

NED University of Engineering & Technology**Online Spring Semester Examinations - 2020**

Seat No. SE-18041 **Batch** 2018

Course Title Software Requirement Engineering **Course Code** SE-208

Enroll No. NED/1081/2018 **Date** 24th September, 2020

| Question No. | Award | |
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1. INTRODUCTION

This software specification document (SRS) gathers and characterize significant & important requirements & highlight of "Online Student Registration System" (OSRS). It will be utilized by university management to deal with the colls received at registration time.

1.1 PURPOSE

This document defines & specifies req. of Online Student Registration System. The purpose of this document is to explain functions, constraints of system and designed model of system. The document will provide overall description to designers & developers of OSRS.

1.2 SCOPE

OSRS will help the management to cope up with the increasing load of colls. This system will reduce the load of colls.

The system will include system for organizing colls & answering & scheduling them.

1.3 DEFINITIONS, ACRONYMS, ASSOCIATIONS

| | |
|-----|------------------------------|
| OS | Operating syste |
| SR | Software req. Specifica |
| DB | Data base |
| OSR | Online studal Registr softw. |

1.4 REFERENCES

[1] "IEEE Std 830-1998", IEEE.

1.5 OVERVIEW

This document include 3 sections
section 2 give model perspective
sec 3 give requirements
sec 4 gives diagram

2. OVERALL DESCRIPTION

This section incorporates insights concerning 'what is & what isn't anticipated from OSRS framework notwithstanding which cases are purposefully unsupported & suppositions that will be utilized in the formation of OSRS framework.

2.1 PRODUCT PERSPECTIVE

OSRS is expected to be utilized by university to improve registration problem. The OSRS will provide the interface to main registrations database system through the backend database can & reliably accommodate concurrent transactional demands.

The main registration system is a database system.

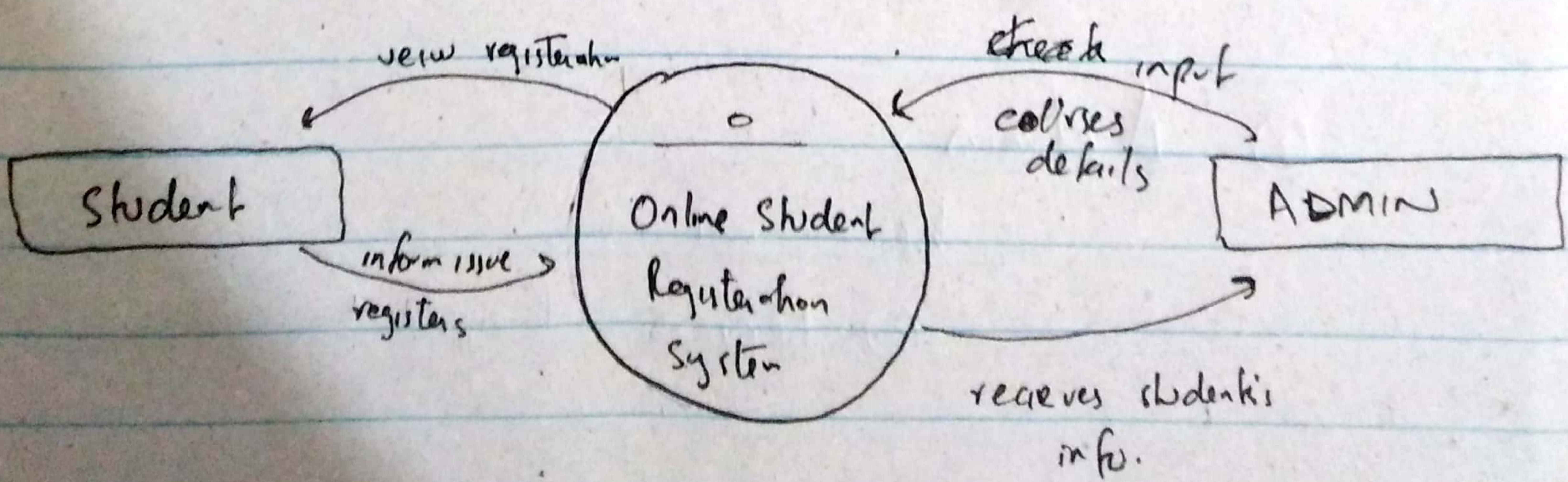


figure 1 . Context model of OSRS

2.1.1 SYSTEM INTERFACE

The main system is maintained based on MySQL version 14.1.

