

- * feature: distinguishing characteristics of a component or system
- * test condition: a testable aspect of a component or system identified as a test basis for testing
- * functional suitability: the degree to which software product provides functions which meet stated and implied needs when the software is used under specified conditions.
- * decision table: test cases designed to execute combinations of conditions and actions resulting from them
- * Dynamic testing shows failures caused by defects, debugging eliminates the defects which are the source of failures. Dynamic testing detects the presence of defects.
- * Testing can not ensure that the requirements are detailed enough
- * Testing reduces the risk of poor quality software
- * Quality Assurance ensures the standards in the organization are followed.
- * Quality can not be measured by counting the number of executed tests.
- * Identifying any required infrastructure & tools is a part of test design
- * Creating test suites from test scripts is a part of test implementation
- * Analysing lessons learned for test process improvement is a part of test completion
- * Evaluating the test basis for testability is a part of test analysis.
- * Test suite is a set of test scripts and procedures
- * Test case is a set of preconditions / inputs / actions / expected results that are developed based on test conditions.
- * Test charter is the documentation of test activities in session-based exploratory testing
- * To check if all work process flows have been covered is white-box testing during acceptance
To check all code statements & code decision paths is white box testing during system testing

* Test cases for component testing are usually derived from component specification design specification or data models, whereas test cases for system testing are usually derived from requirement specification or use cases. ②

* Component testing is the responsibility of the ~~testers~~ ^{developers}, whereas system testing typically is the responsibility of independent testers.

* Purpose of regression testing is to detect unintended side effects, while the purpose of confirmation testing is to check if the original defect has been fixed.

* Testing a new functionality is not regression testing.

* Testing to check if the system is still working in a new environment is regression testing.

* In incremental development model, testing is not a separate incremental/additional step alone.

* In sequential model, a phase in the development process should begin when the previous phase is complete.

* In waterfall model, testing is viewed as a separate phase, which takes place after development has been completed.

* Tester & developer are not roles in a formal review.

* Formal review phases:

Fixing & Reporting: collection of metrics, defect reports are created.

Initiate Review: answer any questions

Planning: checking of entry criteria

Issue Communication & Analysis: reviewing findings against the exit criteria

* Inspection is a formal process based on rules & checklists.

* In Technical Review checklist is optional and ~~it is~~

* Static testing does not find run-time problems, dynamic testing does.

* Static testing is important for safety critical computer systems as well.

* Error guessing: Test technique in which tests are derived based on testers knowledge of past faults or general knowledge of failures.

* Black-box: Test technique based on analysis of the specification of a component or system.

* Exploratory testing: An approach to testing where the testers dynamically design and execute tests based on their knowledge, exploration of test item & results of previous tests.

* ~~Experience based~~ checklist based testing: An experience based test technique, whereby the experienced tester uses a list of items to be noted, checked or remembered, or a set of rules or criteria against which a product must be verified.

* White box testing is a technique based on analysis of the architecture.

* White box testing checks that the test object is working according to the detailed design.

* Black box testing is based on requirements and the analysis of the appropriate test bases (requirements, specifications, user stories, use cases)

* Statement coverage is a percentage & does not measure pass/fail or does not provide true/false statements.

~~See~~ Their order!

- * Exploratory testing is suitable when ~~there is absence of a~~ there is experienced testers with knowledge of similar applications & techniques. Absence of a test charter is a poor precondition for the use of exploratory testing.
- * At least one test case must be created for each equivalence partition.
- * Selection of tests is test manager's task. Test manager does prioritization ^{tester specifies} test cases.
- * Tester does not decide on the release of the test object, designs tests.
- * Average number of testers in test execution does not give information about quality.
- * Percentage of test cases created & reviewed is metric for test preparation.
- * During test execution test coverage of requirements by source code is measured.
- * Budget constraint is important for prioritization of tests.
- * Test logs is part of monitor & control, use cases is a part of test analysis.
- * Availability of test environment is an entry criterion, tester qualification is not an exit criterion.
- * Reliability measures, test coverage, schedule and status about fixing defect & remaining risks are typical exit criteria from testing.
- * Deviation from test approach, measurements of actual progress against exit criteria and evaluation of quality of test objects are all included in a test summary report.
- * Exploratory testing is a common technique employed in reactive strategies.
- * Exploratory testing is under the experience based testing category.
- * Risk based testing is an example of analytical approach.
- * The control algorithms are checked against specific strategy ^{then a standard} compliance approach.
- * Consultative approach is driven by advice, guidance, instructions of stakeholders, experts who may be inside or outside of the organization.

