

# Standard Glossary of Terms used in Software Testing

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## Search results

Exact matches first





## All terms

A/B testing Version 1

A statistical testing approach to determine which of two systems or components performs better.

Reference: After ISO 29119-11

abnormal end Version 1

The unintended termination of the execution of a component or system prior to completion.

Reference: After ISO 24765

Synonyms: abnormal termination

abuse case Version 1

A use case in which some actors with malicious intent are causing harm to the system or to other actors.

acceptance criteria Version 2

The criteria that a component or system must satisfy in order to be accepted by a user, customer, or other authorized entity.

Reference: ISO 24765

acceptance test-driven development Version 1

A collaboration-based test-first approach that defines acceptance tests in the stakeholders' domain language.

**Abbreviation: ATDD** 

See also: specification by example

acceptance testing Version 2

A test level that focuses on determining whether to accept the system.

See also: user acceptance testing

accessibility Version 2

The degree to which a component or system can be used by people with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use.

Reference: After ISO 25010

account harvesting Version 2

The process of obtaining user account information based on trial and error with the intention of using that information in a security attack.

accountability Version 1

The degree to which the actions of an entity can be traced uniquely to that entity.

Reference: After ISO 25010

actual result Version 1

The behavior produced/observed when a component or system is tested.

Synonyms: actual outcome

ad hoc review Version 2

A review technique performed informally without a structured process.

Reference: After ISO 20246

ad hoc testing Version 2

Informal testing performed without test analysis and test design.

adaptability Version 3

The degree to which a component or system can be adapted for different or evolving hardware, software or other operational or usage environments.

Reference: After ISO 25010

See also: portability

Search results Page: 2 of 40



adversarial example Version 1

An input to an ML model created by applying small perturbations to a working example that results in the model outputting an incorrect result with high confidence.

Reference: ISO 29119-11

adversarial testing Version 1

A test technique based on the attempted creation and execution of adversarial examples to identify defects in an ML model.

Reference: After ISO 29119-11

Agile Manifesto Version 2

A statement on the values that underpin Agile software development. The values are: individuals and interactions over processes and tools, working software over comprehensive documentation, customer collaboration over contract negotiation, responding to change over following a plan.

Agile software development

Version 1

Version 2

A group of software development methodologies based on iterative incremental development, where requirements and solutions evolve through collaboration between self-organizing cross-functional teams.

See also: feature-driven development

Agile test leader Version 1

A leadership role that serves agile teams, championing testing and quality at the organizational level.

Synonyms: quality coach, agile test manager, quality leader

See also: test manager, Agile test team leader

Agile test team leader Version 1

A role that is responsible for maintaining solution quality within an agile delivery team.

See also: Agile test leader

alpha testing Version 3

A type of acceptance testing performed in the developer's test environment by roles outside the development organization.

analytical test strategy Version 1

A test strategy whereby the test team analyzes the test basis to identify the test conditions to cover.

analyzability Version 2

The degree to which an assessment can be made for a component or system of either the impact of one or more intended changes, the diagnosis of deficiencies or causes of failures, or the identification of parts to be modified.

Reference: After ISO 25010 See also: maintainability

anomaly Version 1

A condition that deviates from expectation.

Reference: After ISO 24765

anti-malware Version 1

Software that is used to detect and inhibit malware.

See also: malware

API testing Version 1

Testing performed by submitting requests to the test object using its application programming interface.

application programming interface Version 1

A type of interface in which the components or systems involved exchange information in a defined formal structure.

Abbreviation: API

See also: usability

appropriateness recognizability

The degree to which users can recognize whether a component or system is appropriate for their needs.

Reference: After ISO 25010

Synonyms: understandability

Search results Page: 3 of 40



atomic condition Version 2

A condition that does not contain logical operators.

attack vector Version 1

A path or means by which an attacker can gain access to a system for malicious purposes.

attacker Version 1

A person or process that attempts to access data, functions or other restricted areas of the system without authorization, potentially with malicious intent.

See also: hacker

audio testing Version 1

Testing to determine if the game music and sound effects will engage the user in the game and enhance the game play.

audit Version 2

An independent examination of a work product or process performed by a third party to assess whether it complies with specifications, standards, contractual agreements, or other criteria.

Reference: After ISO 24765

**authentication** Version 1

A procedure determining whether a person or a process is, in fact, who or what it is declared to be.

See also: authorization

authenticity Version 1

The degree to which the identity of a subject or resource can be proved to be the one claimed.

Reference: ISO 25010

authorization Version 1

Permission given to a user or process to access resources.

See also: authentication

automation code defect density

Version 1

Defect density of a component of the test automation code.

See also: defect density

automotive safety integrity level

One of four levels that specify the item's or element's necessary requirements of ISO 26262 and safety measures to avoid an unreasonable

residual risk.

Abbreviation: ASIL
Reference: ISO 26262
See also: safety integrity level

automotive SPICE Version 1

A process reference model and an associated process assessment model in the automotive industry.

**Abbreviation:** ASPICE **Reference:** ISO 33002

availability Version 2

The degree to which a component or system is operational and accessible when required for use.

Reference: After ISO 25010

back-to-back testing Version 1

Testing to compare two or more variants of a test item or a simulation model of the same test item by executing the same test cases on all variants and comparing the results.

Reference: Spillner

Search results Page: 4 of 40



behavior-driven development Version 1

A collaborative approach to development in which the team is focusing on delivering expected behavior of a component or system for the customer, which forms the basis for testing.

Abbreviation: BDD

beta testing Version 3

A type of acceptance testing performed at an external site to the developer's test environment by roles outside the development organization.

black-box test technique Version 3

A test technique based on an analysis of the specification of a component or system.

Synonyms: black-box test design technique, specification-based test technique

black-box testing Version 2

Testing based on an analysis of the specification of the component or system.

Synonyms: specification-based testing

botnet Version 1

A network of compromised computers, called bots or robots, which is controlled by a third party and used to transmit malware or spam, or to launch attacks.

boundary value Version 2

A minimum or maximum value of an ordered equivalence partition.

See also: boundary value analysis

boundary value analysis Version 2

A black-box test technique in which test cases are designed based on boundary values.

See also: boundary value

branch Version 2

A transfer of control between two nodes in the control flow graph of a test item.

branch coverage Version 2

The coverage of branches in a control flow graph.

branch testing Version 1

A white-box test technique in which the test conditions are branches.

bug hunting Version 1

An approach to testing in which gamification and awards for defects found are used as a motivator.

build verification test Version 1

An automated test that validates the integrity of each new build and verifies its key/core functionality, stability, and testability.

Abbreviation: BVT

built-in quality Version 1

A set of practices to ensure that each solution meets quality standards throughout each increment of development, focusing on constructive quality assurance as a shared responsibility.

Reference: After SAFe

#### **Capability Maturity Model Integration**

Version 1

A framework that describes the key elements of an effective product development and maintenance process. The Capability Maturity Model Integration covers best-practices for planning, engineering and managing product development and maintenance.

Abbreviation: CMM

**capacity** Version 1

The degree to which the maximum limits of a component or system parameter meet requirements.

Reference: After ISO 25010

Search results Page: 5 of 40



capacity testing Version 1

Testing to evaluate the capacity of a system.

capture/playback Version 2

A test automation approach in which inputs to the test object are recorded during manual testing to generate automated test scripts that can be executed later.

Synonyms: capture/replay, record/playback

causal loop diagram Version 1

A graphical representation used to visualize cause-effect relationships and feedback loops in a system.

Reference: After Sterman00

cause-effect diagram Version 1

A graphical representation used to organize and display the interrelationships of various possible root causes of a problem. Possible causes of a real or potential defect or failure are organized in categories and subcategories in a horizontal tree-structure, with the (potential) defect or failure as the root node.

Reference: After Juran

Synonyms: fishbone diagram, Ishikawa diagram

cause-effect graph Version 1

A graphical representation of logical relationships between inputs (causes) and their associated outputs (effects) of a test object.

certification Version 1

The process of confirming that a component, system or person complies with specified requirements.

change-related testing Version 1

A type of testing initiated by modification to a component or system.

checklist-based review Version 1

A review technique guided by a list of questions or required attributes.

Reference: ISO 20246

checklist-based testing Version 3

An experience-based test technique in which test cases are designed to exercise the items of a checklist.

classification tree Version 2

A tree diagram representing test data domains of a test object.

classification tree technique Version 2

A black-box test technique in which test cases are designed using a classification tree.

Reference: Grochtmann

Synonyms: classification tree method

See also: combinatorial testing

CLI testing Version 1

Testing performed by submitting commands to the software under test using a dedicated command-line interface.

closed-loop-system Version 1

A system in which the controlling action or input is dependent on the output or changes in output.

Reference: Bakshi

code injection Version 1

A type of security attack performed by inserting malicious code at an interface into an application to exploit poor handling of untrusted data.

coding standard Version 1

A standard that describes the characteristics of a design or a design description of data or program components.

Reference: ISO 24765

Search results Page: 6 of 40



coexistence Version 2

The degree to which a component or system can perform its required functions while sharing an environment and resources with other components or systems without a negative impact on any of them.