There are other sub interfaces Student grading system, Financial Aid System.

2.1.2 USER INTERFACES

OSRS has 2 clients. both have their own view.

① Student.

he will

① View registration status

② View course status

③ register

④ ...

② Admin.

he will

① Receive Registration Report.

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2.1.3 HARDWARE INTERFACE REQ.

2.1.3.1 NETWORK

University must installed wired & wireless system.

2.1.3.2 CLIENT COMPUTER

Windows, Mac Client computers.

2.1.3.3 PRODUCTION SUPPORT SYSTEMS

Web servers and related hardware support (electric generation, back-up input etc., doors etc.).

2.1.4 SOFTWARE INTERFACE REQ.

2.1.4.1 CLIENT OS

Windows (or other windows)

MAC

2.1.4.2 CLIENT APPLICATION

Toda. & TS compatible system.

Google

Edge

IE.

2.1.4.3 NETWORK SYSTEM

- FTP
- TCP/IP
- HTTP
- HTTPS

2.1.4.4 MAINFRAMES SYSTEM

- MySQL version 7

2.1.4.5 LICENSING

- To use application dev tools.
- Forum webserver , application server in test & dev mode.

2.1.5 COMMUNICATION INTERFACE

There is no communication interface requirement.

2.1.6 MEMORY CONSTRAINTS

- ① Window version 7 above . pentium IV
- ② ~~At least~~ 100 GB . HDD
- ③ 32 GB RAM.

2.1.7 OPERATIONAL REQUIREMENTS

2.1.7.1 HELP DESK SUPPORT

System users have 24/7 access to telephone to connect with bank technical complaints like browser errors, server errors etc.

2.1.7.2 TECHNICAL SUPPORT

System security & access levels are provided in system. There are very Network staff and DB Administrators are available 24x7.

2.1.7.3 ADMINISTRATION FEATURES

Each student can access only his/her records. Admin has access to all records.

2.1.7.4 SYSTEM HANDLING FAIL OVER & BACK UP MEDIA

Operational system will do nightly backup at 3 am daily in tapes drives, cloud & server.

2.1.8 SITE SELECTION REQ.

System has no site specific requirements.

2.4 ~~ER~~ CONSTRAINTS.

2.4.1 SCALABILITY

If does not scale well to increasing system demands.

2.4.2 DATA MAPPING

New function added in db. cannot be readily mapped to existing system.

2.4.3 PROPERTY H/w & S/w

SI requires property hardware & software for coll. center to be operational.

2.4.4 BATCH UPDATES

There is no real time update.
Overnight updates are done.

2.4.5 PROJECT SCHEDULE

The is a 3 month time frame to implement a P system for project commencement Fall 2021 vegetation....

3. SPECIFIC REQUIREMENTS

3.1 FUNCTIONAL REQUIREMENTS

The system is self service.

3.1.1 STUDENT SELF SERVICE

Student can change his/her course & update it.

3.1.1.1 PERSONAL PROFILE

- Student address.
- Student ID Password.
- Email.
-

3.1.1.2 REGISTRATION

- Registration status.
- Course status.
- Student annual schedule.
- Add or drop course.
- Course evaluation grade.
- Registration schedule.

3.1.1.3 GRADES

- View ~~Old~~ GPA
- Print transcript.

3.1.1.4 ASSISTANCE

Cancel registration request.

- course doesn't exist
- requirements are not fulfilled.

3.1 NON FUNCTIONAL REQ.

3.1.1 PERFORMANCE

Must resolve locking issues & handle concurrent usage of the system 24/7.

3.1.2 DATA VALIDATION

Date error & from frontEnd
should be propagated to backend gracefully.

