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Non-Functional Testing

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Overview

Non-functional testing aims to identify issues with the required operation objectives. In contrast to functional testing, non-function requirements focus on system readiness rather than specific behaviors. These objectives include things like maintainability or ease of use, the goal is to reduce risk or costs. Given the difficulty of carrying out certain Non-functional tests manually, there is a wide range of tools that allow testers to automate some of the more unfeasible.

Non-functional Testing

Performance Testing

Performance testing is used to understand system capability in areas such as stability, responsiveness, or capacity. A variety of different practices are applied to understand performance aspects, notably, these include the following.

Load Testing

Performed to assess system competence under a specific load. Examples of objectives might include response time, geo-behavior, quality of service, or sustainability.

Spike Testing

A spike test is carried out to validate the performance characteristics when the system under test is subjected to a load that may repeatedly increase beyond anticipated production operations for short periods of time.

Soak Testing

Soak testing is used to estimate the overall performance of the system under expected loads. Tests could be used to anticipate results for system loads larger than test-practicable, this is done by reducing the hours or users whilst carrying out tests on the system.

Stress Testing

Stress testing is testing that checks the upper limits of your system using extreme loads. This identifies any issues with capability, and how the system recovers whilst returning to normal usage.

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Compatibility Testing

Compatibility testing is a non-functional testing conducted on the application to evaluate the application's compatibility within different environments. It can be of two types - forward compatibility testing and backward compatibility testing.

Usability Testing

Usability testing is performed to quantify the effort required by the end-user to navigate, learn, or be productive on the system. Another aspect of this type of testing ought to include methods to understand the user's attitude toward the system.

Scalability Testing

Scalability testing, as the name suggests is used to identify points of failure in the system as the number of users increases. Estimations of users access over a period of years can be difficult to identify, therefore; tests should be carried out to ensure the capability of the system should the volume increase over time.

Localization Testing

This type of testing is used to verify the quality of cultural or linguistic aspects of the application. It's often the case that a product designed for a specific location is to be reshaped into one designed for a foreign market. When this occurs; efforts should be made to validate the customization contains appropriate content

Internationalization Testing

Much like the above Localization Testing, Internationalization aims to confirm that a system is constant across multiple regions and cultures.

Tutorial

There is no tutorial for this module.

Exercises

Research one of the above topics in detail so that you're able to explain the differences, issues, or best practices when carrying out that type of testing.