Reference: After ISO 25010

Synonyms: co-existence

See also: portability

collaboration-based test approach

Version 1

An approach to testing that focuses on defect avoidance by collaborating among stakeholders.

**combinatorial testing**A black-box test technique in which test conditions are specific combinations of values of several parameters.

Version 3

See also: classification tree technique

command-line interface

Version 2

A type of interface in which the information is passed in form of command lines.

Abbreviation: CLI

Version 2

A type of product developed in an identical format for a large number of customers in the general market.

**Abbreviation: COTS** 

Synonyms: off-the-shelf software

commercial off-the-shelf

compatibility Version 1

The degree to which a component or system can exchange information with other components or systems, and/or perform its required functions while sharing the same hardware or software environment.

Reference: After ISO 25010

complexity Version 1

The degree to which the design or code of a component or system is difficult to understand.

Reference: After ISO 24765

compliance Version 2

Adherence of a work product to standards, conventions or regulations in laws and similar prescriptions.

Reference: IREB Glossary

compliance testing Version 1

Testing to determine the compliance of the component or system.

Synonyms: conformance testing, regulation testing, standards testing

**component** Version 2

A part of a system that can be tested in isolation.

Synonyms: module, unit

component integration testing Version 3

The integration testing of components.

**Synonyms:** module integration testing, unit integration testing

component testing Version 3

A test level that focuses on individual hardware or software components.

Synonyms: module testing, unit testing

computer forensics Version 1

The practice of determining how a security attack has succeeded and assessing the damage caused.

concurrency Version 1

The simultaneous execution of multiple independent threads by a component or system.

Search results Page: 7 of 40



concurrency testing Version 1

Testing to evaluate if a component or system involving concurrency behaves as specified.

condition coverage Version 1

The coverage of condition outcomes.

Synonyms: branch condition coverage

condition testing Version 2

A white-box test technique in which test conditions are outcomes of atomic conditions.

confidence interval Version 1

In managing project risks, the period of time within which a contingency action must be implemented in order to be effective in reducing the impact of the risk.

confidentiality Version 1

The degree to which a component or system ensures that data are accessible only to those authorized to have access.

Reference: After ISO 25010

configuration management Version 2

A discipline applying technical and administrative direction and surveillance to identify and document the functional and physical characteristics of a configuration item, control changes to those characteristics, record and report change processing and implementation status, and verify that it complies with specified requirements.

confirmation testing Version 3

A type of change-related testing performed after fixing a defect to confirm that a failure caused by that defect does not reoccur.

Synonyms: re-testing

connectivity Version 1

The degree to which a component or system can connect to other components or systems.

Reference: After ISO 2382

consultative test strategy Version 1

A test strategy whereby the test team relies on the input of one or more key stakeholders to determine the details of the strategy.

Synonyms: directed test strategy

context of use Version 1

Users, tasks, equipment (hardware, software and materials), and the physical and social environments in which a software product is used.

Reference: ISO 9241-11

continuous integration Version 1

An automated software development procedure that merges, integrates and tests all changes as soon as they are committed.

continuous testing Version 1

An approach that involves a process of testing early, testing often, test everywhere, and automate to obtain feedback on the business risks associated with a software release candidate as rapidly as possible.

contractual acceptance testing

A type of acceptance testing performed to verify whether a system satisfies its contractual requirements.

control chart Version 1

Version 2

A statistical process control tool used to monitor a process and determine whether it is statistically controlled. It graphically depicts the average value and the upper and lower control limits (the highest and lowest values) of a process.

Synonyms: Shewhart chart

control flow Version 3

The sequence in which operations are performed by a business process, component or system.

Reference: After ISO 29119-4

control flow analysis Version 3

A type of static analysis based on a representation of unique paths for executing a component or system.

Search results Page: 8 of 40



convergence metric Version 1

A metric that shows progress toward a defined criterion, e.g., convergence of the total number of tests executed to the total number of tests planned for execution.

cost of quality Version 1

The total costs incurred on quality activities and issues and often split into prevention costs, appraisal costs, internal failure costs and external failure costs.

coverage Version 3

The degree to which specified coverage items are exercised by a test suite, expressed as a percentage.

Synonyms: test coverage

coverage criteria Version 1

The criteria to define the coverage items required to reach a test objective.

See also: coverage item

coverage item Version 2

An attribute or combination of attributes derived from one or more test conditions by using a test technique.

See also: coverage criteria

Critical Testing Processes Version 1

A content-based model for test process improvement built around twelve critical processes. These include highly visible processes, by which peers and management judge competence and mission-critical processes in which performance affects the company's profits and reputation.

**Abbreviation: CTP** 

cross-browser compatibility Version 1

The degree to which a website or web application can function across different browsers and degrade gracefully when browser features are absent or lacking.

cross-site scripting Version 1

A vulnerability that allows attackers to inject malicious code into an otherwise benign website.

Abbreviation: XSS Reference: NIST.IR.7298

crowd testing Version 1

A test approach in which testing is distributed to a large group of testers.

custom tool Version 1

A software tool developed specifically for a set of users or customers.

cyclomatic complexity Version 3

The maximum number of linear, independent paths through a program.

Reference: After McCabe

Synonyms: cyclomatic number

dashboard Version 1

A representation of dynamic measurements of operational performance for some organization or activity, using metrics represented via metaphors such as visual dials, counters, and other devices resembling those on the dashboard of an automobile, so that the effects of events or activities can be easily understood and related to operational goals.

data flow analysis Version 2

A type of static analysis based on the lifecycle of variables.

data obfuscation Version 1

Data transformation that makes it difficult for a human to recognize the original data.

data privacy Version 1

The protection of personally identifiable information or otherwise sensitive information from undesired disclosure.

Search results Page: 9 of 40



data-driven testing Version 2

A scripting technique that uses data files to contain the test data and expected results needed to execute the test scripts.

See also: keyword-driven testing

**debugging** Version 2

The process of finding, analyzing and removing the causes of failures in a component or system.

decision coverage Version 2

The coverage of decision outcomes.

decision table testing Version 3

A black-box test technique in which test cases are designed to exercise the combinations of conditions and the resulting actions shown in a decision table.

decision testing Version 2

A white-box test technique in which test cases are designed to execute decision outcomes.

defect Version 2

An imperfection or deficiency in a work product where it does not meet its requirements or specifications.

**Reference:** After ISO 24765 **Synonyms:** bug, fault

defect density Version 2

The number of defects per unit size of a work product.

**Reference:** After ISO 24765 **Synonyms:** fault density

See also: automation code defect density

Defect Detection Percentage Version 1

The number of defects found by a test level, divided by the number found by that test level and any other means afterwards.

Abbreviation: DDP

Synonyms: Fault Detection Percentage (FDP)

See also: escaped defect

defect management Version 3

The process of recognizing, recording, classifying, investigating, resolving and disposing of defects.

defect management committee Version 1

A cross-functional team of stakeholders who manage reported defects from initial detection to ultimate resolution (defect removal, defect deferral, or report cancellation). In some cases, the same team as the configuration control board.

Synonyms: defect triage committee

defect report Version 2

Documentation of the occurrence, nature, and status of a defect.

Synonyms: bug report

defect taxonomy Version 2

A list of categories designed to identify and classify defects.

Synonyms: bug taxonomy

See also: defect-based test technique

defect-based test technique Version 2

A test technique in which test cases are developed from what is known about a specific defect type.

Synonyms: defect-based test design technique, defect-based technique

See also: defect taxonomy

definition-use pair Version 2

The association of a definition of a variable with the subsequent use of that variable.

Search results Page: 10 of 40



demilitarized zone Version 1

A physical or logical subnetwork that contains and exposes an organization's external-facing services to an untrusted network, commonly the Internet.

**Abbreviation:** DMZ **See also:** network zone

denial of service Version 1

A security attack that is intended to overload the system with requests such that legitimate requests cannot be serviced.

Abbreviation: DoS

device-based testing Version 1

A type of testing in which test suites are executed on physical or virtual devices.

driver Version 2

A component or tool that temporarily replaces another component and controls or calls a test item in isolation.

Synonyms: test driver

dynamic analysis Version 2

The process of evaluating a component or system based on its behavior during execution.

Reference: After ISO 24765

**dynamic testing**Version 2

Testing that involves the execution of the test item.

Reference: After ISO 29119-1
See also: static testing

effectiveness Version 2

The extent to which correct and complete goals are achieved.

Reference: ISO 9241 See also: efficiency

efficiency Version 3

The degree to which resources are expended in relation to results achieved.

Reference: IREB Glossary

 $\textbf{See also:} \ \textbf{effectiveness}, \ \textbf{performance efficiency}$ 

EFQM model Version 2

A management framework that supports organisations in managing change and improving performance.

Reference: EFQM

Synonyms: European Foundation for Quality Management excellence model, EFQM excellence model

emulator Version 2

Software used during testing that mimics the behavior of hardware.

