



# IQRA NATIONAL UNIVERSITY

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**SUBJECT: SOFTWARE REQUIREMENT  
SPECIFICATION**

**DEPT: BS(SE) 5<sup>TH</sup> SEMESTER**

**SUBMITTED TO: MAM AASMA**

**Question No: 01**

**(10)**

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:**

## **REQUIREMENTS:**

The requirements are the description of the system service and constraints are generated during the requirements engineering process.

These are basically description of the service that a software system must provide. T

There are two types of requirements.

- 1) User requirement
- 2) System requirement

**what the system is required to do:**

### **library System:**

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.

- If someone takes the book the data will be stored in the system.
- If requirements are not satisfied then the system may be unworkable.

## Features

- Provide you membership.
- The system shall allow users to search for an item by title, author, or by ISBN
- All the names and verity of books are available.
- It provide knowledge and aware about books.
- Easy to use ,search books.

## Constraints

- Renewal of membership after 6 mounths.
- Limit on assigning book.
- There is limit on the time of assigning a book (1 to 2 mounths)
- If the book is damage or misplaced in this case the librarian is legible to give ticket or he can cancel your membership.
- Silence is the primary key of library rules.

## Question No: 02

(10)

Explain software requirements types.

### **ANSWER:**

**Following are the software requirement types.**

- 1) Business requirements.
- 2) Functional requirements.
- 3) Non-functional requirements.
- 4) UI Requirements (UIR)
- 5) Domain requirements

### **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

#### **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.

#### **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.

**Question No: 03**

(10)

State difference between system requirement engineering and software requirement engineering.

**ANSWER:**

**SYSTEM REQUIREMENTS ENGINEERING:**

System requirements are all of the requirements at the system level that describe the function which system as a whole should fulfil to satisfy the stakeholders needs and requirements and are expressed in an appropriate combination of textual statements, views and non-functional requirements.

The level of safety, security, reliability, etc. form the basis of system architecture and design activities, integration and verification.

**SOFTWARE REQUIREMENTS ENGINEERING:**

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

Requirements engineering process ensures your software will meet the user expectations and end up with a high quality software. Software requirements engineering is specifically applying requirements engineering techniques to software projects.

**Question No 04:**

(10)

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

**ANSWER:**

1. Requirements negotiation is an iterative process through which stakeholders make trade off between.
2. Requested System Function

- The capability of existing or envisioned technology.
  - The delivery schedule
  - The cost
3. Requirement engineering is a fundamental part of the software engineering process, when the stake holders of software project disagree on requirements, requirement negotiation method can be used to reach that agreement , this avoids rework and extra costs.
  4. Due to iteration approach requirements are eliminated combined and/or modified, that each party achieves some measure of satisfaction.
  5. Negotiation helps in determining the cost of the software development.

**Question No 05:**

(10)

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:**

