

Requirement Traceability Matrix

RTM is a document that maps and traces user requirements with test cases. It captures all requirements proposed by the client and requirement traceability in a single document, delivered at the conclusion of the Software development life cycle. The main purpose of Requirement Traceability Matrix is to validate that all requirements are checked via test cases such that no functionality is unchecked during Software testing. The main agenda of every tester should be to understand the client's requirement and make sure that the output product should be defect-free. To achieve this goal, every QA should understand the requirement thoroughly and positive and negative test cases. This would mean that the software provided by the client has to be further split into different scenarios and further to cases. Each of these cases has to be executed individually.

A simple way is to trace the requirement with its corresponding test scenarios and test cases. This merely is termed as 'Requirement Traceability Matrix.' The traceability matrix is typically a worksheet that contains the requirements with all possible test scenarios and cases and their current state, i.e. if they have been passed or failed. This would help the testing team to understand the level of testing activities done for the specific product.

Types of Traceability Test Matrix

In Software Engineering, traceability matrix can be divided into three major component as mentioned below:

- **Forward traceability:** This matrix is used to check whether the project progresses in the desired direction and for the right product. It makes sure that each requirement is applied to the product and that each requirement is tested thoroughly. It maps requirements to test cases.
- **Backward or reverse traceability:** It is used to ensure whether the current product remains on the right track. The purpose behind this type of traceability is to verify that we are not expanding the scope of the project by adding code, design elements, test or other work that is not specified in the requirements. It maps test cases to requirements.

- **Bi-directional traceability (Forward+Backward):** This traceability matrix ensures that all requirements are covered by test cases. It analyzes the impact of a change in requirements affected by the Defect in a work product and vice versa.

Parameters to include in RTM

- Requirement ID
- Requirement Type and Description
- Test Cases with Status

Req No	Req Desc	Testcase ID	Status
123	Login to the application	TC01,TC02,TC03	TC01-Pass TC02-Pass
345	Ticket Creation	TC04,TC05,TC06, TC07,TC08,TC09 TC010	TC04-Pass TC05-Pass TC06-Pass TC06-Fail TC07-No Run
456	Search Ticket	TC011,TC012, TC013,TC014	TC011-Pass TC012-Fail TC013-Pass TC014-No Run