See also: simulator

encryption Version 1

The process of encoding information so that only authorized parties can retrieve the original information, usually by means of a specific decryption key or process.

end-to-end testing Version 1

A test type in which business processes are tested from start to finish under production-like circumstances.

Synonyms: E2E testing

endurance testing Version 1

Testing to determine the stability of a system under a significant load over a significant period of time within the system's operational context.

Search results Page: 11 of 40



entry criteria Version 2

The set of conditions for officially starting a defined task.

Reference: Gilb and Graham

See also: exit criteria

environment model Version 1

An abstraction of the real environment of a component or system including other components, processes, and environment conditions, in a real-time simulation.

Reference: Wallentowitz

epic Version 1

A large user story that cannot be delivered as defined within a single iteration or is large enough that it can be split into smaller user stories.

Reference: Agile Alliance

equivalence partition Version 3

A 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.

Synonyms: equivalence class

equivalence partitioning Version 3

A black-box test technique in which test conditions are equivalence partitions exercised by one representative member of each partition.

Reference: After ISO 29119-1 Synonyms: partition testing

equivalent manual test effort Version 1

Effort required for running tests manually.

Abbreviation: EMTE

ergonomics testing Version 1

Testing to determine whether a component or system and its input devices are being used properly with correct posture.

**error** Version 1

A human action that produces an incorrect result.

Reference: ISO 24765 Synonyms: mistake

**error guessing** Version 2

A test technique in which tests are derived on the basis of the tester's knowledge of past failures, or general knowledge of failure modes.

Reference: ISO 29119-1

escaped defect Version 2

A defect that was not detected by a testing activity that is supposed to find that defect.

See also: Defect Detection Percentage

ethical hacker Version 1

A security tester using hacker techniques.

exhaustive testing Version 1

A test approach in which the test suite comprises all combinations of input values and preconditions.

Synonyms: complete testing

exit criteria Version 2

The set of conditions for officially completing a defined task.

Reference: After Gilb and Graham

Synonyms: test completion criteria, completion criteria

See also: entry criteria

Search results Page: 12 of 40



expected result Version 2

The observable predicted behavior of a test item under specified conditions based on its test basis.

Reference: After ISO 29119-1

Synonyms: predicted outcome, expected outcome

experience-based test technique

Version 4

A test technique based on the tester's experience, knowledge and intuition.

Synonyms: experience-based test design technique, experience-based technique

experience-based testing Version 1

Testing based on the tester's experience, knowledge and intuition.

Version 1

An informal usability review in which the reviewers are experts. Experts can be usability experts or subject matter experts, or both.

exploratory testing Version 3

An approach to testing in which the testers dynamically design and execute tests based on their knowledge, exploration of the test item and the results of previous tests.

Reference: After ISO 29119-1

expert usability review

See also: test charter

**failed** Version 1

The status of a test result if the actual result does not match the expected result.

**failover** Version 1

The backup operational mode in which the functions of a system that becomes unavailable are assumed by a secondary system.

failure Version 2

An event in which a component or system does not perform a required function within specified limits.

Reference: After ISO 24765

failure mode Version 1

The physical or functional manifestation of a failure.

Reference: ISO 24765

failure mode and effect analysis

A systematic approach to rick identification and analysis of identifying possible modes of failure and attempting to provent their occurrence.

A systematic approach to risk identification and analysis of identifying possible modes of failure and attempting to prevent their occurrence.

**Abbreviation:** FMEA

Synonyms: Software Failure Mode and Effect Analysis

failure rate Version 2

The ratio of the number of failures of a given category to a given unit of measure.

Reference: ISO 24765

false-negative result Version 1

A test result which fails to identify the presence of a defect that is actually present in the test object.

Synonyms: false-pass result

false-positive result Version 1

A test result in which a defect is reported although no such defect actually exists in the test object.

Synonyms: false-fail result

fault injection Version 1

The process of intentionally adding a defect to a component or system to determine whether it can detect and possibly recover from it.

Search results Page: 13 of 40



fault seeding Version 2

The process of intentionally adding defects to a component or system to monitor the rate of detection and removal, and to estimate the number of defects remaining.

Reference: After ISO 24765

Synonyms: bebugging, error seeding

fault tolerance Version 2

The degree to which a component or system operates as intended despite the presence of hardware or software faults.

Reference: After ISO 25010
Synonyms: robustness

fault tree analysis Version 1

A technique for analyzing the causes of failures that uses a hierarchical model of events and their logical relationships.

Abbreviation: FTA

Synonyms: Software Fault Tree Analysis

feature-driven development

An iterative and incremental software development process driven from a client-valued functionality (feature) perspective. Feature-driven

development is mostly used in Agile software development.

See also: Agile software development

field testing Version 1

A type of testing conducted to evaluate the system behavior under productive connectivity conditions in the field.

**finding** Version 1

A result of an evaluation that identifies some important issue, problem, or opportunity.

firewall Version 1

A component or set of components that controls incoming and outgoing network traffic based on predetermined security rules.

**follow-up test case**Version 1

A test case generated by applying a metamorphic relation to a source test case during metamorphic testing.

formal review Version 2

A type of review that follows a defined process with a formally documented output.

Reference: ISO 20246

formative evaluation Version 1

A type of evaluation designed and used to improve the quality of a component or system, especially when it is still being designed.

See also: summative evaluation

functional appropriateness Version 3

The degree to which the functions facilitate the accomplishment of specified tasks and objectives.

Reference: ISO 25010

Synonyms: suitability

functional completeness Version 1

The degree to which the set of functions covers all the specified tasks and user objectives.

Reference: ISO 25010

functional correctness Version 2

The degree to which a component or system provides the correct results with the needed degree of precision.

Reference: After ISO 25010

Synonyms: accuracy

Search results Page: 14 of 40



functional safety Version 1

The absence of unreasonable risk due to hazards caused by malfunctioning behavior of Electric/Electronic(E/E) - Systems.

Reference: ISO 26262 Synonyms: safety

functional suitability Version 2

The degree to which a component or system provides functions that meet stated and implied needs when used under specified conditions.

Reference: After ISO 25010
Synonyms: functionality

See also: interoperability, security

**functional testing**Version 3

Testing performed to evaluate if a component or system satisfies functional requirements.

Reference: After ISO 24765

fuzz testing Version 1

A software testing technique used to discover security vulnerabilities by inputting massive amounts of random data, called fuzz, to the component or system.

Synonyms: fuzzing

generic test automation architecture

Version 1

Representation of the layers, components, and interfaces of a test automation architecture, allowing for a structured and modular approach to implement test automation.

graphical user interface Version 1

A type of interface that allows users to interact with a component or system through graphical icons and visual indicators.

Abbreviation: GUI

GUI testing Version 1

Testing performed by interacting with the software under test via the graphical user interface.

hacker Version 1

A person or organization who is actively involved in security attacks, usually with malicious intent.

See also: attacker, script kiddie

hardware in the loop Version 1

Dynamic testing performed using real hardware with integrated software in a simulated environment.

Abbreviation: HiL

Reference: Automotive SPICE

hashing Version 1

Transformation of a variable length string of characters into a usually shorter fixed-length value or key. Hashed values, or hashes, are commonly used in table or database lookups. Cryptographic hash functions are used to secure data.

See also: salting

heuristic Version 1

A generally recognized rule of thumb that helps to achieve a goal.

heuristic evaluation Version 2

A usability review technique that evaluates a work product by using a set of heuristics.

high-level test case Version 3

A test case with abstract preconditions, input data, expected results, postconditions, and actions (where applicable).

Synonyms: logical test case, abstract test case

See also: low-level test case

Search results Page: 15 of 40



human-centered design Version 1

An approach to design that aims to make software products more usable by focusing on the use of the software products and applying human factors, ergonomics, and usability knowledge and techniques.

Reference: ISO 9241-210

hyperlink Version 1

A pointer within a web page that leads to other web pages.

hypothesis testing Version 1

The validation of a theory and its assumptions using sample data

impact analysis Version 2

The identification of all work products affected by a change, including an estimate of the resources needed to accomplish the change.

Reference: After ISO 24765

incremental development model Version 2

A type of software development lifecycle model in which the component or system is developed through a series of increments.

Reference: After PMBOK

independence of testing Version 1

Separation of responsibilities, which encourages the accomplishment of objective testing.

Reference: After DO-178C

independent test lab Version 1

An organization responsible to test and certify that the software, hardware, firmware, platform, and operating system follow all the jurisdictional rules for each location where the product will be used.

Abbreviation: ITL

informal review Version 3

A type of review that does not follow a defined process and has no formally documented output.

information assurance Version 1

Measures that protect and defend information and information systems by ensuring their availability, integrity, authentication, confidentiality, and non-repudiation. These measures include providing for restoration of information systems by incorporating protection, detection, and reaction capabilities.

Reference: NIST.IR.7298

input data testing Version 1

A test level that focuses on the quality of the data used for training and prediction by ML models.

insider threat Version 1

A security threat originating from within the organization, often by an authorized system user.

insourced testing Version 1

Testing performed by people who are co-located with the project team but are not fellow employees.