3.1.3 DATA INTEGRITY

DB Commit transactions that are roll back
or unfinished.

3.1.4 AVAILABILITY

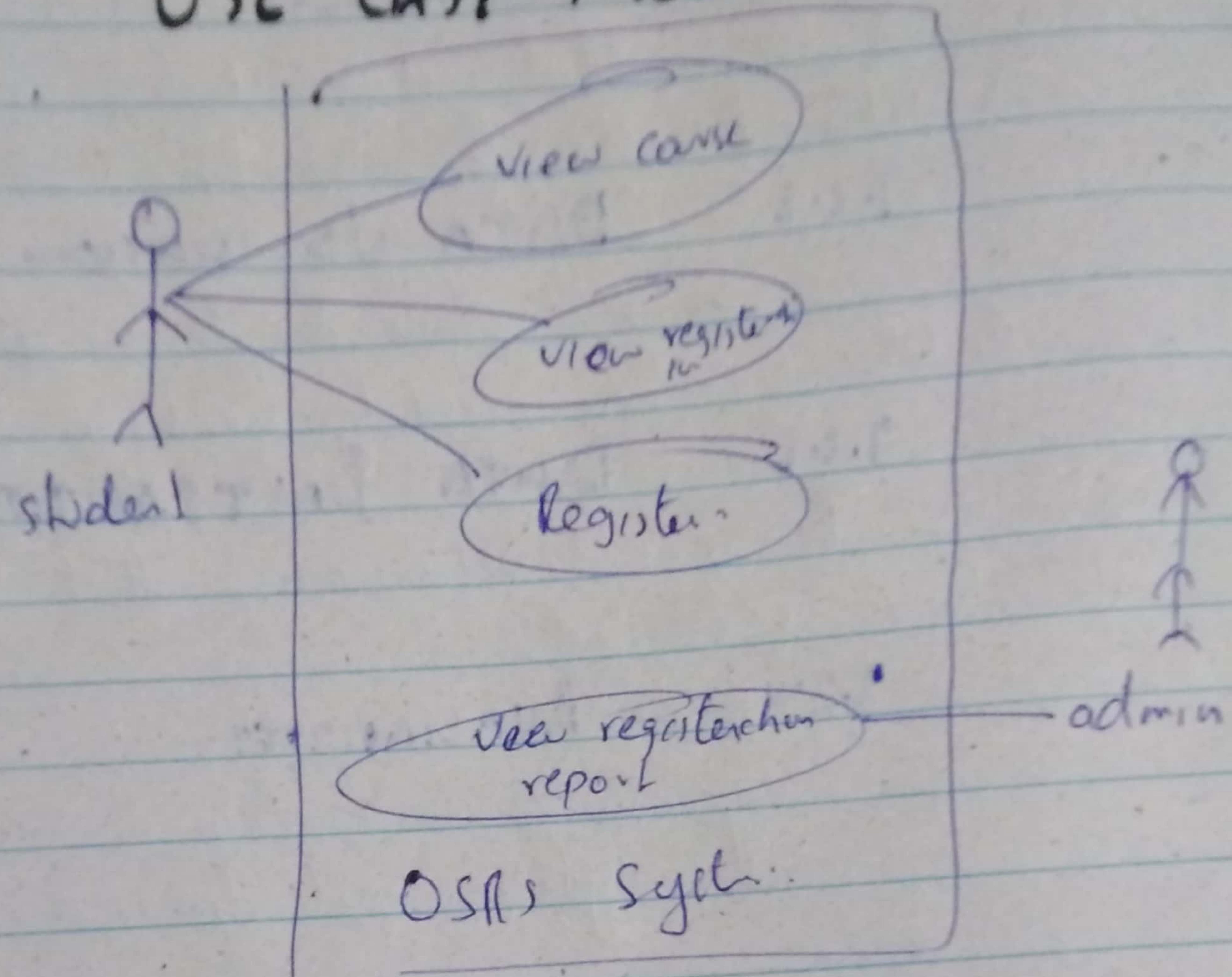
The system will be available 24/7

3.1.5 MAINTAINABILITY

The system will be real time maintainable.
a) availability of staff and back-up 24/7
overnightly.


