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 takes your software is compiled as a whole and then tested as a whole. This testing strategy checks the functionality, security, and portability.

Acceptance Testing:

* Acceptance tests are formal tests that verify if a system satisfies business requirements. They require the entire application to be running while testing and focus on replicating user behaviors. But they can also go further and 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/) checks how the software, application, or website is secure from internal and/or external threats. This testing includes how much software is protected from malicious programs and viruses and how safe & robust the authorization and authentication processes are. It also checks how software behaves for any hacker’s attack & malicious programs and how software is maintained for data security after such a hacker attack.

Performance Testing:

* Performance tests evaluate how a system performs under a particular workload. These tests help measure an application's reliability, speed, scalability, and responsiveness.

Usability Testing:

* Usability tests validate how well a customer can use a system or web application to complete a task.

Compatibility Testing:

* Compatibility validates how software behaves and runs in a different environment, web servers, hardware, and network environment.

1. Why Software Testing?

* Saving money
* Improving security
* Increased product quality
* Higher customer satisfaction
* Enhancing development process

Diagram

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Feedback:

I talked with Mr. Ligthart and Mr. Samuil both gave me 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>