

Ch 8

Skills needed in testing

1. Technique specialists
2. Automators
3. Database experts
4. Business skills & understanding
5. Usability expert
6. Test environment expert
7. Test managers

Problems resulting from poor configuration management

- can't reproduce a fault reported by a customer
- can't roll back to previous subsystem
- one change overwrites another
- emergency fault fix needs testing but tests have been updated to new software version
- which code changes belong to which version?
- faults which were fixed re-appear

definition of Configuration Management

The process of identifying and defining the configuration items in a system

- controlling the release and change of these items throughout the system life cycle,
- recording and reporting the status of configuration items and change requests,
- and verifying the completeness and correctness of configuration items."

Products for CM in testing

- test plans
- test designs
- test cases:
 - test input
 - test data
 - test scripts
 - expected results
- actual results
- test tools

Test Plan

The test manager might participate in the following planning activities:

1. Defining the overall approach to and strategy for testing
2. Deciding about the test environment and test automation
3. Defining the test levels and their interaction, and integrating the testing activities with other project activities
4. Deciding how to evaluate the test results
5. Selecting metrics for monitoring and controlling test work, as well as defining test exit criteria
6. Determining how much test documentation shall be prepared and determining templates
7. Writing the test plan and deciding on what, who, when, and how much testing
8. Estimating test effort and test costs; (re)estimating and (re)planning the testing tasks during later testing work

Test Entry and Exit Criteria

Defining clear test entry and exit criteria is an important part of test planning.

preconditions for starting test execution

- The test environment is ready.
- The test tools are ready for use in the test environment.
- Test objects are installed in the test environment.
- The necessary test data is available.

Exit criteria

Exit criteria are used to make sure test work is not stopped by chance or prematurely.

- They prevent tests from ending too early,
- But they also prevent testing from being too extensive.

Here are some typical exit criteria and corresponding metrics:

- **Achieved test coverage:**
 - Tests run, covered requirements, code coverage, etc.
- **Product quality:**
 - Defect density, defect severity, failure rate, and reliability of the test object
- **Residual risk:**
 - Tests not executed, defects not repaired, incomplete coverage of requirements or code, etc.
- **Economic constraints:**
 - Allowed cost, project risks, release deadlines, and market chances