activities.
- From the basis of system integration and verification activities.
- Act as reference for validation and stakeholder acceptance.
- Provide a means of communication between the various technical staff that interact throughout the project.

Software requirements engineering

Software requirements engineering is the process of understanding and defining what services are required and identifying the constraints on these services.

Requirements engineering processess ensures your software will meet the user expectations, and ending up with a high quality software.

Q NO4 Give five reasons why requirements negotiation is needed in software engineering.

Negotiation

is a decision making process
involves interaction and interdependancy
implies two parties with conflicts.

Conflicts are inevitable since stakeholders have mismatching goals.

User: many features, high level of service, early availibility.

Customer: budget/schedule constraints, cost effectiveness, compliance with standards.

Developer: flexible contracts, stable requirements.

The objectives of customers, users or developers have to be reconciled to develop mutually acceptable agreements.
Stakeholders are not forced to agree

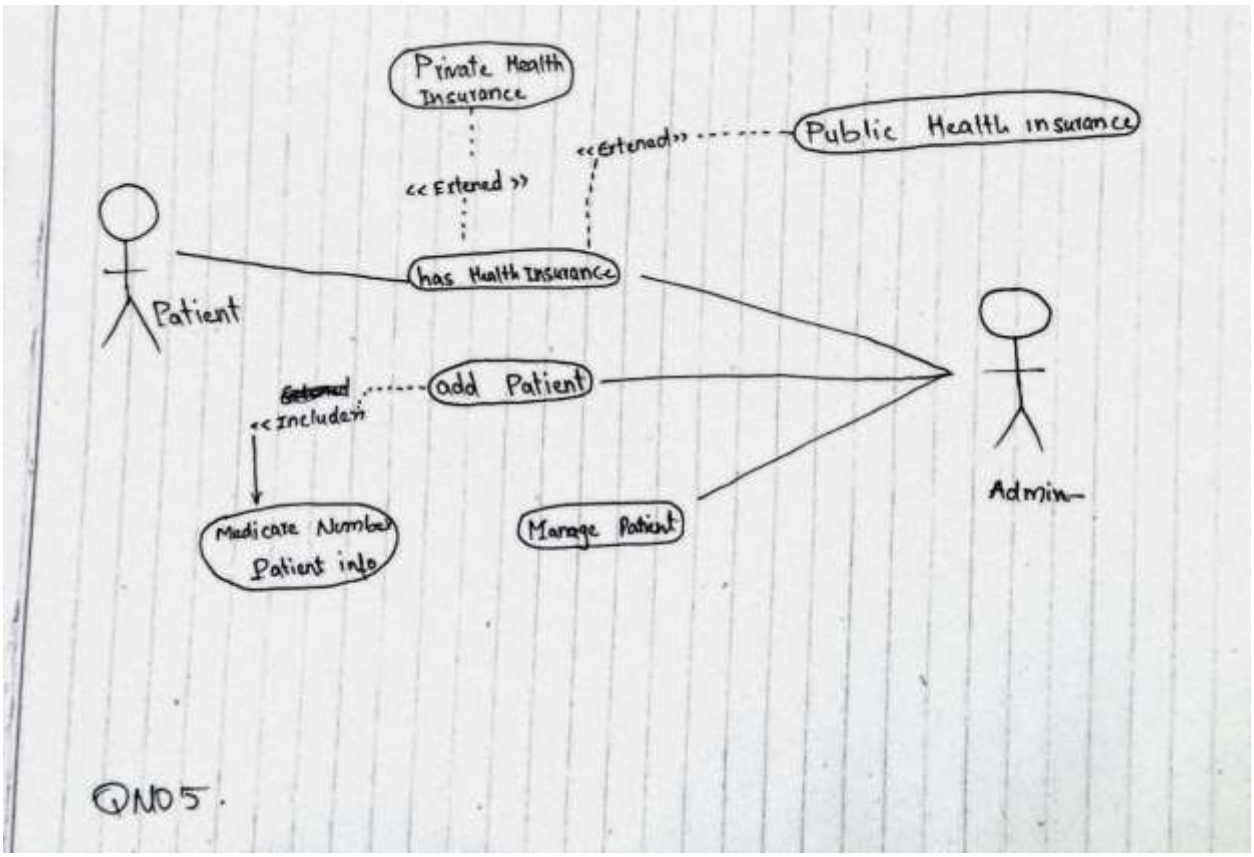
The result of negotiation is also to understand why stakeholders disagree identifying opposed interests is crucial for project success.

Identified disagreements represent risks that need to be addressed by managers introduction Requirements negotiation.

Requirements negotiation should be used early on and repeated in later stages.
Establishing a requirements negotiation should process is not easy.

How can conflicts be identified?
How can the identified conflicts be resolved?
How can feasible alternatives be found?
Who is in charge of the negotiation, the stakeholders themselves or a facilitator?
How can the negotiation be supported with tools or other means?

Requirements negotiation is an iterative process through which stakeholders make tradeoffs between requested system functions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QNO5.