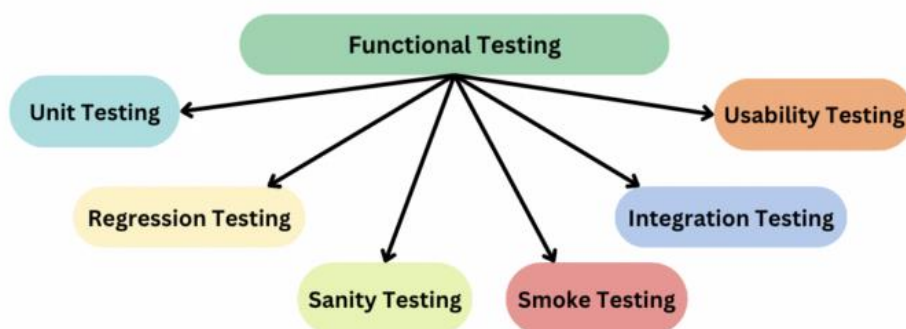# TESTING.

When it comes to testing there are two parts. We have Functional testing and Non-functional testing.

➤ **Functional Testing:** Functional testing is a type of software testing that verifies the functionality of a software system or application. It focuses on ensuring that the system behaves according to the specified functional requirements and meets the intended business needs. The goal of functional testing is to validate the system's features, capabilities, and interactions with different components. It involves testing the software's input and output, data manipulation, user interactions, and the system's response to various scenarios and conditions. Functional testing is only concerned with validating if a system works as intended.

- • Types of Functional Testing:

- ❑ **Unit Testing**: This is performed by developers who write scripts that test if individual components/units of an application match the requirements. This usually involves writing tests that call the methods in each unit and validate them when they return values that match the requirements. In unit testing, code coverage is mandatory. Ensure that test cases exist to cover the following:
    - – Line coverage
    - – Code path coverage
    - – Method coverage
- ❑ **Smoke Testing**: This is done after the release of each build to ensure that software stability is intact and not facing any anomalies.
- ❑ **Sanity Testing**: Usually done after smoke testing, this is run to verify that every major functionality of an application is working perfectly, both by itself and in combination with other elements.

- ❑ **Regression Testing**: This test ensures that changes to the codebase (new code, debugging strategies, etc.) do not disrupt the already existing functions or trigger some instability.
- ❑ **Integration Testing:** If a system requires multiple functional modules to work effectively, integration testing is done to ensure that individual modules work as expected when operating in combination with each other. It validates that the end-to-end outcome of the system meets these necessary standards.
- ❑ **Beta/Usability Testing**: In this stage, actual customers test the product in a production environment. This stage is necessary to gauge how comfortable a customer is with the interface. Their feedback is taken for implementing further improvements to the code.

Functional Testing Vs Non-Functional Testing: Differences.

Just like how functional testing focuses on the operational aspect of the application, Non-functional testing covers non-functions attributes of any software. It tests everything not already verified by functional tests, such as performance, visual, usability, stability, efficiency, maintainability, and portability.

Non-Functional Testing: