**Testing** and **Software Quality Assurance (SQA)** are crucial parts of software development that ensure the product meets required standards and performs reliably.

**Testing:**

Testing checks if the software behaves as expected and finds any problems (bugs) before it’s released. There are different types:

* **Unit Testing**: Checks small pieces of code.
* **Integration Testing**: Ensures different parts work together.
* **System Testing**: Tests the entire system.
* **Performance Testing**: Ensures the software works well under load.
* **Security Testing**: Looks for vulnerabilities.

Testing can be done **manually** or using **automation tools** to save time. The main goal is to find and fix issues early.

**Software Quality Assurance (SQA):**

SQA focuses on **improving the entire development process** to prevent defects. It involves:

* Setting **processes** and **standards**.
* **Reviews** and **audits** to ensure quality.
* **Monitoring** development using metrics.
* Ensuring the software complies with required standards.

SQA is about ensuring good practices are followed, while testing directly checks the software itself.

**Key Differences:**

* **Testing** finds issues in the software.
* **SQA** ensures good practices are used to **prevent** issues in the first place.