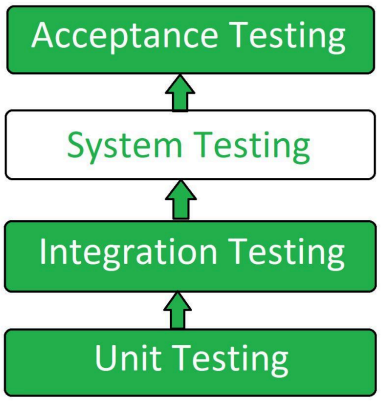
System Testing

System testing is a type of software testing that evaluates the overall functionality and performance of a complete and fully integrated software solution. It tests if the system meets the specified requirements and if it is suitable for delivery to the end-users. This type of testing is performed after the integration testing and before the acceptance testing.

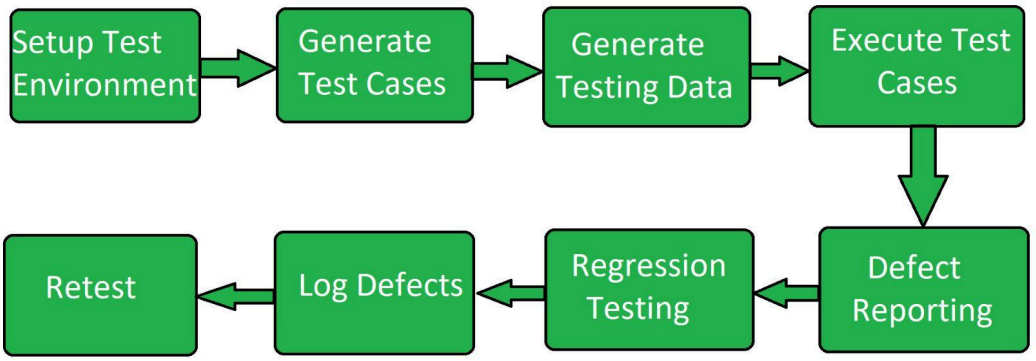
- System Testing is a type of software testing that is performed on a complete integrated system to evaluate the compliance of the system with the corresponding requirements.
- In system testing, integration testing passed components are taken as input. The goal of integration testing is to detect any irregularity between the units that are integrated together.
- System testing detects defects within both the integrated units and the whole system. The result of system testing is the observed behavior of a component or a system when it is tested.
- System Testing is carried out on the whole system in the context of either system requirement specifications or functional requirement specifications or in the context of both.
- System testing tests the design and behavior of the system and also the expectations of the customer. It is performed to test the system beyond the bounds mentioned in the software requirements specification (SRS).
- System Testing is basically performed by a testing team that is independent of the development team that helps to test the quality of the system impartially.
- It has both functional and non-functional testing. System Testing is a black-box testing. System Testing is performed after the integration testing and before the acceptance testing.



System Testing is performed in the following steps:

- **Test Environment Setup:** Create testing environment for better quality testing.
- **Create Test Case:** Generate test case for the testing process.
- **Create Test Data:** Generate the data that is to be tested.
- **Execute Test Case:** After the generation of the test case and the test data, test cases are executed.
- **Defect Reporting:** Defects in the system are detected.

- **Regression Testing:** It is carried out to test the side effects of the testing process.
- **Log Defects:** Defects are fixed in this step.
- **Retest:** If the test is not successful then again the test is performed.



Types of System Testing:

- **Performance Testing:** Performance Testing is a type of software testing that is carried out to test the speed, scalability, stability and reliability of the software product or application.
- **Load Testing:** Load Testing is a type of software Testing which is carried out to determine the behavior of a system or software product under extreme load.
- **Stress Testing:** Stress Testing is a type of software testing performed to check the robustness of the system under the varying loads.
- **Scalability Testing:** Scalability Testing is a type of software testing which is carried out to check the performance of a software application or system in terms of its capability to scale up or scale down the number of user request load.

Advantages of System Testing :

- Verifies the overall functionality of the system.
- Detects and identifies system-level problems early in the development cycle.
- Helps to validate the requirements and ensure the system meets the user needs.
- Improves system reliability and quality.
- Facilitates collaboration and communication between development and testing teams.
- Enhances the overall performance of the system.
- Increases user confidence and reduces risks.
- Facilitates early detection and resolution of bugs and defects.
- Supports the identification of system-level dependencies and inter-module interactions.
- Improves the system’s maintainability and scalability.

Disadvantages of System Testing :

- Can be time-consuming and expensive.
- Requires adequate resources and infrastructure.
- Can be complex and challenging, especially for large and complex systems.
- Dependent on the quality of requirements and design documents.
- Limited visibility into the internal workings of the system.
- Can be impacted by external factors like hardware and network configurations.
- Requires proper planning, coordination, and execution.
- Can be impacted by changes made during development.
- Requires specialized skills and expertise.
- May require multiple test cycles to achieve desired results.