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**Paper : Introduction to Software Engineering with  
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**Unit II : Introduction to Requirements Analysis and  
specification and UML**

Unit 2 -

# **Software Requirement Specification ( SRS )**

## - Points to be covered in this PPT -

- ❑ **Need of SRS**
- ❑ **Characteristics of SRS**
- ❑ **Components of SRS**
- ❑ **Structure of SRS**

## ❖ Overview

- After gathering requirements we specify them
- While specifying the requirements , it can have some anomalies
- SRS is improved form of specification
- SRS contains all user requirements systematically organized
- Writing SRS is difficult

## ❖ Users of SRS

- 1) User, Customer, Marketing people
- 2) Software developers
- 3) Test Engineers or testers
- 4) User documentation or manual writers
- 5) Project managers
- 6) Maintenance engineer or maintenance team

## ❖ Need of SRS

- 1) Understand user requirements
- 2) Let user understand his own system
- 3) High quality SRS leads to high quality software
- 4) High quality SRS reduces the development cost

# ❖ Characteristics of SRS

- 1) Correctness
- 2) Completeness
- 3) Unambiguous
- 4) Verifiable
- 5) Consistent
- 6) Modifiable
- 7) Traceable

## ❖ Component of SRS / Parts of SRS

- 1) Functionality
- 2) Performance
- 3) Design Constraint
- 4) External interface

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# 1) Functionality

- Related to system functioning
- Set of inputs , their source, unit of measure, range of valid inputs, constraints
- Operations performed by them, and output
- i/p  $\longrightarrow$  process  $\longrightarrow$  output

## 2) Performance Requirements

- 1) Performance constraints are static and dynamic
  - i) Static : ( Physical structure )
    - They don't impose constraint
    - No. of terminals, no. of simultaneous users, no. of files
  - ii) Dynamic : ( Behavior )
    - Constraint on execution behavior
    - Response time on click
    - Throughput time functioning on the basis on time: in 1 min=system can do what...? click

### 3) Design Constraint

- 1) Standard : design, variables, coding, namespace, uniform same, report
- 2) Hardware limitations :
- 3) Reliability and fault tolerance :
- 4) Security :

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## 4) External Interface

- Interaction of s/w with people
- Interaction of s/w with h/w
- Interaction of s/w with other s/w
- User commands, screen formats and explanation , error messages (User manual)

# Example

- Database management system for “Pro cloth shop”
  - Modules: { ok, edit, cancel, exit }
  - Functions : { Save, update, remove, leave }
- 1) Customer - { name : characters, alphabets }
  - 2) Product - { name : number, characters, symbols }
  - 3) Dealer/supplier - : { name : characters, alphabets }
  - 4) Cust\_Billing :-
    - Customer - { name : characters, alphabets }
    - Product - { name : number, characters, symbols }
  - 5) Database : security, location hidden from customer/user
  - 6) Application : visible

# ◆ Structure of SRS / Format of SRS

## I} Introduction

1.1) Purpose ( reason behind developing the system )

1.2) Scope ( the extent or area covered by system )

1.3) Definitions, abbreviations

1.4) References

1.5) Overview

## II} Overall Description (general factors affecting the system)

2.1) Product Perspective (Relationship , dependencies, interface between product and other products)

2.2) Product function (Functions to be performed by the system)

2.3) User Characteristics (characteristics given by end user)

2.4) General Constraint (Restrictions )

2.5) Assumptions and dependencies

## III} Specific Requirements

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### 3.1) External interface requirements

3.1.1. User Interfaces

3.1.2. Hardware interfaces

3.1.3. Software interfaces

3.1.4. Communication



## 3.2) Functional requirements

3.2.1. Mode 1

3.2.2. Mode 2

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3.2.n Mode n

3.3) Performance requirement

3.4) Design constraint

3.5) Attributes

3.6) Other requirements

**THANK YOU**

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