Validation Testing

Definition:
Validation testing ensures that the final software product meets the needs and requirements of the end-users and stakeholders. It checks whether the software is fit for its intended purpose and if it works as expected in real-world conditions.

Objectives:

- To verify that the product fulfills all specified requirements.
- To ensure the software is ready for real-world use.
- To confirm user satisfaction with the product.

Types of Testing in Validation:

1. **Functional Testing**: Ensures that each function of the software operates according to requirements.
2. **System Testing**: Tests the complete integrated software to verify overall behavior and functionality.
3. **Integration Testing**: Examines interactions between modules and components.
4. **User Acceptance Testing (UAT)**: Performed by end users to ensure the product is ready for actual use.

Key Features:

- **Real-world Scenarios**: Tests if the software can handle real-world situations.
- **End-User Focus**: Checks that the product meets user expectations and requirements.
- **Code Execution**: Involves running the software to test its functionalities, unlike verification, which may not require code execution.
- **Quality Control**: Part of Quality Control (QC), as it ensures the final product meets quality standards.

Importance of Validation Testing:

- Prevents errors or issues from reaching end-users.
- Ensures the product is reliable and functional.
- Increases customer satisfaction by ensuring the product meets their needs.

Example: For a banking app, validation testing would check whether users can successfully log in, view their account balance, transfer funds, and perform other banking activities as expected.

In summary, **Validation Testing** is a key step in software development that ensures the product meets user expectations, functions correctly, and is suitable for its intended use.