# LEVELS OF TESTING

As we learned in the earlier section of the software testing tutorial that testing any application or software, the test engineer needs to follow multiple testing techniques.

**DIFFERENT LEVELS OF TESTNG:**

1. Unit Testing
2. Integration Testing
3. System Testing
4. Acceptance Testing

## Unit Testing:

* The first level of testing involves **analyzing each unit or an individual component** of the software application.
* Unit testing is also the first level of [**functional testing**](https://www.javatpoint.com/functional-testing)**.** The primary purpose of executing unit testing is to validate unit components with their performance.

## Integration Testing:

* The second level of software testing is the **integration testing.** The integration testing process comes after **unit testing**.
* It is mainly used to test the **data flow from one module or component to other modules.**
* In integration testing, the **test engineer** tests the units or separate components or modules of the software in a group.
* When each component or module works separately, we need to check the data flow between the dependent modules, and this process is known as **integration testing**.

## System Testing:

* The third level of software testing is **system testing**, which is used to test the software's functional and non-functional requirements.
* It is **end-to-end testing** where the testing environment is parallel to the production environment. In the third level of software testing, **we will test the application as a whole system.**
* To check the end-to-end flow of an application or the software as a user is known as **System testing**.

It includes two types:

* Functional Testing
* Non Functional Testing

**Functional:** Functional testing verifies each function/feature of the software whereas Non Functional testing verifies non-functional aspects like performance, usability, reliability, etc.

**Non Functional:** Functional testing can be done manually whereas Non Functional testing is hard to perform manually.

## Acceptance Testing:

* The **last and fourth level** of software testing is **acceptance testing**, which is used to evaluate whether a specification or the requirements are met as per its delivery.
* In simple words, we can say that Acceptance testing is the **squeezing of all the testing processes that are previously done.**

Two types of Acceptance testing:

* Alpha
* Beta

**Alpha:** Alpha testing is performed at the developer’s site. Multiple test cycles are organized in alpha testing.

**Beta:** Beta testing is performed at the end-user of the product. Only one or two test cycles are there in beta testing.