

**IQRA NATIONAL UNIVERSITY**

**Final-Term Examination Spring 2020**

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SEMESTER:5th

Subject:Software Requirement Specification

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**Q no 1:**

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:**

A software requirements 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 needs.

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 sys-

tem constraints to detailed mathematical functional specifications.

**Types of requirements:**

 **User requirements**:

 Statements in natural language plus diagrams of the services the system provides and its operational constraints. Written for customers.

 **System requirements:**

 A structured document setting out detailed descriptions of the system services. Written as a contract between client and contractor.

 **Software specification:**

 A detailed software description which can serve as a basis for a design or implementation. Written for developers.

Example of system requirement:

**System requirements:**

* A structured document setting out detailed descriptions of the system services. Written as a contract between client and contractor.
* The system needs to be able to spell check documents and provide autocorrect facilities. Their will be support for the following languages, English, French and German will plug in support for other languages.
* The system should be easy to use by experienced controllers and should be organised in such a way that user errors are minimised.

**Features and constraints:**

A requirement needs to meet several criteria to be considered a “good requirement”. Good requirements should have the following characteristics:

* Unambiguous
* Testable (verifiable)
* Clear (concise, terse, simple, precise)
* Correct
* Understandable
* Feasible (realistic, possible)
* Independent
* Atomic
* Necessary
* Implementation-free (abstract)

**Q NO 2:**

Explain software requirements types?

**ANSWER :**

**Functional requirements:**

Describe functionality or system services Depend on the type of software, expected users and the type of system where the software is used Functional user requirements may be high-level statements of what the sys- tem should do; functional system requirements should describe the system services in detail.

**Examples:**

* The user shall be able to search either all of the initial set of databases or select a subset from it.
* The system shall provide appropriate viewers for the user to read documents in the document store

**Non-functional requirements:**

* **Product requirements:**

 Requirements which specify that the delivered product must behave in a particular way, e.g. execution speed, reliability etc.

* **Organisational requirements:**

 Requirements which are a consequence of organisational policies and procedures, e.g. process standards used, implementation requirements etc.

* **External requirements:**

 Requirements which arise from factors which are external to the sys- tem and its development process, e.g. interoperability requirements, legislative requirements etc**.**

**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 unworkble **Example:** Library system

**Q NO 3:**

State difference between system requirement engineering and software requirement engineering?

**SYSTEM REQUIREMENT:**

* 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.
* Requirements analysis and negotiation:

Requirements are identified and conflicts with stakeholders are solved.

* System modeling:

Some engineering fields require the product to be completely designed and modeled before its construction or fabrication starts and, therefore, the design phase must be performed in advance.

* Requirements validation:

Checking that the documented requirements and models are consistent and meet the needs of the stakeholder.

* Requirements management:

Managing all the activities related to the requirements since inception, supervising as the system is developed and, even until after it is put into use.

**SOFTWARE REQUIREMENT:**

Software requirements is a field within software engineering that deals with establishing the needs of stakeholders that are to be solved by software.

* A condition or capability needed by a user to solve a problem or achieve an objective.
* A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or other formally imposed document.
* A documented representation of a condition or capability as in 1 or 2.

**Q NO 4:**

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

**ANSWER:**

* It is difficult for a customer to decled of which of his needs are most important . negotiation helps the consumers to identify the important aspects of the system.
* Getting the arguments between more then one consumres with devers expectation face even more difficulties ,negotiation helps to solve this problem.
* Negotaition helps to discuss requirements to avoid conflicts between consumers and developers.
* Negotaiation helps in determining the cost of the software development.
* Negotiation helps to finaliz the overall requirements.

**Q NO 5:**

**ANSWER:**

**Actors:**

Administrators

Government health database

Private health insurance center

**Objects:**

Patients

Address

Emergency contact

Public health insurance

Private health insurance

Registration

