Questions and Answers Related With the Success of Practical Software Testing

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Abstract

Software testing raises a number of practical questions, the answers to which influence the efficiency, strategy, and acceptance of software projects. This presentation selects some of these questions and answers them in detail, including:

- How to motivate software testing?
- Who is responsible for software testing?
- Is it useful to have specialists for testing or even external advisers?
- What is the value of the ISTQB certification for professionals?
- What can we learn from testing in other engineering fields?
- How to support software testing by tools?
- Why is the question "Which is the 'best' software tool" the wrong one?
- What are the detailed activities of software testing?
- What is the fundamental difference between test cases and test data?
- What software testing models exist, and how are they related?
- Testing approaches: their pros and cons, and what are the consequences?
- Are there algorithms for deriving test cases from requirements or from program code?
- Why is white-box testing preferred in the industry despite its inherent shortcomings?
- Although it is the better conceptual choice (test cases are derived from requirements), there is a fundamental disadvantage to functional testing – why?
- In which sense are graphical representations as an intermediate step necessary in both white-box testing and black box testing?
- Which quality criteria of software can we test: correctness, efficiency, scalability …?
- Can we measure the quality of testing?
- How can we prove that we have tested properly?
- What terms related to software testing should we know: e.g. validation suite, captureand-replay, regression testing, classification tree, control flow graph …?
- Are there standards concerning software testing?
- What are the main software testing knowledge areas of the latest SWEBOK 2024 version (v4.0)?
- Why is it more difficult to train software testing than programming in student education?

Keywords

Software testing, practical software testing

Declaration on Generative AI

The author has not employed any Generative AI tools.

SQAMIA 2025: Workshop on Software Quality, Analysis, Monitoring, Improvement, and Applications, September 10–12, 2025, Maribor, Slovenia

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