

THEORETICAL EXERCISE ANSWERS

1. Briefly explain the difference between a test case and a user story.

A user story may consist of many use cases. It describes a piece of functionality from the user's perspective.

A test case describes a set of actions executed on a system to determine if it satisfies the software requirements and functions correctly.

2. Considering a Continuous Integration environment, when should the execution of automated tests occur?

Execution of automated tests should occur as quickly as possible in continuous integration environments. A with a well-built automated test suite eliminates most problems because the team will quickly know a recent change caused a defect somewhere. If the team analyzes the issue when they receive an alert, they can take much quicker action than if they discovered the bug later. Early detection can significantly reduce how much time and effort your developers and testers spend on an issue.

3. Explain the STLC?

Software Testing Life Cycle (STLC) is a sequence of specific activities conducted during the testing process to ensure software quality goals are met.

The STLC has several interconnected phases. These phases are sequential and are called:

1. **Requirement Analysis:** Requirements analysis is one of the most important phases because this is when you can fix project flaws almost completely free of charge.
2. **Test Planning:** A test plan is formed in this phase
3. **Test Case Development:** Test development implies using manual and automated testing to achieve full coverage of the software's functionality, with the process being based on the requirements set up beforehand.
4. **Test Environment Setup:** The test plan makes it clear which test environment should be used.

5. **Test Execution:** Tests are performed based on ready-made test documentation and a correctly configured test environment.
6. **Test Cycle Closure:** The final generation of testing reports for the client is the last phase of the STLC.

4. When is the most effective time to involve a software quality engineer in the SDLC?

A Software Quality Engineer is integrated into all development stages, and it is used even after the post-release stage. Software Quality engineers are uniquely placed to have the most overall knowledge of how a product works from a user's perspective and understand the technical details of what's going on behind the scenes to improve the user experience.

Software Quality engineers have a clear overview of the entire SDLC process and can point out inefficiencies and gaps.

5. For the practical exercise, what percentage of automation vs manual testing would be ideal?

100% automation for the practical exercise would be ideal.

Automated tests can only cover the areas that have test scenarios written for them. Adding to that, the application programming interface or API testing is part of automation testing, and the obvious automated test script.

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