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Project Quality Assurance using Traceability Matrix

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Abstract— Requirement Traceability Matrix (RTM) keeps track of all user requirements and maps it with test case ids. This document contains the various steps that are used to create a traceability matrix. In this paper we include template of RTM which contains requirements and its associated test case that is required in any of web based project and also benefits of using this matrix which will assure the quality of the project. We are focusing on RTM which manages, maintains and check the test cases against the specified requirements, it also defines the expectation of the testing team. Software always contains a bug that needs to be fixed, but traceability helps to minimize failures and helps to deliver the right software. Ensures the team are not just building the product right, but also building the right product.

Index Terms— Creating of RTM and Test cases, Requirement Traceability Matrix, Correctness, Quality check.

1 INTRODUCTION

This paper contains importance of requirement traceability matrix (RTM) which is most essential and required to check against the System requirement Specification (SRS) by the client or development team. RTM is an automated tool for managing and maintaining the Test Cases. Requirement Traceability Matrix or RTM consists of all requirements proposed by the client or development team and traces all the functionality of the project and test whether it has met the requirements using forward traceability matrix, backward traceability matrix and bidirectional traceability matrix. In other words, it is a document that maps and traces user requirement with test cases. Requirements, Test case, Execution of Test cases are all interlinked, and each case can be traced to each other to check whether all the tests are covered. The main purpose of Requirement Traceability Matrix is to see that all test cases are covered so that no functionality should miss while testing and Any changes that happens after the system has been built we can trace the impact of the change on the Application through RTM Matrix. In every phase of system development life cycle we find test cases and for each test cases RTM ensures the test coverage. It ensures and provides the system with error free

Types of Traceability Test Matrix

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 matrices 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.

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and provides a quality system.



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