1. What is the purpose of the Requirement Traceability Matrix?

A requirement traceability matrix will manifest the requirements agreed upon by the client and development team as a baseline and the same is compared with the test case results and checked if the functionality is being met.

Requirement traceability matrix is prepared by referring to the business requirement document and functional requirement document which is prepared by the inputs from the customer and analysed by a slew of meetings with cross functional team to ensure the right functional and non functional requirements are documented and prioritized before heading to preparing the Requirement traceability matrix.

A requirement traceability matrix will map requirements with test cases which in turn ensures that we do not miss out on any requirements during either the testing or the design stage

Requirement traceability matrix is important in software development life cycle as complex functionalities and long duration projects needs to be monitored and requirement traceability matrix is an efficient tool to monitor if all the functionalities check list is being addressed or not. It basically offers insights into all stages of software development life cycle.

This will in turn ensure that after each functionality is being met the artefacts required to be documented after each step is done.

Testing is mapped to a requirement to ensure all requirements/ functionalities that are considered during initial planning stage is mapped with each testing step or design step

RTM will document change requests if any comes up and the source of the CR is also documented and ensure the changes are addressed to a

These details can be used to prioritize the requirements

Also any new requirements that come up will document its impact on the systems pre existing requirements

RTM is a powerful tool which is initially used to track the requirements and at a later stage it is used to it can be used for regression tests on basis of relationship between the requirements and design, test cases etc.

As far as testers are considered they use

* Forward Traceability:- here the requirements are mapped with test cases. This is usually prepared in the beginning of the project planning which ensures the project is heading in the right direction. In this type of matrix we are tracing requirements right through till the final design to ensure all requirements are addressed for either design or testing
* Backward Traceability:- here test cases are mapped with initial requirements. This kind of traceability helps us to trace a request or requirement back to its source. This concept is always tracking testing or design requirements backward with initial requirements ensuring scope creep doesn’t occur. Because the team is controlled by this RTM ensuring we are working on only initially laid requirements and not going beyond the initial requirements
* Bidirectional Traceability:- this is a combination of backward traceability and forward traceability here mapping is done and we check the requirements and test cases and test case with requirements. In bidirectional traceability we will have a clear idea on the which requirements will be affected if any changes are made to the scope. This in turn lets us know the impact the changes if any will have on the project life cycle

**Solution evaluation and Software requirements specification**

Solution evaluation is set of conditions that a solution must meet to satisfy the business needs. Here we define and measure the solution performance post which these results can be evaluated to ensure the solution meets the requirements. If at all the solution falls short this can also be analyzed for gaps or blocks. Identification of limitations in the solution meeting the requirements and addressing the same

**Measure solution performance**

Here we define values and performance measure to see if the solution meets organization requirement. The measurement is taken up and the data is pooled in to perform this activity

**Analyze solution performance**

The data that is pooled in from previous task is analyzed and and interpreted to ensure the solution is delivered as perceived by stakeholders. This is a collaborative effort of business analysts and stake holders to ensure the solution meets stakeholders requirement

**Assess solution limitation**

The solution in an event wherein it is not meeting expectations then a root cause analysis is done. Internal and external factors influencing the solution is assessed, documented and corrective actions are taken

**Assess enterprise limitations**

In this stage external causes for solution not meeting required output is assessed documented analysed and corrective actions are taken. The cause might be people working with the process or the organisation structures where the solution is implemented

**Recommend actions to increase solution value**

This stage defines the corrective actions to be taken, also the roadmap and action plan for implementing the corrective actions to ensure the solution meets organizational requirements

Key takeaway

* The evaluation process must be carried out while looping the stakeholders during the entire process to gather feedback and ensure the solution is in line with the stakeholder requirements
* Documentation of all the findings and recommendations becomes vital as the solution evaluation is a continous process wherein we evaluate the process again after a certain period and go through a refinement to ensure the continual improvement.

**Software requirements specification**

Software requirements specification gives us a idea of what a software is expected to do in any given environment. A clear software requirements specification will define goals properly and cut down on developmental costs significantly. It basically defines how software interacts with hardware and what kind of results is expected out of the system.

A software requirements specification will list out all the functional and non functional requirements. There would be use cases listed which will define the kind of interactions that the software system needs to establish.

Software requirements specification is a accurate assessment of requirements before design, the purpose is to reduce remodelling of the design during delivery stage.

Software requirements specification also provides a practical base to estimate product costs, risks, and schedules. This also ensures that the project is successful as the planning is done meticulously.

The software requirements specification document lists adequate and necessary requirements and scope of project. The requirements are elicited and documented and to ensure no lapses are there in the elicitation the developer should know the product or system under development thoroughly, ie the requirements, functionalities, where the system is deployed, what is the purpose of the system. This is achieved through continuous communication with the project manager, team and end user throughout the software development life cycle.