**inspection** Version 3

A type of formal review that uses defined team roles and measurement to identify defects in a work product, and improve the review process and the software development process.

Reference: After ISO 20246

See also: peer review

installability Version 2

The degree to which a component or system can be successfully installed and/or uninstalled in a specified environment.

Reference: After ISO 25010

See also: portability

integration testing Version 2

A test level that focuses on interactions between components or systems.

Search results Page: 16 of 40



integrity Version 1

The degree to which a component or system allows only authorized access and modification to a component, a system or data.

Reference: After ISO 25010

interface testing Version 1

A type of integration testing performed to determine whether components or systems pass data and control correctly to one another.

Reference: After ISO 24765

internationalization Version 1

The process of making a system suitable for international user groups.

See also: localization

interoperability Version 2

The degree to which two or more components or systems can exchange information and use the information that has been exchanged.

Reference: After ISO 25010 See also: functional suitability

intrusion detection system Version 1

A system which monitors activities on the 7 layers of the OSI model from network to application level, to detect violations of the security policy.

Abbreviation: IDS

See also: malware scanning

iterative development model Version 1

A type of software development lifecycle model in which the component or system is developed through a series of repeated cycles.

keyword-driven testing Version 2

A scripting technique in which test scripts contain high-level keywords and supporting files that contain low-level scripts that implement those keywords.

Synonyms: action word-driven testing

See also: data-driven testing

**learnability** Version 2

The degree to which a component or system can be used by specified users to achieve specified goals of learning with satisfaction and freedom from risk in a specified context of use.

Reference: After ISO 25010

**level of intrusion** Version 1

The level to which a test object is modified by adjusting it for testability.

level test plan Version 1

A test plan that typically addresses one test level.

See also: test plan

linear scripting Version 1

A simple scripting technique without any control structure in the test scripts.

**load generation** Version 1

The process of simulating a defined set of activities at a specified load to be submitted to a component or system.

load generator Version 1

A tool that generates a load for a system under test.

**load management** Version 1

The control and execution of load generation, and performance monitoring and reporting of the component or system.

load profile Version 1

Documentation defining a designated number of virtual users who process a defined set of transactions in a specified time period that a component or system being tested may experience in production.

Search results Page: 17 of 40



load testing Version 2

A type of performance testing conducted to evaluate the behavior of a component or system under varying loads, usually between anticipated conditions of low, typical, and peak usage.

Reference: After ISO 29119-1

localization Version 1

The process of making a system suitable for a specific user group.

See also: internationalization

low-level test case Version 3

A test case with concrete values for preconditions, input data, expected results, postconditions, and a detailed description of actions (where applicable).

Synonyms: concrete test case
See also: high-level test case

maintainability Version 2

The degree to which a component or system can be modified by the intended maintainers.

Reference: After ISO 25010

See also: analyzability, modifiability, testability

maintenance Version 2

The process of modifying a component or system after delivery to correct defects, improve quality characteristics, or adapt to a changed environment.

Reference: After ISO 24765

maintenance testing Version 1

Testing the changes to an operational system or the impact of a changed environment to an operational system.

malware Version 1

Software that is intended to harm a system or its components.

See also: anti-malware

malware scanning Version 1

Static analysis aiming to detect and remove malicious code received at an interface.

See also: intrusion detection system

management review Version 1

A systematic evaluation of software acquisition, supply, development, operation, or maintenance process, performed by or on behalf of management that monitors progress, determines the status of plans and schedules, confirms requirements and their system allocation, or evaluates the effectiveness of management approaches to achieve fitness for purpose.

Reference: After ISO 24765, IEEE 1028

manufacturing-based quality Version 2

A view of quality measured by the degree that a product or service conforms to its intended design and requirements based on the process used.

Reference: After Garvin

master test plan Version 2

A test plan that is used to coordinate multiple test levels or test types.

See also: test plan

math testing Version 1

Testing to determine the correctness of the pay table implementation, the random number generator results, and the return to player computations.

maturity Version 2

(1) The capability of an organization with respect to the effectiveness and efficiency of its processes and work practices. (2) The degree to which a component or system meets needs for reliability under normal operation.

Reference: ISO 25010

Search results Page: 18 of 40



**MBT** model

Any model used in model-based testing.

mean time between failures

Version 1

Version 1

The average time between consecutive failures of a component or system.

Abbreviation: MTBF

See also: mean time to failure

mean time to failure Version 1

The average time from the start of operation to a failure for a component or system.

**Abbreviation: MTTF** 

See also: mean time between failures

mean time to repair Version 1

The average time a component or system will take to recover from a failure.

Abbreviation: MTTR

measurement Version 1

The process of assigning a number or category to an entity to describe an attribute of that entity.

Reference: After ISO 24765

memory leak Version 2

A memory access failure due to a defect in a program's dynamic store allocation logic that causes it to fail to release memory after it has finished using it.

metamorphic relation Version 1

A description of how a change in the test inputs from the source test case to the follow-up test case affects a change in the expected outputs from the source test case to the follow-up test case.

**Abbreviation:** MR **Reference:** ISO 29119-11

metamorphic testing Version 1

A test technique in which the inputs and expected results are extrapolated from a passing test case using a metamorphic relation.

Abbreviation: MT

method table Version 1

A table containing different test approaches, testing techniques and test types that are required depending on the Automotive Safety Integrity Level (ASIL) and on the context of the test object.

Reference: ISO 26262

methodical test strategy Version 1

A test strategy whereby the test team uses a pre-determined set of test conditions such as a quality standard, a checklist, or a collection of generalized, logical test conditions which may relate to a particular domain, application or type of testing.

metric Version 1

A measurement scale and the method used for measurement.

ML functional performance Version 1

The degree to which an ML model meets ML functional performance criteria.

ML functional performance criteria Version 1

Criteria based on ML functional performance metrics used as a basis for model evaluation, tuning and testing.

ML functional performance metrics

Version 1

A set of measures that relate to the functional correctness of an ML system.

ML model Version 1

An implementation of machine learning (ML) that generates a prediction, classification or recommendation based on input data.

Search results Page: 19 of 40



ML model testing Version 1

A test level that focuses on the ability of an ML model to meet required ML functional performance criteria and non-functional criteria.

model coverage Version 2

The coverage of model elements.

model in the loop Version 1

Dynamic testing performed using a simulation model of the system in a simulated environment.

Abbreviation: MiL

Reference: Automotive SPICE

model-based test strategy Version 1

A test strategy whereby the test team derives testware from models.

model-based testing Version 2

Testing based on or involving models.

Abbreviation: MBT

moderator Version 4

(1) The person responsible for running review meetings. (2) The person who performs a usability test session.

Synonyms: facilitator

modifiability Version 2

Version 2

The degree to which a component or system can be modified without degrading its quality.

Reference: After ISO 25010 Synonyms: changeability See also: maintainability

modified condition/decision coverage

The coverage of all outcomes of the atomic conditions that independently affect the overall decision outcome.

Abbreviation: MC/DC

Synonyms: condition determination coverage, modified multiple condition coverage

modified condition/decision testing

A white-box test technique in which test cases are designed to exercise outcomes of atomic conditions that independently affect a decision

outcome.

Synonyms: condition determination testing, modified multiple condition testing, MC/DC testing

modularity Version 1

The degree to which a system is composed of discrete components such that a change to one component has minimal impact on other components.

Reference: After ISO 25010

monitoring tool Version 2

A software tool or hardware device that runs concurrently with the component or system under test and supervises, records and/or analyzes the behavior of the component or system.

Reference: ISO 24765

multiplayer testing Version 1

Testing to determine if many players can simultaneously interact with the casino game world, with computer-controlled opponents, game servers, and with each other, as expected according to the game design.

multiple condition coverage Version 1

The coverage of all possible combinations of all single condition outcomes within one statement.

Synonyms: branch condition combination coverage, condition combination coverage

multiple condition testing Version 2

A white-box test technique in which test cases are designed to exercise outcome combinations of atomic conditions.

Synonyms: branch condition combination testing, condition combination testing

Search results Page: 20 of 40



**Myers-Briggs Type Indicator** 

Version 1

An indicator of psychological preference representing the different personalities and communication styles of people.

Abbreviation: MBTI

N-switch coverage

Version 1

The coverage of sequences of N+1 transitions.

Reference: Chow

network zone

neuron coverage

Synonyms: Chow's coverage metrics

negative testing

Version 1

Synonyms: invalid testing, dirty testing

neighborhood integration testing

Version 2

A type of integration testing in which all of the nodes that connect to a given node are the basis for the integration testing.

A sub-network with a defined level of trust. For example, the Internet or a public zone would be considered to be untrusted.

See also: demilitarized zone

non-functional testing

Version 1

The coverage of activated neurons in the neural network for a set of tests.

Testing a component or system in a way for which it was not intended to be used.

Version 1

Testing performed to evaluate that a component or system complies with non-functional requirements.

Version 3

Version 1

The degree to which actions or events can be proven to have taken place, so that the actions or events cannot be repudiated later.

