Assignment 2

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Non-Functional Testing

Introduction:

Software testing is the process of reviewing and validating that a software product or application accomplishes what it is designed to do. The advantages of testing include bug prevention, lower development costs, and improved performance. Software testing has a great significance in determining the quality of the software. There two main testing types functional and non-functional testing.

Functional testing is a sort of software testing that evaluates the software system against functional requirements/specifications. The aim of functional tests is to test each function of the software program by giving acceptable input and checking the output against the Functional requirements. Non-functional testing is a sort of software testing that examines a software application's non-functional features (performance, usability, dependability, and so on). It is intended to assess a system's readiness based on nonfunctional criteria that are never addressed by functional testing. The types of non-functional testing are:

Performance testing	Stress Testing	Scalability Testing	Portability Testing
Localization Testing	Fail over Testing	Volume Testing	Efficiency Testing
Load Testing	Compatibility Testing	Security Testing	Reliability Testing
Fail over Testing	Usability Testing	Disaster Recovery Testing	Baseline Testing
Compatibility Testing	Stress Testing	Compliance Testing	Endurance Testing
Usability Testing	Maintainability Testing	Portability Testing	Documentation Testing
Recovery Testing	Internationalization Testing		

Non-functional testing:

[1] So according to author non functional is as important as functional testing. The functional testing focuses on the internal function of a software. Non- functional test put the software under external environment pressure. Non-functional testing is used to collect and provide measurement and metrics for internal research and development. Non-functional testing provides in-depth information of product behavior and technologies employed. It aids in lowering the risk of software manufacturing and associated expenditures. The factor that are considered as external environment are performance, Efficiency, Reliability, Security, portability and accountability. Nonfunctional testing mainly checks the software against the pressure when used by external world. They check behavior of t software when the number of user increases or when a software is accessed simultaneously by multiple users. This test even check whether there is a failure how will the software respond or when software is under malicious attack what will be the behavior of software. This testing also checks behavior of software when used in different operating system and different devices. Why Nonfunctional testing necessary because it gives higher level of security is offered. A crucial component that keeps a system safe from Cyber attacks is security. It guarantees the system's capacity for loading, enabling any number of concurrent users. The system performs better as a result. There is no need to rewrite test cases because they are never altered. In comparison to other testing procedures, there is a smaller overall time commitment.

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How to collect testing information:

[2] The author defines Non-functional testing is a sort of software testing used to evaluate a software application's performance, usability, dependability, and other non-functional characteristics. It is intended to test a system's readiness according to nonfunctional criteria that functional testing never takes into account. Main objective of this testing is to boost the product's mobility, maintainability, efficiency, and usability, reduces the production risk and expense linked to the product's non-functional features. Improve the installation, configuration, execution, management, and monitoring of the product. Measurements and metrics should be gathered and produced for internal study and development and the knowledge of current technology and product behavior should be improved. The motive of non functional testing according to author is it should be quantifiable. It is doubtful that exact figures will be known at the beginning of the requirement process. The parameters considered are same as the parameters considered by first author. [3]This author has showed significance of nonfunctional testing with an example of Booking online railway tickets. Non-functional requirements also account for user behavior when a lot of users are simultaneously using the product. The servers are frequently busy or unavailable due to a high volume of traffic (i.e. more people are using it at the same time).The motive for nonfunctional testing is to improve user experience and usability to a greater level, which will in turn have a stronger impact on the software's quality. He has shared the way non functional testing should be captured using user/Technical Stories, In Acceptance criteria, In Artifact. It is crucial to properly establish the testing strategy before beginning non-functional testing to ensure thorough testing. To conduct these tests, a variety of instruments are on the market, including Load Runner, RPT, etc. This testing is crucial to the success of an application and the development of strong client relationships, therefore it must not be disregarded. Without this, software testing would not be regarded complete. This is one of the key components of software testing. Non-functional testing elements can either be included in the test plan or a separate method can be developed for it. The objective is to adequately address the software's non-functional aspects in both scenarios.

Conclusion:

One of the essential steps in creating a successful and user-friendly program is nonfunctional testing. Non-functional testing is centered on the behavior of the software in various scenarios rather than on the architecture of the software. Performance is the factor that is taken into account most generally. This is put to the test when a huge number of users are simultaneously accessing the software. This testing will also aid in identifying the software's shortcomings and quality. The parameters might vary depending on the situation, but the most popular ones are portability, usability, and security. When the software is finished being built or on the UAT server, non-functional testing can be done. The disadvantage is that this testing must be performed every time software is upgraded, which will raise the price of software. Although it could be more expensive, this testing is more important and shouldn't be overlooked when creating software.

References:

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