

Unit- II

Execution of Test plan

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Test Process

- Putting together and Baselining a test Plan
- Test Case Specification
- Update traceability Matrix
- Identifying Possible Candidates for Automation
- Developing and Baselining Test cases
- Executing Test cases & Keeping Traceability Matrix current
- Collecting and Analyzing Metrics
- Preparing Test Summary Report
- Recommending Product Release Criteria
- Test Reporting
- Recommending Product Release

Putting together and Baselining a test Plan

- Test plan is baselined in SCM after review
- Any change needed is discussed among stakeholders & is kept current

Test Case Specification

- Test case specification becomes basis for preparing individual test cases
- Test case specification should clearly identify
 - The purpose of the test
 - Items being tested
 - Environment
 - Input data to be used
 - Steps to be followed to execute the test
 - Expected result
 - A step to compare the actual results
 - Any relationship between this test and other tests

Update traceability Matrix

- Traceability Matrix is a tool to validate the every requirement is tested
- It is created during requirements gathering phase
- When test case specification is complete traceability Matrix is updated with test case specification identifier

Identifying Possible Candidates for Automation

- Before writing the test cases, a decision should be taken as to which test are to be automated and which should be run manually
- Criteria
 - Repetitive nature of the test
 - Effort involved in automation
 - Amount of manual intervention required for the test
 - Cost of automation tool

Developing and Baselining Test cases

- Writing test cases
- Keeping change history documents
- All artifacts of test cases should be stored in TCDB and SCM

Executing Test cases & Keeping Traceability Matrix current

- Test cases have to be executed at appropriate times during a project
- Defect repository is updated
- Tractability matrix is kept current

Collecting and Analyzing Metrics

- When tests are executed, information about test execution gets collected in test logs and other files.
- The basic measurements from running the tests are converted to meaningful metrics by the use of appropriate transformations and formulae.
- Examples
 - Total number of test cases
 - Number of test cases passed
 - Number of test cases failed
 - Number of test cases blocked
 - Number of defects found
 - Number of defects accepted
 - Number of defects rejected
 - Number of critical defects
 - Number of planned test hours
 - Number of actual test hours

Preparing Test Summary Report

- At completion of test cycles, a test summary report is produced
- The reports gives insights to the senior management about the fitness of the product release.

Recommending Product Release Criteria

- Decide the fitness of a product for release
- Testing can never conclusively prove the absence of defects in software product. What it provides is an evidence of what defects exists in the product, their severity and impact.
- Job of testing team is to articulate to the senior management and product release team
 - What defects the product has
 - What is the impact/severity of each defect
 - What would be the risks of releasing the product with the existing defects
- Senior Management can then take a meaningful business decisions on whether to release a given version or not

Test Reporting

- Test reporting is means of communication between two teams- test team and development team
 - **Test incident report:-** is a communication that happens through the testing cycle as and when defects encountered. A test incident report is nothing but an entry made in the defect repository. Each defect has a unique ID and this is used to identify the incident. The high impact test incidents(defects) are highlighted in test summary report

Test Reporting

- **Test Cycle report:-** Test projects take place in units of test cycles. A test cycle entails planning and running certain tests in cycles, each cycle using different build of products. As product progresses through various cycles, it is expected to stabilize. A test cycle report at the end of each cycle gives-
 - A Summary of activities carried out during that cycle
 - Defects that were uncovered during that cycle based on their severity and impact
 - Progress from previous cycle to the current cycle in terms of defects fixed
 - Outstanding defects that are yet to be fixed in this cycle
 - Any variations observed in effort or schedule(that can be used for further planning)

Test Reporting

- Test summary report-Final step in test cycle is to be recommended the suitability of product for release. A report that summarizes the result of test cycle is the Test summary report
- **Two types of Summary Report**
 - Phase wise test summary- produced at the end of every stage
 - Final Test summary report- which has all the details of all the testing done by all phases and teams. This report is also called as release test report.
 - A summary report should contain
 1. A summary of the activities carried out during the test cycle or phase
 2. Variance of activities carried out from the activities from the activities planned. This includes
 - The test that were planned to be run but could not be run(with reasons)
 - Modifications to test from what was in the original test specification(TCDB should be updated)
 - Additional test that were run(that was not in the original test plan)
 - Differences in effort and time taken between what was planned and what was executed
 - Any other deviation from plan

Test Reporting

3. Summary of results should include

- Test that failed with any root cause description
- Severity of impact of the defects uncovered by tests

4. Comprehensive assessment and recommendation for release should include

- “Fit for release” assessment and
- Recommendation of release

Recommending Product Release

- Based on Summary Report, Organization can take a decision on whether to release the product or not