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**SUB: SOFTWARE REQUIREMENT AND SPECIFICATION**

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## **Question No: 01**

Define requirements and define what the system (take example of any system) is required to do and what are the features and constraints under which it operates.

## **ANSWER:**

A **software requirements specification (SRS)** is a **document** that describes what the **software** will do and how it will be expected to perform. It also describes the functionality the product needs to fulfill all stakeholders (business, users) needs. A typical **SRS** include.

- The system shall maintain records of all library materials including books, serials, newspapers and magazines, video and audio tapes, reports, collections of transparencies, computer disks and CD-ROMs.

- The system shall allow users to search for an item by title,  
author, or by ISBN.
- The system's user interface shall be implemented using a World-Wide-Web browser.
- The system shall support at least 20 transactions per second.
- The system facilities which are available to public users shall  
be demonstrable in 10 minutes or less.

## **Question No: 02**

Explain software requirements types.

**ANSWER:**

### **Business requirements:**

These are the high level business goals of the product building organization , or the user who started project.

These are usually provided as a page of high level tablets.

## **Functional Requirements**

Requirements, which are related to functional aspect of software fall into this category.

They define functions and functionality within and from the software system.

Examples -

- Search option given to user to search from various invoices.
- User should be able to mail any report to management.
- Users can be divided into groups and groups can be given separate rights.
- Should comply business rules and administrative functions.
- Software is developed keeping downward compatibility intact.

## **Non-Functional Requirements**

Requirements, which are not related to functional aspect of software, fall into this category. They are implicit or expected characteristics of software, which users make assumption of.

Non-functional requirements include -

- Security
- Logging
- Storage
- Configuration
- Performance
- Cost
- Interoperability
- Flexibility
- Disaster recovery
- Accessibility

## **Domain requirements:**

- Describe system characteristics and features that reflect the domain
- May be new functional requirements, constraints on existing requirements or may define specific computations
- If domain requirements are not satisfied, the system may be unwork.

## **UIR requirements:**

The definition of user interface is not considered as a “requirement” in the traditional needs management theory.

The specification in the UI are in fact requirements and should in fact be considered an integral part of requirements of any software that has UI.

### **Question No: 03**

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State difference between system requirement engineering and software requirement engineering.

## **ANSWER:**

### **System Requirements Engineering:**

The *system* requirements on the other hand are expanded version of the user requirements that are used by software engineers as the starting point for the system design.

They add detail and explain how the user requirements should be provided by the system. They shouldn't be concerned with how the system should be implemented or designed.

The system requirements may also be written in natural language but other ways based on structured forms, or graphical notations are usually used.

# Software Requirements Engineering:

The software requirements document (also called [software requirements specification or SRS](#)) is an official document of what should be implemented. It's also used as a contract between the system buyer and the software developers.

It should include both; user and system requirements. Usually, the user requirements are defined in an introduction to the system requirements.

In other cases, especially if there are large number of requirements, the detailed system requirements may be presented in a separate document.

## Question No 04:

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

### ANSWER:

1. It is difficult for a customer to decided of which of his needs are most important . negotiation helps the consumers to identify the important aspects of the system.
2. Getting the arguments between more then one consumres with devers expectation face even more difficulties ,negotiation helps to solve this problem.

3. Negotiation helps to discuss requirements to avoid conflicts between consumers and developers .
4. Negotiation helps in determining the cost of the software development.
5. Negotiation helps to finalize the overall requirements.

## **Question No 05:**

Identify the **actors** and the **objects** in the following scenario to register a patient in a hospital management system and draw a **use case diagram**:

The administrator enters the patient's name, address, date of birth and emergency contact details into the system. If the patient has only public health insurance, the administrator enters the patient's Medicare number, and the system verifies this with government health database. If the patient also has private health insurance, then the administrator enters also the patient's private health insurance details, and the system verifies these details with the private health insurance system. When these details are verified as correct, the system saves the patient's details and confirms the registration.

**ANSWER:**

**Actor:**

1. Administrator.
2. Government health database.
3. Private health insurance system.

## **Objects :**

1. Patient.
2. Adminstreator.
3. Address .
4. Amergency contact.
5. Private health insurance.
6. Public health insurance.

# USE CASE DIAGRAM

Patient name = P-name

