General Test Automation Architecture

Test Generation Layer	The layer in a generic test automation architecture which supports manual or automated design of test suites and/or test cases
Test Definition Layer	The layer in a generic test automation architecture which supports test implementation by supporting the definition of the test suites and/or test cases e.g naming standards,test case format etc
Test Execution Layer	The layer in a generic test automation architecture which supports the execution of the test suites and/or test cases
Test Adaptation Layer	The layer in a generic test automation architecture which provides the necessory code to adapt test scripts on an abstract level to the various components, configuration or interfaces of the SUT

Key Test Items

API testing	Testing performed by submitting commands to the software under test using programming interfaces of the application directly
Authorization	Permission given to a user or process to access resources
Automated Testware	Testware used automated testing,such as tool scripts
Automation Code Defect Density	Defect Density of a component of the test automation code
Coverage	The degree, expressed as a percentage,to which a specified coverage item has been exercised by a test suite
Driver	A software component or test tool that replaces a component that takes care of the control and/or the calling of a component or system
Equivalent Manual Test Effort (EMTE)	Effort required for running tests manually

Key Test Items (cont)

GUI	Graphical User Interfaces

Test Automation

Test Automation	The use of software to perform or support test activities e.g test management, test design, test execution, results checking and result anlaysis
Test Automation Architecture	An instantiation of the generic test automation architecture to define the architecture of a test automation solution ie., its layers, components, services and interfaces
Test Automation Engineer	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	A tool that provides an environment for test automation. It usually includes a test harness and test libraries
Test Automation Manager	A person who is responsible for the planning and supervision of the development and evolution of the test automation solution
Test Automation Solution	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	A high-level plan to achieve long term objectives of test automation under given boundary conditions

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Risk

Risk	A factor could result in future negative consequences
Risk Assessment	The process of identifying and subsequently analysing the identified project or product risk to determine its level of risk, typically by assigning likelihood and impact ratings
Risk Mitigation	The process through which decisions are reached and protective measures are implemented for reducing risks to, or maintaining risks within, specified levels

Key Terms

API testing	Testing performed by submitting commands to the software under test using programming interfaces of the application directly
Authorization	Permission given to a user or process to access resources
Automated Testware	Testware used in automated testing, such as tool scripts
Automation Code Defect Density	Defect density of a component of the test automation code
Coverage	The degree, expressed as a percentage,to which a specified coverage item has been exercised by a test suite
Driver	A software component or test tool that replaces a component that takes care of the control and/or the calling of a component of a system
Equivalent Manual Test Effort (EMTE)	Effort required for running tests manually
GUI	Acronym of Graphical User Interface
Level of Intrusion	The level to which a test object is modified by adjusting it for testability

Key Terms (cont)

Maintainability	The ease with which a software product can be modified to correct defects, modified to meet new requirements, modified to make future maintenance easier, or adapted to a changed environment
Maintenance	Modification of a software product after delivery to correct defects, to improve performance or other attributes, or to adapt the product to a modified environment
Metric	A measurement scale and the method used for measurement

Frameworks

Data Driven Testing	A scripting technique that stores test input and expected results in a table or spreadsheet, so that a single control script can execute all of the tests in the table. Data-driven testing is often used to support the application of the test execution tools such as capture/playback tools.
Keyword Driven Testing	A scripting technique that uses data files to certain not only test data and expected results, but also keywords related to the application being tested. The keywords are interpreted by special supporting scripts that are called by the control script for the test.
Model Based Testing	Testing based on or involving models

Useful Types of Testing

CLI Testing	Testing performed by submitting commands to the software under test using a dedicated command line interface
Confirmation Testing	Testing that runs test cases that failed the last time they were run, in order to verify the success of corrective actions

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Useful Types of Testing (cont)

GUI Testing	Testing performed by interacting with the software under test via the graphical user interface
Regression Testing	Testing of a previously tested program following modification to ensure that defects have not been introduced or uncovered in unchanged areas of the software, as a result of the changes made. It is performed when the software or its environment is changed

Useful Types of Scripting

Linear Scripting	A simple scripting techniques without any control structure in the test scripts
Structured Scripting	A scripting technique that builds and utilizes a library of reusable (part of scripts)
Process Driven Scripting	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

Test Items

Test Case Result	The final verdict on the execution of a test and its outcomes, such as pass,fail, or error. The result or error is used for situations where it is not clear whether the problem is in the test object
Test Execution Automation	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 Tools	A type of test tool that is able to execute other software using an automated test script e.g., capture/playback

Test Items (cont)

Test Hook	A customized software interface that enables automated testing of the test object
Test Logging	The process of recording information about tests executed into a test log
Test Management Tool	A tool that provides support to the test management and control part of a test process. It often has several capabilities, such as testware management, scheduling of tests, the logging of results, progress tracking, incident management and test reporting
Test Reporting	Collecting and analysing data from testing activities and subsequently consolidating the data in a report to inform stakeholders
Test Script	Commonly used to refer to a test procedure specification, especially an automated one
Testability	The capability of the software product to enable modified software to be tested
Testware	Artifacts produced during the test process required to plan,design,and execute tests, such as documentation, scripts, inputs, expected results, setup and clearup procedures, files ,databases, environment, and any additional software or utilities used in testing
Traceability Matrix	A two-dimensional table which correlates two entities (e.g requirements and test cases). The table allows tracking 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

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Test Items (cont)

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

Sample Questions and Answers

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