* Metric based approach: takes care of budget which was used by previous similar test projects

* In expert based approach, overall experience collected in interviews with test managers, estimation effort for test automation spread in the test team, average of calculation collected from business experts.

* Ideas for improving the test case is not necessary to include in defect report.

* Test execution tools are beneficial when running regression tests ^{not} when creating them

* Test execution tools is not used to maintain version control of tests, this is done by configuration management tools.

* Test execution tools are useful to reduce the repetitive manual work

* Static analysis tools are especially suitable for developers.

* Equivalence partition is subset of the value domain of a variable within a component or system in which all values are expected to be treated the same, based on the specification.

* Test case: a set of preconditions, inputs, actions, expected results & postconditions that are developed based on test conditions.

* Testware: work products produced during the test process for use in planning, designing, executing, evaluating and reporting on testing.

* Test oracle: a source to determine an expected result to compare with the actual result of the system under test.

* Finding defects & failures is a typical objective of testing. (project management)

* Validating a project plan works as required is not an objective of testing

* Comparing actual results with the expected results is a test performing activity it is not an objective.

* Wrong specification may cause a failure if subsequently implemented.

* Absence of errors is a fallacy: No error does not mean the system is fit for use.

* Test Design: Identifying test data to support test cases.

Test Implementation: Prioritizing test procedures & creating test data.

Test Execution: Analysing discrepancies to determine their cause

Test Completion: Entering change requests for open defect reports.

* By maintaining traceability between the test basis and test artifacts it is possible to determine if a new test case has increased coverage of the requirements.

* Areas that may be impacted by side effects of a change can be targeted by regression testing.

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* Author can not lead the inspection

* Walkthrough, there is a role of scribe, purpose is to detect potential defects, review meeting is led by the author, reviewers finds potential defects by individual review, a review report is produced. (7)

* Ability to see what might go wrong is a tester's mindset rather than developers.

* Reviewing should start as soon as draft versions of documents are available.

* The analysis and design of tests should start during the corresponding development activity, not the implementation of tests should start

* Testing communication is in integration testing.

* Any test type (functional, non-functional, white-box) can be performed at any test level, there is no restriction.

* The purpose of regression testing is to ensure that all previously run tests still work

* The purpose of confirmation testing is to check that tests that previously failed now pass.

* Impact analysis is used when deciding if a fix to a maintained system is worthwhile.

* Impact analysis can not be related about value or can not provide an indicator of the effectiveness of test cases.

* During review session, reviewers communicate any potential defects of the product that they identified during individual review.

* Reviews increase quality of specifications.

* Reviews will result in fewer missed requirements & better communication between testers & developers, however it is not true for static analysis

* By means of static analysis, we find coding defects that might have not been found by performing only dynamic testing.

* Preparation of checklist is not part of planning. Reviewers are neither involved in the planning nor responsible for the creation of checklist

* During issue communication, any potential defects that have been identified in the individual review are communicated.