Reference: After ISO 25010

offline MBT

Version 1

Model-based test approach whereby test cases are generated into a repository for future execution.

online MBT
Model-based test approach whereby test cases are generated and executed simultaneously.

Version 1

Synonyms: on-the-fly MBT

open-source tool Version 1

A software tool that is available to all potential users in source code form, usually via the internet. Its users are permitted, usually under license, to study, change, improve and, at times, to distribute the software.

Synonyms: open source tool

open–loop-system Version 1

A system in which controlling action or input is independent of the output or changes in output.

Reference: Bakshi

operability Version 2

The degree to which a component or system has attributes that make it easy to operate and control.

Reference: After ISO 25010

See also: usability

operational acceptance testing Version 2

A type of acceptance testing performed to determine if operations and/or systems administration staff can accept a system.

Synonyms: production acceptance testing

Search results Page: 21 of 40



operational profile  An actual or predicted pattern of use of the component or system.	Version 2
operational profiling The process of developing and implementing an operational profile.	Version 1
organizational test strategy A strategy that describes the generic requirements for testing and how to perform testing within an organization.	Version 1
outsourced testing Testing performed by people who are not co-located with the project team and are not fellow employees.	Version 1
pair testing A test approach in which two team members simultaneously collaborate on testing a work product.	Version 1
pairwise integration testing A type of integration testing that targets pairs of components that work together as shown in a call graph.	Version 2
pairwise testing A black-box test technique in which test cases are designed to exercise pairs of parameter-value pairs.  Reference: After ISO 29119-4	Version 2
par sheet testing Testing to determine that the game returns the correct mathematical results to the screen, to the players' accounts, and to the	Version 1 casino account.
pass/fail criteria Decision rules used to determine whether a test item has passed or failed.  Reference: After ISO 29119-1	Version 1
passed The status of a test result if the actual result matches the expected result.	Version 1
password cracking A security attack recovering secret passwords stored in a computer system or transmitted over a network.  Reference: After NIST.IR.7298	Version 1
path A sequence of consecutive edges in a directed graph. Synonyms: control flow path	Version 1
peer review A review performed by others with the same abilities to create the work product.  Reference: After ISO 20246 See also: technical review, inspection, walkthrough	Version 2
penetration testing A testing technique aiming to exploit security vulnerabilities (known or unknown) to gain unauthorized access.	Version 1
performance efficiency The degree to which a component or system uses time, resources and capacity when accomplishing its designated functions.  Reference: After ISO 25010 See also: efficiency	Version 2
performance testing Testing to determine the performance efficiency of a component or system.	Version 2
performance testing tool A test tool that generates load for a designated test item and that measures and records its performance during test execution	Version 1

Search results Page: 22 of 40



perspective-based reading Version 2

A review technique in which a work product is evaluated from the perspective of different stakeholders with the purpose to derive other work products.

Synonyms: perspective-based reviewing

pharming Version 1

A security attack intended to redirect a website's traffic to a fraudulent website without the user's knowledge or consent.

phase containment Version 2

The policy of removing defects in the same phase of the software development lifecycle in which they were introduced.

phishing Version 1

An attempt to acquire personal or sensitive information by masquerading as a trustworthy entity in an electronic communication.

planning poker Version 1

A consensus-based estimation technique, mostly used to estimate effort or relative size of user stories in Agile software development. It is a variation of the Wideband Delphi method using a deck of cards with values representing the units in which the team estimates.

Reference: Mountain Goat Software

player perspective testing Version 1

Testing done by testers from a player's perspective to validate player satisfaction.

playtest Version 1

Ad hoc testing of a game by players to identify failures and gather feedback.

portability Version 2

The degree to which a component or system can be transferred from one hardware, software or other operational or usage environment to another.

Reference: After ISO 25010

See also: adaptability, coexistence, installability, replaceability

post-release testing Version 1

A type of testing to ensure that the release is performed correctly and the application can be deployed.

See also: testing in production

**postcondition** Version 2

The expected state of a test item and its environment at the end of test case execution.

**precondition** Version 2

The required state of a test item and its environment prior to test case execution.

**priority** Version 1

The level of (business) importance assigned to an item, e.g., defect.

PRISMA Version 1

A systematic approach to risk-based testing that creates a product risk matrix.

probe effect Version 2

An unintended change in behavior of a component or system caused by measuring it.

process assessment Version 1

A disciplined evaluation of an organization's software processes against a reference model.

Reference: After ISO 15504

process-compliant test strategy Version 1

A test strategy whereby the test team follows a set of predefined processes, whereby the processes address such items as documentation, the proper identification and use of the test basis and test oracle(s), and the organization of the test team.

Search results Page: 23 of 40



process-driven scripting Version 1

A scripting technique where scripts are structured into scenarios which represent use cases of the software under test. The scripts can be parameterized with test data.

**product risk**Version 2

A risk that impacts the quality of a product.

See also: risk

product-based quality Version 3

A view of quality measured by the degree that well-defined quality characteristics are met.

Reference: After Garvin

project risk Version 2

A risk that impacts project success.

See also: risk

proximity-based testing Version 1

A type of testing to confirm that sensors can detect nearby objects without physical contact.

**pseudo-oracle** Version 1

An independently derived variant of the test item used to generate results, which are compared with the results of the original test item based on the same test inputs.

Reference: ISO 29119-11

quality Version 3

The degree to which a work product satisfies stated and implied needs of its stakeholders.

Reference: After IREB

quality assistance Version 1

An approach to quality management that focuses on a quality culture throughout an organization.

quality assurance Version 2

Activities focused on providing confidence that quality requirements will be fulfilled.

Abbreviation: QA

Reference: After ISO 24765 See also: quality management

quality capability Version 1

The abilities an organization needs to successfully accomplish its quality goals.

See also: testing capability

quality characteristic Version 3

A category of quality attributes that bears on work product quality.

Reference: ISO 24765

 $\textbf{Synonyms:} \ \text{quality attribute, software quality characteristic, software product characteristic}$ 

quality coaching Version 1

The activities focused on helping an agile organization identify, understand, and deal with quality management, business value, flow of work, and customer collaboration.

quality control Version 1

Activities designed to evaluate the quality of a component or system.

Abbreviation: QC

Reference: After ISO 24765

See also: testing

quality culture Version 1

An organizational value system that results in an environment to establish and continually improve quality.

Search results Page: 24 of 40



quality debt Version 1

The implied cost of deferred quality assurance activities.

quality function deployment

Version 1

A facilitated workshop technique that helps determine critical characteristics for new product development.

**Abbreviation:** QFD **Reference:** ISO 24765

quality management Version 1

The process of establishing and directing a quality policy, quality objectives, quality planning, quality control, quality assurance, and quality improvement for an organization.

Reference: After ISO 24765 See also: quality assurance

**quality risk**Version 2

A product risk related to a quality characteristic.

RACI matrix Version 1

A matrix describing the participation by various roles in completing tasks or deliverables for a project or process. It is especially useful in clarifying roles and responsibilities. RACI is an acronym derived from the four key responsibilities most typically used: Responsible, Accountable, Consulted, and Informed.

ramp-down Version 1

A technique for decreasing the load on a system in a measurable and controlled way.

ramp-up Version 1

A technique for increasing the load on a system in a measurable and controlled way.

random testing Version 1

A black-box test technique in which input values are randomly generated based on an operational profile.

reactive test strategy Version 1

A test strategy whereby the test team waits to design and implement tests until the software is received, reacting to the actual system under test.

reactive testing Version 1

Testing that dynamically responds to the behavior of the test object and to test results being obtained.

reconnaissance Version 1

The exploration of a target area aiming to gain information that can be useful for an attack.

Synonyms: footprinting

recoverability Version 2

The degree to which a component or system can recover the data directly affected by an interruption or a failure and re-establish the desired state of the component or system.

Reference: After ISO 25010

See also: reliability

regression testing Version 3

A type of change-related testing to detect whether defects have been introduced or uncovered in unchanged areas of the software.

regression-averse test strategy

Version 1

A test strategy whereby the test team applies various techniques to manage the risk of regression such as functional and/or non-functional regression test automation at one or more levels.

regulatory acceptance testing

Version 3

A type of acceptance testing performed to determine the compliance of the test object.

Search results Page: 25 of 40



reliability Version 2

The degree to which a component or system performs specified functions under specified conditions for a specified period of time.

Reference: After ISO 25010 See also: recoverability

reliability growth model Version 2

A model that shows the growth in reliability over time of a component or system as a result of the defect removal.

remote test lab Version 1

A facility that provides remote access to a test environment.

replaceability Version 2

The degree to which a component or system can replace another specified component or system for the same purpose in the same environment.

Reference: After ISO 25010

See also: portability

requirement Version 2

A provision that contains criteria to be fulfilled.

Reference: ISO 24765

requirements-based testing Version 2

An approach to testing in which test conditions are based on requirements.

resource utilization Version 2

The degree to which the amounts and types of resources used by a component or system, when performing its functions, meet requirements.

Reference: After ISO 25010 Synonyms: storage

retrospective Version 2

A regular event in which team members discuss results, review their practices, and identify ways to improve.

