Software Testing

1. What is Software Testing?

**“Software Testing** is a method to check whether the actual software product matches expected requirements and ensure that the software product is [defect](https://www.guru99.com/defect-management-process.html)free. It involves executing software/system components using manual or automated tools to evaluate one or more properties of interest. Software testing aims to identify errors, gaps, or missing requirements in contrast to actual needs.”

1. Types of Software Testing
2. Functional Testing

* Unit Testing
* Integration Testing
* System Testing
* Acceptance Testing

1. Non-Functional Testing

* Security Testing
* Performance Testing
* Usability Testing
* Compatibility Testing

Diagram

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Unit Testing:

* Unit tests are superficial and close to the source of an application, and they test individual methods and functions of your software's classes, components, or modules.

Integration Testing:

* Integration tests verify that your application's different modules or services work well together.

System Testing:

* System testing compiles and tests your software as a whole, evaluating the functionality, security, and portability.

Acceptance Testing:

* Acceptance tests help us confirm that the system satisfies the requirements of the business. The entire application has to be running for these tests since they focus on replicating user behavior. Moreover, they can further measure the system's performance and reject changes if specific goals are not met.

Security Testing:

* [Security Testing](https://www.softwaretestinghelp.com/how-to-test-application-security-web-and-desktop-application-security-testing-techniques/) assesses if the software, application, or website is secure from internal or external threats. This measures the software’s protection against malicious programs and viruses and the safeness and robustness of the authorization and authentication processes. It also evaluates how the software responds to hacker attacks and malicious programs and how it maintains data security after such an event.

Performance Testing:

* Performance tests analyze the system’s performance under a particular workload, which allows us to gauge the reliability, speed, scalability, and responsiveness of the software.

Usability Testing:

* Usability tests validate how user friendly is our software.

Compatibility Testing:

* Compatibility tests assess the adaptability of the software to different environments.

1. Why Software Testing?

Software testing allows us to save money and time, improve security, increase product quality, improve customer satisfaction, and enhance the development process while reducing developer workload by testing possible issues ahead of time.

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Feedback:

I talked with Mr. Ligthart and Mr. Samuil, and they both provided me with the same feedback about confirming the truth of information by testing different technologies and writing my observation about those as proof. They also showed me APA Style Reference Citations.

DOT Framework Chosen Research Methods:

* Available product analysis
* Community research
* Document analysis
* Ethical check
* Peer review

Resources:

* <https://www.guru99.com/software-testing-introduction-importance.html#1>
* <https://www.atlassian.com/continuous-delivery/software-testing/types-of-software-testing>
* <https://www.softwaretestinghelp.com/types-of-software-testing/>
* <https://www.ibm.com/topics/software-testing>
* <https://www.youtube.com/watch?v=cl6pNHGHQEQ>
* <https://ictresearchmethods.nl/Methods>