

Traceability Lab

Requirements traceability

Backward traceability

- To previous stages in development
- Most important: traceability to requirement rationale (pre-RS traceability)

Forward traceability

- To all documents/artifacts that follow SRS (post-RS traceability)

Important for:

- Assessing change requests
- Project management: progress visibility, risk management

Requirements traceability

- Easier in theory than in practice
- Costs may not even out for those who get the benefits
- Weak current tool support in:
 - Tracing between different tools
 - Capturing informal communication

Sample Traceability Matrix

Feature #	Feature Name	Requirement #	Requirements Name	Test Case 1	Test Case 2	Test Case 3	...
F1	User Management	R1.1	User log in	x			
		R1.2	User log out		x		
F2	Manage Inventory	R2.1	User adds inventory			x	
		R2.2	User updates inventory	X			X

Requirements Rationale

- Captures the underlying assumptions and reasoning behind the requirement.
- Motivates the specifics, e.g., choice of response time.
- Helps traceability to existing problems.
- Communicates importance when requirements change.
- E.g., “REQ: when network goes down, maintain responsiveness and cache data”.
 - **Rationale:** devices have enough short-term storage. Dropping inputs because of network errors bothers users.
 - **Test Scenario:** 1. Turn phone wifi off. 2. Enter data. 3. Confirm app still accepts data. 4. Reenable wifi. 5. Confirm app stores observation to server from cache.
- Other example: <https://www.chambers.com.au/glossary/rationale.php>

Traceability Group Assignment

Due Mar 30 4pm

- Add a traceability matrix to your repo. You can do this as a Markdown file using Markdown table syntax:
 - | User Story | Tests |
|-----------------------------------|-----------------|
| # 3 - annihilate foreign peacocks | TestPeacockNerf |
 - You may have more than one test for each user story.
- The traceability matrix lists the feature, the user story, and the test case(s) for that requirement. You should ensure the PRs you create are closed/merged using the appropriate GitHub syntax (e.g., “satisfies #2”). Add a comment if you have already closed the issue/merged the PR.