Reference: After SAFe

 $\textbf{Synonyms:} \ project \ retrospective, \ retrospective \ meeting, \ post-project \ meeting$ 

reusability Version 1

The degree to which a work product can be used in more than one system, or in building other work products.

Reference: After ISO 25010

review Version 3

A type of static testing in which a work product or process is evaluated by one or more individuals to detect defects or to provide improvements.

review plan Version 1

A document describing the approach, resources and schedule of intended review activities. It identifies, amongst others: documents and code to be reviewed, review types to be used, participants, as well as entry and exit criteria to be applied in case of formal reviews, and the rationale for their choice. It is a record of the review planning process.

reviewer Version 2

A participant in a review who identifies defects in the work product.

Reference: After ISO 20246 Synonyms: checker, inspector

risk Version 1

A factor that could result in future negative consequences.

See also: product risk, project risk

risk analysis Version 2

The overall process of risk identification and risk assessment.

risk assessment Version 2

The process to examine identified risks and determine the risk level.

Search results Page: 26 of 40



risk control Version 1

The overall process of risk mitigation and risk monitoring.

risk identification Version 2

The process of finding, recognizing and describing risks.

Reference: ISO 31000

risk impact Version 1

The damage that will be caused if the risk becomes an actual outcome or event.

Synonyms: impact

risk level Version 2

The measure of a risk defined by risk impact and risk likelihood.

Synonyms: risk exposure

risk likelihood Version 1

The probability that a risk will become an actual outcome or event.

Synonyms: likelihood

risk management Version 3

The process for handling risks.

Reference: After ISO 24765

risk mitigation Version 2

The process through which decisions are reached and protective measures are implemented for reducing or maintaining risks to specified levels.

risk monitoring Version 1

The activity that checks and reports the status of known risks to stakeholders.

risk-based testing Version 2

Testing in which the management, selection, prioritization, and use of testing activities and resources are based on corresponding risk types and risk levels.

Reference: After ISO 29119-1

role-based review Version 2

A review technique in which a work product is evaluated from the perspective of different stakeholders.

root cause Version 1

A source of a defect such that if it is removed, the occurrence of the defect type is decreased or removed.

Reference: CMMI

root cause analysis Version 2

An analysis technique aimed at identifying the root causes of defects.

Synonyms: causal analysis

S.M.A.R.T. goal methodology Version 1

A methodology whereby objectives are defined very specifically rather than generically. SMART is an acronym derived from the attributes of the objective to be defined: Specific, Measurable, Attainable, Relevant and Timely.

Abbreviation: SMART

safety integrity level Version 1

The level of risk reduction provided by a safety function, related to the frequency and severity of perceived hazards.

Abbreviation: SIL

Reference: After IEC 61508

See also: automotive safety integrity level

salting Version 1

A cryptographic technique that adds random data (salt) to the user data prior to hashing.

See also: hashing

Search results Page: 27 of 40



scalability Version 1 The degree to which a component or system can be adjusted for changing capacity. Reference: After Gerrard scalability testing Version 1 Testing to determine the scalability of the software product. scenario-based review Version 2 A review technique in which a work product is evaluated to determine its ability to address specific scenarios. scribe Version 2 A person who records information at a review meeting. Reference: After ISO 24765 Synonyms: recorder script kiddie Version 1 A person who executes security attacks that have been created by other hackers rather than creating one's own attacks. See also: hacker scripted testing Version 1 Testing (manual or automated) that follows a test script. security Version 3 The degree to which a component or system protects its data and resources against unauthorized access or use and secures unobstructed access and use for its legitimate users. Reference: After ISO 25010 Synonyms: information security See also: functional suitability security attack Version 1 An attempt to gain unauthorized access to a component or system, resources, information, or an attempt to compromise system integrity. Reference: After NIST.IR.7298 security audit Version 1 An audit evaluating an organization's security processes and infrastructure. security policy Version 1 A high-level document describing the principles, approach and major objectives of the organization regarding security. Version 1 security procedure A set of steps required to implement the security policy and the steps to be taken in response to a security incident. security risk Version 1 A quality risk related to security. security testing Version 1 Testing to determine the security of the software product. security vulnerability Version 1 A weakness in the system that could allow for a successful security attack.

sequential development model

Version 2

A type of software development lifecycle model in which a complete system is developed in a linear way of several discrete and successive phases with no overlap between them.

service virtualization Version 1

A technique to enable virtual delivery of services which are deployed, accessed and managed remotely.

Search results Page: 28 of 40



session-based test management

Version 1

A method for measuring and managing session-based testing.

**Abbreviation: SBTM** 

session-based testing Version 1

A test approach in which test activities are planned as test sessions.

severity Version 1

The degree of impact that a defect has on the development or operation of a component or system.

shift left Version 1

An approach to performing testing and quality assurance activities as early as possible in the software development lifecycle.

See also: shift right

shift right Version 1

An approach to testing a system continuously in production.

See also: shift left, testing in production

sign change coverage Version 1

The coverage of neurons activated with both positive and negative activation values in a neural network for a set of tests.

sign-sign coverage Version 1

The coverage achieved if by changing the sign of each neuron it can be shown to individually cause one neuron in the next layer to change sign while all other neurons in the next layer do not change sign for a set of tests.

Reference: After ISO 29119-11

simulator Version 2

A component or system used during testing which behaves or operates like a given component or system.

Reference: After ISO 24765

See also: emulator

Version 1 smoke test

A test suite that covers the main functionality of a component or system to determine whether it works properly before planned testing begins.

Synonyms: sanity test, intake test, confidence test

social engineering Version 1

An attempt to trick someone into revealing information (e.g., a password) that can be used to attack systems or networks.

Reference: NIST.IR.7298

software development lifecycle Version 1

The activities performed at each stage in software development, and how they relate to one another logically and chronologically.

**Abbreviation: SDLC** Synonyms: lifecycle model

software in the loop Version 1

Dynamic testing performed using real software in a simulated environment or with experimental hardware.

Abbreviation: SiL

Reference: Automotive SPICE

software lifecycle Version 1

The period of time that begins when a software product is conceived and ends when the software is no longer available for use. The software lifecycle typically includes a concept phase, requirements phase, design phase, implementation phase, test phase, installation and checkout phase, operation and maintenance phase, and sometimes, retirement phase. Note these phases may overlap or be performed iteratively.

#### software process improvement

A program of activities designed to improve the performance and maturity of the organization's software processes and the results of such a program.

Abbreviation: SPI Reference: After CMMI

Search results Page: 29 of 40



software qualification test

Version 1

Testing performed on completed, integrated software to provide evidence for compliance with software requirements.

Reference: Automotive SPICE

**Software Usability Measurement Inventory** 

Version 2

A questionnaire-based usability testing tool that measures and benchmarks user experience.

**Abbreviation:** SUMI **Reference:** Kirakowski93

source test case Version 1

A test case that passed and is used as the basis of follow-up test cases in metamorphic testing.

specification by example Version 1

A development technique in which the specification is defined by examples.

Abbreviation: SBE

See also: acceptance test-driven development

spike testing Version 1

Testing to determine the ability of a system to recover from sudden bursts of peak loads and return to a steady state.

SQL injection Version 1

A type of code injection in the structured query language (SQL).

Standard-compliant test strategy

A test strategy whereby the test team follows a standard. Standards followed may be valid e.g., for a country (legislation standards), a business

domain (domain standards), or internally (organizational standards).

state transition testing Version 3

A black-box test technique in which test cases are designed to exercise elements of a state transition model.

Synonyms: finite state testing

statement coverage Version 2

The coverage of executable statements.

statement testing Version 2

A white-box test technique in which test cases are designed to execute statements.

static analysis Version 2

The process of evaluating a component or system without executing it, based on its form, structure, content, or documentation.

Reference: After ISO 24765

static testing Version 4

Testing that does not involve the execution of a test item.

See also: dynamic testing

stress testing Version 1

A type of performance testing conducted to evaluate a system or component at or beyond the limits of its anticipated or specified workloads, or with reduced availability of resources such as access to memory or servers.

Reference: ISO 24765

structural coverage Version 1

Coverage measures based on the internal structure of a component or system.

structured scripting Version 1

A scripting technique that builds and utilizes a library of reusable (parts of) scripts.

stub Version 1

A skeletal or special-purpose implementation of a software component, used to develop or test a component that calls or is otherwise dependent on it. It replaces a called component.

Reference: After ISO 24765

Search results Page: 30 of 40



summative evaluation Version 1

A type of evaluation designed and used to gather conclusions about the quality of a component or system, especially when a substantial part of it has completed design.

See also: formative evaluation

system hardening Version 1

The step-by-step process of reducing the security vulnerabilities of a system by applying a security policy and different layers of protection.

system integration testing

Version 4

The integration testing of systems.

system of systems Version 1

Multiple heterogeneous, distributed systems that are embedded in networks at multiple levels and in multiple interconnected domains, addressing large-scale inter-disciplinary common problems and purposes, usually without a common management structure.