- * The completion of checklists by reviewers take place during individual review.
- * Manager decides on the execution of reviews. Monitors, trying cost-effectiveness.
- * Moderator ensures effective running of review meetings.
- * Author fixes defects in the work product under review.
- * Exploratory testing is often carried out when timescales are short, so making in-depth investigations about background of the test object is unlikely.
- * Session based testing: An approach to test design in which test activities are planned as uninterrupted sessions of test analysis & ~~design~~ ^{execution}, often used in conjunction with checklist based testing.
- * For experience based testing, tests are based on likelihood or distribution of defects.
- * For black-box testing, deviations from the requirements are checked, user stories are used as the test basis.
- * Each use case specifies some behaviour that a subject can perform in collaboration with one or more actors.
- * Tests are designed to exercise the defined behaviors.
- * Test cases are not designed to ensure ease of use.
- * Statement coverage is something about proportion & percentage ^{not number of code lines.}
- * Statement coverage is measure of the proportion of executable statements in the source code exercised by tests.
- * Decision coverage is a measure of the proportion of decision outcomes in the code exercised by tests. In the code there may be more than one path with same outcome.
- * Error guessing involves using your knowledge & experience of defects found in the past and typical mistakes made by developers. It sometimes involves checklists.
- * Quality is responsibility of everyone.
- * When specifications contain ambiguities & inconsistencies, assumptions are made on their interpretation, and an independent tester can be useful in questioning those assumptions and the interpretation made by the developer.
- * Test manager: writes test summary reports based on the information gathered during test.
- * Tester: Review tests developed by others, prepare & acquire test data, analyze, review and assess requirements, specifications and models for testability.
- * The need for the test basis to be available is an entry criteria.
- * For metrics-based approach, a more sophisticated method is needed than simply taking average of past project records.
- * Risk level is determined by a combination of the probability of an undesirable event and the expected impact of that event.

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- * Test design activities require test data preparation tools
- * Management of testing & testware requires defect management tools
- * Performance measurement & dynamic analysis require dynamic analysis tools

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* During tool selection;

- The need to evaluate the test automation skills & training, ~~monitoring~~ mentoring and coaching needs of the testers who will use the tool
- The need to evaluate whether the tool provides the required functionality and does not duplicate existing tools.
- The need to evaluate tool vendor in terms of the training & other support they provide

* The reason for using a pilot project to introduce a tool is to evaluate the need to evaluate how the tool fits with existing processes & practices and determining what would need to change.

* Quality assurance: Activities focused on providing confidence that quality requirements will be fulfilled.

* Quality: The degree to which a component or system satisfies the stated and implied needs of its various stakeholders.

* Cost of Quality: The total costs incurred on quality activities and issues and often split into prevention costs, appraisal costs, internal failure costs and external failure costs.

* Repairing defects & analyzing the cause of failure are part of debugging

* Preventing defects is a typical test objective, comparing actual results and ~~exact~~ expected results is just a test activity not objective.

* Absence of error fallacy says you can find & remove many bugs but still the release may be unsuccessful software which the product owner is not asking

* Evaluating code defects is not a tester's mindset

* Ensuring that processes are carried out properly is a quality assurance

- * Writing a user story should be done by product owner
- * Designing test data is a part of test process.
- * Assigning a version to a test item is part of configuration management ⑧
- * Analysing a defect is a part of debugging
- * Confirmation testing is on the intended effects of a bug fix or other change
- * Confirmation testing is not part of impact analysis
- * Impact analysis is useful during maintenance testing and it is not necessary for confirmation testing.
- * Acceptance testing is not typically focuses on identifying defects.
- * Testing supported devices is a portability test which is a non-functional test.
- * Change related tests are confirmation test & regression test.
- * Facilitator or moderator runs the formal meeting and there is no programmer role in such meeting
- * Static testing is cheaper than dynamic testing.
- * Evaluating an author in a technical review leads to failure not success because it destroys trust.
- * Velocity is a way of measuring productivity in Agile development.
- * Decision coverage is the coverage of decision outcomes.
- * White box is structure based and based on analysis of architectural design
- * Error guessing is a type of experience based testing
- * Black box is behavior based.
- * Exploratory testing can involve both blackbox testing & white box testing
In exploratory testing tester uses a time-box defined. It is an experience based testing and useful to complement formal testing.
- * Defect report should provide information about the impact on product quality
- * Percentage of test cases passed/failed/not run is a common metric
- * Estimating cost to find the next defect can be possible only during execution.
- * Configuration management maintains the integrity of the software.
- * Independent testing is possible but developers loses the sense of responsibility for quality
- * Challenging stakeholder assumption is a benefit of tester independence
- * Test approach is a topic addressed in test plan.
- * Configuration management is not a topic addressed in test plan
- * Configuration management is not a topic addressed in test plan
- * Static analysis ~~test~~ tool is only about the code metrics.
- * Typical test automation ~~test~~ ^{pilot project} aims to assess whether benefits can be achieved at reasonable cost