

SOFTWARE REQUIREMENTS ENGINEERING (SE2001)



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What is a requirements engineering process

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- ❖ A requirements engineering process is a structured set of activities which are followed to:
 - *Derive*
 - *Validate*
 - *And maintain*
- ❖ a system requirements document.

What is a requirements engineering process

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❖ **Process activities** include:

- ❖ *Requirements elicitation*
- ❖ *Requirements analysis and negotiation,*
- ❖ *and Requirements Validation.*

What is a requirements engineering process

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- ❖ A **complete process** description should include:
 - ❖ *What activities are carried out.*
 - ❖ *The structuring or schedule of these activities.*
 - ❖ *Who is responsible for each activity.*
 - ❖ *The inputs and outputs to/from the activity.*
 - ❖ *And the tools used to support requirements engineering.*

Is there an ideal requirements engineering process?

There is no single process which is right for all organization

Is there an ideal requirements engineering process?

Each organization must develop its own process which is:

- ❖ Appropriate for the type of system it is developing
 - ❖ Its organizational culture
- ❖ Level of experience and ability of the people involved in requirements engineering

What is a requirement Document?

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- ❖ The requirements document is an official statement of the system requirements for customers, end-users, and software developers.
- ❖ Depending on the organization, the requirements document have different names, such as:
 - ***Functional Specification***
 - ***The Requirements Definition***
 - ***The Software Requirements Specification (SRS)***

What are the stakeholders

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- ❖ Stakeholders are people or organizations who will be affected by the system and who have a direct or indirect influence on the system.
- ❖ Stakeholders for an automated railway signaling system:
 - *Train company operators responsible for running the signaling system*
 - *Train Crew*
 - *Railway Managers*
 - *Passengers*
 - *Equipment installation and maintenance engineers*

What is requirements management?

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- ❖ Requirements management is the process of managing changes to the requirements.
- ❖ Requirements for a system always changes to reflect:
 - *The changing needs of the stakeholders.*
 - *Changes in the business.*
 - *Changes in laws and regulations.*

These changes have to be managed to ensure that they make economic sense and contribute to the business needs of the organization.

What is requirements management?

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❖ Requirements management activities:

- ☐ *Change Control.*
- ☐ *Change impact assessment*

Change control is concerned with ***collecting, verifying and assigning the change.***

Change impact assessment is concerned with ***assessing how proposed changes affect the system as a whole.***

Examples of Requirements - 1

- ❖ The system shall maintain records of all payments made to employees on accounts of salaries, bonuses, travel/daily allowances, medical allowances, etc.

Examples of Requirements - 2

- ❖ The system shall interface with the central computer to send daily sales and inventory data from every retail store.

Examples of Requirements - 3

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

Examples of Requirements - 3

- ❖ The system shall allow users to search for an item by title, author, or by International Standard Book Number.
- ❖ The system's user interface shall be implemented using a web browser



THANK YOU

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