Synonyms: multi-system

system qualification test Version 1

Testing performed on the completed, integrated system of software components, hardware components, and mechanics to provide evidence for compliance with system requirements and that the complete system is ready for delivery.

Reference: Automotive SPICE

system testing Version 2

A test level that focuses on verifying that a system as a whole meets specified requirements.

system throughput Version 1

The amount of data passing through a component or system in a given time period.

Reference: After ISO 24765

system under test Version 2

A type of test object that is a system.

Abbreviation: SUT

System Usability Scale Version 1

A simple, ten-item attitude scale giving a global view of subjective assessments of usability.

Abbreviation: SUS

Systematic Test and Evaluation Process

Version 2

A structured testing methodology also used as a content-based model for improving the testing process. It does not require that improvements occur in a specific order.

Abbreviation: STEP

technical review Version 3

A formal review by technical experts that examine the quality of a work product and identify discrepancies from specifications and standards.

See also: peer review

test Version 1

A set of one or more test cases.

test adaptation layer Version 2

The layer in a test automation architecture which provides the necessary code to adapt test scripts on an abstract level to the various components, configuration or interfaces of the SUT.

test analysis Version 2

The activity that identifies test conditions by analyzing the test basis.

test approach Version 3

The manner of implementing testing tasks.

Search results Page: 31 of 40



test architect Version 1

(1) A person who provides guidance and strategic direction for a test organization and for its relationship with other disciplines. (2) A person who defines the way testing is structured for a given system, including topics such as test tools and test data management.

test automation Version 2

The use of software to perform or support test activities.

test automation architecture Version 1

An instantiation of the generic test automation architecture to define the architecture of a test automation solution, i.e., its layers, components, services and interfaces.

test automation engineer Version 1

A person who is responsible for the design, implementation and maintenance of a test automation architecture as well as the technical evolution of the resulting test automation solution.

test automation framework Version 1

A tool that provides an environment for test automation. It usually includes a test harness and test libraries.

test automation manager Version 1

A person who is responsible for the planning and supervision of the development and evolution of a test automation solution.

test automation solution Version 1

A realization/implementation of a test automation architecture, i.e., a combination of components implementing a specific test automation assignment. The components may include commercial off-the-shelf test tools, test automation frameworks, as well as test hardware.

test automation strategy Version 1

A high-level plan to achieve long-term objectives of test automation under given boundary conditions.

test basis Version 2

The body of knowledge used as the basis for test analysis and design.

Reference: After TMap

test case Version 2

A set of preconditions, inputs, actions (where applicable), expected results and postconditions, developed based on test conditions.

See also: test step

test case explosion Version 1

The disproportionate growth of the number of test cases with growing size of the test basis, when using a certain test design technique. Test case explosion may also happen when applying the test design technique systematically for the first time.

test charter Version 3

Documentation of the goal or objective for a test session.

Synonyms: charter

See also: exploratory testing

test closure Version 1

During the test closure phase of a test process data is collected from completed activities to consolidate experience, testware, facts and numbers. The test closure phase consists of finalizing and archiving the testware and evaluating the test process, including preparation of a test evaluation report.

test completion Version 2

The activity that makes testware available for later use, leaves test environments in a satisfactory condition and communicates the results of testing to relevant stakeholders.

test completion report Version 3

A type of test report produced at completion milestones that provides an evaluation of the corresponding test items against exit criteria.

Synonyms: test summary report

Search results Page: 32 of 40



test condition Version 3

A testable aspect of a component or system identified as a basis for testing.

Reference: After ISO 29119-1

Synonyms: test situation, test requirement

test control Version 2

The activity that develops and applies corrective actions to get a test project on track when it deviates from what was planned.

See also: test management

test cycle Version 1

An instance of the test process against a single identifiable version of the test object.

test data Version 3

Data needed for test execution.

Synonyms: test dataset

test data preparation Version 1

The activity to select data from existing databases or create, generate, manipulate and edit data for testing.

test definition layer Version 1

The layer in a generic test automation architecture which supports test implementation by supporting the definition of test suites and/or test cases, e.g., by offering templates or guidelines.

test design Version 3

The activity that derives and specifies test cases from test conditions.

test director Version 1

A senior manager who manages test managers.

See also: test manager

test environment Version 1

An environment containing hardware, instrumentation, simulators, software tools, and other support elements needed to conduct a test.

Reference: ISO 24765

Synonyms: test bed, test rig

test estimation Version 2

An approximation related to various aspects of testing.

test execution Version 2

The activity that runs a test on a component or system producing actual results.

test execution automation Version 1

The use of software, e.g., capture/playback tools, to control the execution of tests, the comparison of actual results to expected results, the setting up of test preconditions, and other test control and reporting functions.

test execution layer Version 1

The layer in a generic test automation architecture which supports the execution of test suites and/or test cases.

test execution schedule Version 2

A schedule for the execution of test suites within a test cycle.

test execution tool Version 1

A test tool that executes tests against a designated test item and evaluates the outcomes against expected results and postconditions.

test generation layer Version 1

The layer in a generic test automation architecture which supports manual or automated design of test suites and/or test cases.

test harness Version 2

A collection of stubs and drivers needed to execute a test suite

Search results Page: 33 of 40



test hook Version 1

A customized software interface that enables automated testing of a test object.

test implementation Version 2

The activity that prepares the testware needed for test execution based on test analysis and design.

test improvement plan Version 1

A plan for achieving organizational test process improvement objectives based on a thorough understanding of the current strengths and weaknesses of the organization's test processes and test process assets.

Reference: After CMMI

test infrastructure Version 1

The artifacts needed to perform testing, consisting of test environments, test tools, office environment and procedures.

test item Version 2

A part of a test object used in the test process.

See also: test object

test leader Version 1

On large projects, the person who reports to the test manager and is responsible for project management of a particular test level or a particular set of testing activities.

Synonyms: lead tester
See also: test manager

test level Version 2

A specific instantiation of a test process.

Synonyms: test stage

test log Version 1

A chronological record of relevant details about the execution of tests.

Reference: ISO 24765

Synonyms: test record, test run log

test logging Version 2

The activity of creating a test log.

Synonyms: test recording

test management Version 2

The process of planning, scheduling, estimating, monitoring, reporting, controlling, and completing test activities.

Reference: ISO 29119-1

See also: test control, test monitoring

test management tool Version 2

A tool that supports test management.

test manager Version 2

The person responsible for project management of testing activities, resources, and evaluation of a test object.

See also: test director, test leader, Agile test leader

Test Maturity Model integration Version 1

A five-level staged framework for test process improvement, related to the Capability Maturity Model Integration (CMMI), that describes the key elements of an effective test process.

Abbreviation: TMMi

test mission Version 1

The purpose of testing for an organization, often documented as part of the test policy.

See also: test policy

test model Version 1

A model describing testware that is used for testing a component or a system under test.

Search results Page: 34 of 40



test monitoring Version 3

The activity that checks the status of testing activities, identifies any variances from planned or expected, and reports status to stakeholders.

See also: test management

test object Version 2

The work product to be tested.

See also: test item

test objective Version 3

The purpose for testing.

Synonyms: test goal

test oracle Version 2

A source to determine an expected result to compare with the actual result of the system under test.

Reference: After Adrion
Synonyms: oracle

test plan Version 2

Documentation describing the test objectives to be achieved and the means and the schedule for achieving them, organized to coordinate testing activities.

Reference: After ISO 29119-1

See also: master test plan, level test plan, test scope

test planning Version 1

The activity of establishing or updating a test plan.

test point analysis Version 1

A formula-based test estimation technique based on function point analysis.

**Abbreviation:** TPA **Reference:** TMap

test policy Version 1

A high-level document describing the principles, approach and major objectives of the organization regarding testing.

Synonyms: organizational test policy

See also: test mission

test procedure Version 1

A sequence of test cases in execution order, and any associated actions that may be required to set up the initial preconditions and any wrap up activities post execution.

Reference: ISO 29119-1

test process Version 2

The set of interrelated activities comprising of test planning, test monitoring and control, test analysis, test design, test implementation, test execution, and test completion.

test process group Version 2

A collection of specialists who facilitate the definition, maintenance, and improvement of the test processes used by an organization.

**Abbreviation:** TPG **Reference:** After CMMI

test process improvement Version 1

Version 2

A program of activities undertaken to improve the performance and maturity of the organization's test processes.

Reference: After CMMI

test process improvement manifesto

A statement that echoes the Agile manifesto, and defines values for improving the test process.