APPENDIX A

A.1 Use Case Model



A.2

ACTIVITY DIAGRAM



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IMPORTANCE OF PRIORITIZATION.

- ① Core of main req. can be decided by the stakeholder.
- ② for implementing successive releases selection of planned & ordered requirement are made possible.
- ③ Help in conflicting constraints such as schedule, budget, time etc.
- ④ Balances business benefit of each req. against its cost.
- ⑤ Establish relative importance of each requirement to provide greatest value of low cost.
- ⑥ Minimize rework & maintain plan stability.
- ⑦ Get technical advantages & optimize market opportunity.

Conflict Resolution

Req. Prioritization help in conflict resolving

It is very common to have conflict on non functional requirements. So by different aspect of prioritization conflict can be resolved.

For example.

Stakeholder 1 demands ~~use~~^{availability} of sys architected non critical system 24/7 hours.

Stake holder 2 demands that it should not be maintained.

But since its ~~non~~ critical system, Prioritization demands that importance aspect of risk aspect to prioritize req of stakeholder 1.

In this way conflict is resolved. Other aspects mentioned next are utilized too.

A SPECTS OF PRIORITIZATION.

i) COST

The requirements are often prioritized based on cost. It is expressed in terms of staff hours & is estimated by developing organization.

ii) TIME

Time component play important role in prioritization, it is influenced by training needs, complete industry standards etc.

iii) RISK

Risk play a role in prioritization. It is used to cope both internal (technical & market) risks and external (regulations & suppliers).

iv) PENALTY

It is possible to evaluate the penalty. It is introduced if a requirement is not fulfilled. e.g. failing to meet standards.

v) IMPORTANCE

Stakeholders define that req. which are important and less so are prioritized.

vi) VOLATILITY

Volatility is considered a risk factor. and is handled as part of risk aspect sometimes. Sometimes it is handled separately. If volatility is known to be over, cost of project increase & developer need to change architecture design.

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Explain different quality Attributes
of Req. Doc.

QUALITY ATTRIBUTES

i) CORRECTNESS:

SRS should be ~~corr~~ correct meaning each requirement should reflect something to build in real system. No requirement should contradict any where or to each other.

ii) CLEARNESS:

Requirements in SRS should be unambiguous, meaning they should be clear and wouldn't be giving multiple interpretation. If there is any multiple interpretation, it should be explained in glossary.

III) COMPLETENESS:-

The SRS should be complete, meaning the SRS should reflect the system and everything in system must be in SRS.

All definitions must be explained and everything must be referenced and all units of measurement should be part of SRS in respective sections.

All pages must be numbered and thing which aren't finalized must be marked "TBD".

IV) VERIFICATIONS

The SRS should be verifiable, meaning each requirement in the SRS is verifiable by any existing cost effective method which can be cross checked by someone else, meaning the requirements reflect the system.

V) CONSISTENCY:-

SRS should be consistent, which means there should be no conflict or contradiction.

within the SRS. There should be no conflicting terms or behavior or characteristics.

v) UNDERSTANDABILITY OF CUSTOMERS

The SRS should be written in such a way that it can be understood by the customer.

vi) MODIFICATION:

The modification must be the attribute of the SRS as change is key factor of SRS, so SRS should be modifiable for it, a specific style & format should be adopted.

vii) TRACIBILITY:

SRS should be traceable meaning each requirement can be traced back in a referencable manner.

x) DESIGN INDEPENDENCE

SRS should be design independent - meaning it should not reflect any architecture & algorithm specifically.

x) CONSISTENCY

SRS should be concise but covering all characteristics

x) ORGANIZATION.

SRS should be organized, so that each req. can be located easily. for it specific standard or format of SRS should be used.

IMPORTANCE OF ATTRIBUTES.

- ① To reflect the system in best possible way.
- ② To make SRS understandable for all customer, stake holder.
- ③ To achieve the best system representation of to be developed and its understandability.