Terms you need to know:

Bug, defect, error, failure, quality, debugging, acceptance criteria, test case, testing, test types (written below)

Important dates for testing history :

1822: Charles Babbage tried to build difference engine, he couldn't succeed but he made one of the testing parts of this engine.

1879: Edison first mentioned the term **"bug"** in his notes as a problem in his machines.

1947: First actual bug was found in the computer that caused a short circuit. After that, bug word was came to computer terminology

1958: Gerald Weinber build first testing team for a spaceship project

1961: Gerald Weinber wrote a book called **"Computer Programming Fundamentals"** and there is a dedicated section to testing in the book.

1969: NATO scientist called the famous sentence first: **"Test does not show you that there is no mistake, it shows you that it exist."**

1979: First dedicated test book was published by Glenfor Meyer, "**The Art of Software**" Testing". This talks mostly about white-box tests and says "**debugging is not testing activity".**

1983: IEEE prepared testing certificates.

1988: Exploratory testing term has came up by Cem Kaner

1989: **Mercury Interactive** founded. They published some automation tools. Later **HP** bought them. **QTP**, **LoadRunner** are their most populer products.

1999: **QTP** released

2002: **ISTQB** founded

What is software testing:

Systematically control of a developed application. This process should be done according to acceptance criteria, via manual or automatic methods.

A common perception of testing is that it only consists of running tests, i.e., executing the software. This is part of testing, but not all of the testing activities.

Test activities exist before and after test execution. These activities include planning and control, choosing test conditions, designing and executing test cases, checking results, evaluating exit criteria, reporting on the testing process and system under test, and finalizing or completing closure activities after a test phase has been completed. Testing also includes reviewing documents (including source code) and conducting static analysis.

Testing can have the following objectives:

- Finding defects
- Gaining confidence about the level of quality
- Providing information for decision-making
- Preventing defects

Debugging and testing are different. Dynamic testing can show failures that are caused by defects. Debugging is the development activity that finds, analyses and removes the cause of the failure.

Why is Testing Necessary:

Software systems are an integral part of life, from business applications (e.g., banking) to consumer products (e.g., cars). Most people have had an experience with software that did not work as expected. Software that does not work correctly can lead to many problems, including loss of money, time or business reputation, and could even cause injury or death.

A human being can make an error (mistake), which produces a defect (fault, bug) in the program code, or in a document. If a defect in code is executed, the system may fail to do what it

should do (or do something it shouldn't), causing a failure. Defects in software, systems or documents may result in failures, but not all defects do so.

Failures can be caused by environmental conditions as well. For example, radiation, magnetism, electronic fields, and pollution can cause faults in firmware or influence the execution of software by changing the hardware conditions.

Rigorous testing of systems and documentation can help to reduce the risk of problems occurring during operation and contribute to the quality of the software system, if the defects found are corrected before the system is released for operational use.

Bug acceptance by developer:

- Describe the environment
- What does this development do?
- Are there any other functions/methods that uses this development?
- Reproduce the problem
- Any database changes?
- What channels are effected by the development?
- Any changes for performance effect?
- Attach a log
- Attach a screenshot or video

Testing Types:

Functional test
Non-functional test
Static test
Dynamic test
White-box test
Black-box test
User acceptance test (UAT)
Exploratory test
Regression test
Smoke test
Unit test
Integration test
Performance test
Load test
Security test
Penetration test
UI test
Alpha-testing
Beta-testing
Static code analysis

These terms can be extended to many more, buy these are the ones you will see more.