

Classifications of Requirements Traceability

- Backward-from traceability
- Forward-from traceability
- Backward-to traceability
- Forward-to traceability

Backward-from Traceability

- Links requirements to their sources in other documents or people

Forward-from Traceability

- Links requirements to design and implementation components

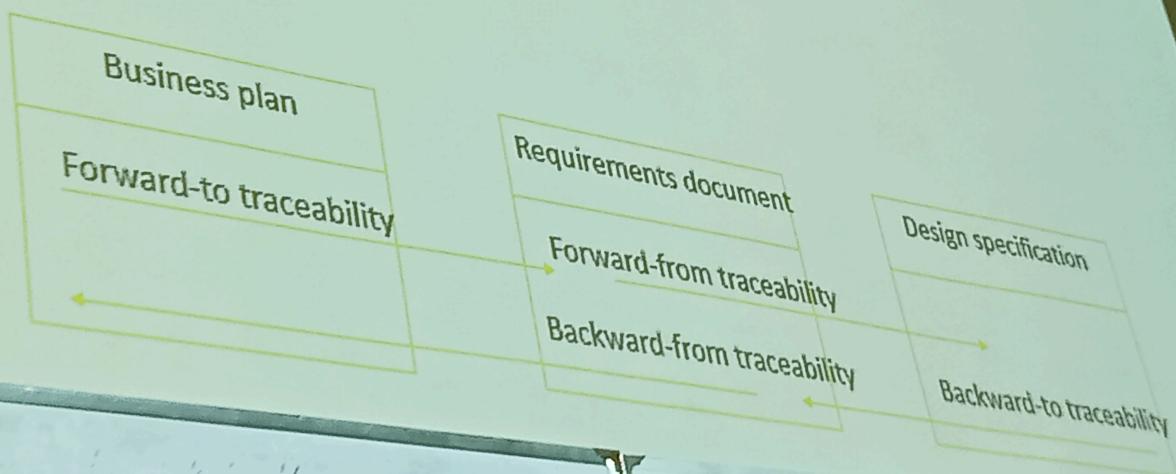
Backward-to Traceability

- Links design and implementation components back to requirements

Forward-to Traceability

- Links other documents (which may have preceded the requirements document) to relevant requirements

Backwards and Forwards Traceability



Categories of Traceability

- Requirements-sources traceability
- Requirements-rationale traceability
- Requirements-requirements traceability
- Requirements-architecture traceability
- Requirements-design traceability
- Requirements-interface traceability

A Generic Traceability Table

	A01	A02	A03	Aii
R01		↙	↙	
R02	↙	↙		
R03		↙		
Rnn		↙	↙	

Need for Traceability Policy

- Huge amount of information, which is expensive to collect, analyze, and update
- Need to continuously update traceability information
- A traceability policy is needed

Traceability Policy

- Traceability information
- Traceability techniques
- When to collect information
- Roles
- Documentation of policy exceptions
- Process of managing information

Traceability Information

- No. of requirements
- Estimated lifetime
- Level of organization's maturity
- Project team and composition
- Type of system
- Specific customer requirements

- ## Basic Types of Requirements Traceability - 1
- Pre-RS traceability
 - Concerned with those aspects of a requirement's life prior to its inclusion in the RS (requirements production)
 - Post-RS traceability
 - Concerned with those aspects of a requirement's life that result from its inclusion in the RS (requirements deployment)

Summary

- Requirements traceability is an on-going process, and has two basic types: pre-RS and post-RS
- There are four classifications of requirements traceability
- We discussed traceability information, policies, and techniques
- Without proper traceability, requirements cannot be managed

Measurable Student Learning Outcomes

CLOs	Description	PLOs	Domain	Domain Level
CLO1	Describe the importance of the requirements engineering process	PLO-01	Cognitive	1. Knowledge
CLO2	Prioritize software requirements for the development of cost-effective and efficient technical solutions	PLO-02	Cognitive	4. Analyze
CLO3	Prepare both functional and non-functional requirements along with validation for a medium-size software system	PLO-02	Cognitive	3. Apply

1. Software Requirements, Wierwille K. & Beatty J., 3rd Ed. Microsoft Press, 2013
2. Requirements Engineering, Elizabeth Hull, Ken Jackson, and Jeremy Dick. 3rd Ed, Springer-Verlag London Limited, 2011.