Reference: Veenendaal08

Search results Page: 35 of 40



test process improver A person implementing improvements in the test process based on a test improvement plan.	Version 1
test progress report  A type of periodic test report that includes the progress of test activities against a baseline, risks, and alternatives requiring a decision.  Synonyms: test status report	Version 4
test pyramid A graphical model representing the relationship of the amount of testing per level, with more at the bottom than at the top.	Version 1
test report  Documentation summarizing test activities and results.	Version 1
test reporting Collecting and analyzing data from testing activities and subsequently consolidating the data in a report to inform stakeholders.	Version 1
test result The consequence/outcome of the execution of a test.  Synonyms: outcome, test outcome, result	Version 1
test run The execution of a test suite on a specific version of the test object.	Version 1
test scope A description of the test object and its features to be tested. See also: test plan	Version 1
test script A sequence of instructions for the execution of a test.	Version 2
test selection criteria  The criteria used to guide the generation of test cases or to select test cases in order to limit the size of a test.	Version 1
test session An uninterrupted period of time spent in executing tests.	Version 1
test specification The complete documentation of the test design, test cases, and test scripts for a specific test item. Reference: After ISO 29119-1	Version 2
test step A single interaction between an actor and the test object consisting of an input, an action, and an expected result. See also: test case	Version 1
test strategy A description of how to perform testing to reach test objectives under given circumstances.	Version 4
test suite A set of test scripts or test procedures to be executed in a specific test run.  Synonyms: test set, test case suite	Version 3
test technique A procedure used to define test conditions, design test cases, and specify test data.  Synonyms: test design technique	Version 3
test type A group of test activities based on specific test objectives aimed at specific characteristics of a component or system.  Reference: After TMap	Version 2

Search results Page: 36 of 40



test-driven development Version 2

A software development technique in which the test cases are developed, automated and then the software is developed incrementally to pass those test cases.

Abbreviation: TDD

See also: test-first approach

test-first approach Version 1

An approach to software development in which the test cases are designed and implemented before the associated component or system is developed.

See also: test-driven development

testability Version 3

The degree to which test conditions can be established for a component or system, and tests can be performed to determine whether those test conditions have been met.

Reference: After ISO 25010 See also: maintainability

tester Version 2

A person who performs testing.

testing Version 3

The process within the software development lifecycle that evaluates the quality of a component or system and related work products.

See also: quality control

testing capability Version 1

The abilities an organization needs to successfully accomplish its desired test outcomes.

See also: quality capability

testing in production Version 1

A test type performed in the production environment with live data.

See also: post-release testing, shift right

testing quadrants Version 1

A classification model of test types/test levels in four quadrants, relating them to two dimensions of test objectives: supporting the product team versus critiquing the product, and technology-facing versus business-facing.

**testware** Version 2

Work products produced during the test process for use in planning, designing, executing, evaluating and reporting on testing.

Reference: After ISO 29119-1

think aloud usability testing Version 1

A usability testing technique where test participants share their thoughts with the moderator and observers by thinking aloud while they solve usability test tasks. Think aloud is useful to understand the test participant.

think time Version 1

The amount of time required by a user to determine and execute the next action in a sequence of actions.

threshold coverage Version 1

The coverage of neurons exceeding a threshold activation value in a neural network for a set of tests.

time behavior Version 1

The degree to which a component or system can perform its required functions within required response times, processing times and throughput rates.

Reference: After ISO 25010

Total Quality Management Version 2

An organization-wide management approach to quality based on employee participation to achieve long-term success through customer satisfaction.

Abbreviation: TQM
Reference: After ISO 24765

Search results Page: 37 of 40



tour Version 1

A set of exploratory tests organized around a special focus.

TPI Next Version 1

A continuous business-driven framework for test process improvement that describes the key elements of an effective and efficient test process.

traceability Version 3

The ability to establish explicit relationships between related work products or items within work products.

Reference: IREB

traceability matrix Version 1

A two-dimensional table, which correlates two entities (e.g., requirements and test cases). The table allows tracing back and forth the links of one entity to the other, thus enabling the determination of coverage achieved and the assessment of impact of proposed changes.

transcendent quality Version 2

A view of quality based on the perception and feeling of individuals.

Reference: After Garvin

unit test framework Version 1

A tool that provides an environment for unit or component testing in which a component can be tested in isolation or with suitable stubs and drivers. It also provides other support for the developer, such as debugging capabilities.

Reference: Graham

**usability** Version 3

The degree to which a component or system can be used by specified users to achieve specified goals in a specified context of use.

Reference: After ISO 25010

See also: user interface aesthetics, operability, appropriateness recognizability

usability evaluation Version 1

A process through which information about the usability of a system is gathered in order to improve the system (known as formative evaluation) or to assess the merit or worth of a system (known as summative evaluation).

usability lab Version 1

A test facility in which unintrusive observation of participant reactions and responses to software takes place.

usability requirement Version 1

A requirement on the usability of a component or system.

usability test participant Version 1

A representative user who solves typical tasks in a usability test.

usability test script Version 1

A document specifying a sequence of actions for the execution of a usability test. It is used by the moderator to keep track of briefing and presession interview questions, usability test tasks, and post-session interview questions.

usability test session Version 1

A test session in usability testing in which a usability test participant is executing tests, moderated by a moderator and observed by a number of observers.

**usability test task**Version

A usability test execution activity specified by the moderator that needs to be accomplished by a usability test participant within a given period of time.

usability testing Version 2

Testing to evaluate the degree to which the system can be used by specified users with effectiveness, efficiency and satisfaction in a specified context of use.

Reference: After ISO 25010

Search results Page: 38 of 40



use case testing Version 3

A black-box test technique in which test cases are designed to exercise use case behaviors.

Synonyms: user scenario testing, scenario testing

user acceptance testing Version 4

A type of acceptance testing performed to determine if intended users accept the system.

Abbreviation: UAT

See also: acceptance testing

user error protection Version 1

The degree to which a component or system protects users against making errors.

Reference: After ISO 25010

user experience Version 1

A person's perceptions and responses resulting from the use or anticipated use of a software product.

Reference: ISO 9241-210

user interface Version 1

All components of a system that provide information and controls for the user to accomplish specific tasks with the system.

user interface aesthetics Version 2

The degree to which a user interface enables pleasing and satisfying interaction for the user.

Reference: ISO 25010

Synonyms: attractiveness

See also: usability

user interface guideline Version 1

A low-level, specific rule or recommendation for user interface design that leaves little room for interpretation so designers implement it similarly. It is often used to ensure consistency in the appearance and behavior of the user interface of the systems produced by an organization.

user story Version 3

A user or business requirement consisting of one sentence expressed in the everyday or business language which is capturing the functionality a user needs, the reason behind it, any non-functional criteria, and also including acceptance criteria.

See also: user story testing

**user story testing** Version 2

A black-box test technique in which test conditions are the acceptance criteria of user stories.

See also: user story

user survey Version 1

A usability evaluation whereby a representative sample of users are asked to report subjective evaluation into a questionnaire based on their experience in using a component or system.

user-agent based testing Version 1

A type of testing in which a test client is used to switch the user agent string and identify itself as a different client while executing test suites.

user-based quality Version 2

A view of quality measured by the degree that the needs, wants, and desires of a user are met.

Reference: After Garvin

V-model Version 2

A sequential software development lifecycle model describing a one-for-one relationship between major phases of software development from business requirements specification to delivery, and corresponding test levels from acceptance testing to component testing.

validation Version 2

Confirmation by examination that a work product matches a stakeholder's needs.

Reference: After IREB

Search results Page: 39 of 40



value change coverage Version 1

The coverage of neurons activated where their activation values differ by more than a change amount in the neural network for a set of tests.

value-based quality Version 2

A view of quality measured by the ratio of the cost to the value received from a product or service.

Reference: After Garvin

verification Version 1

Confirmation by examination and through provision of objective evidence that specified requirements have been fulfilled.

Reference: ISO 9000

virtual test environment Version 1

A test environment in which one or more parts are digitally simulated.

Reference: ISO 29119-11

virtual user Version 1

A simulation of activities performed according to a user operational profile.

visual testing Version 1

Testing that uses image recognition to interact with GUI objects.

Reference: After ISO 29119-11

vulnerability scanner Version 1

A static analyzer that is used to detect particular security vulnerabilities in the code.

walkthrough Version 3

A type of review in which an author leads members of the review through a work product and the members ask questions and make comments about possible issues.

Reference: After ISO 20246

Synonyms: structured walkthrough

See also: peer review

## Web Content Accessibility Guidelines

Version 1

A part of a series of web accessibility guidelines published by the Web Accessibility Initiative (WAI) of the World Wide Web Consortium (W3C), the main international standards organization for the internet. They consist of a set of guidelines for making content accessible, primarily for people with disabilities.

Abbreviation: WCAG

## **Website Analysis and Measurement Inventory**

Version 2

A commercial website analysis service providing a questionnaire for measuring user experience and assessing delivery of business goals online.

Abbreviation: WAMMI

white-box test technique Version 3

A test technique only based on the internal structure of a component or system.

Synonyms: white-box test design technique, structure-based test technique

white-box testing Version 1

Testing based on an analysis of the internal structure of the component or system.

Synonyms: clear-box testing, code-based testing, glass-box testing, logic-coverage testing, logic-driven testing, structural testing, structure-based testing

Wideband Delphi Version 1

An expert-based test estimation technique that aims at making an accurate estimation using the collective wisdom of the team members.

wild pointer Version 1

A pointer that references a location that is out of scope for that pointer or that does not exist.

XiL test environment Version 1

A generalized term for dynamic testing in different virtual test environments.

Abbreviation: XiL

Search results Page: 40 of 40