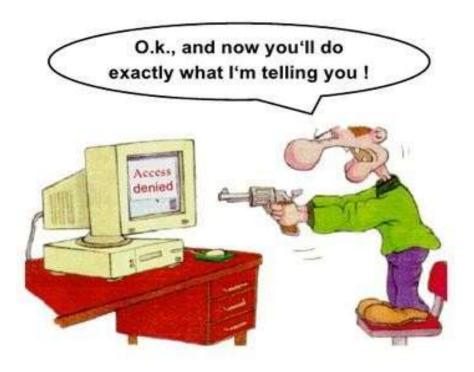# Introduction to Software Testing

Learning Objectives :

- ➢ Introduction of Software Testing**.**

- ➢ Why is Testing necessary?

- ➢ Participants in Testing

- ➢ Best Practices in Testing

- ➢ Skills required for Testing

Software Testing

What is software testing

➢ In Software Testing it is not sufficient to demonstrate that the software is doing what it is supposed to do.

➢ *In Software Testing it is more important to demonstrate that the software is not doing what it is not supposed to do.*

➤ Software testing can also be stated as the process of validating and verifying that a software program/application/product:

➤ Works as expected according to the business and technical requirements.

➤ Works consistently and predictably.

➤ Process of finding defects i.e. variance between Expected results and Actual results.

➤ Process of executing a software program application with intent of finding errors.
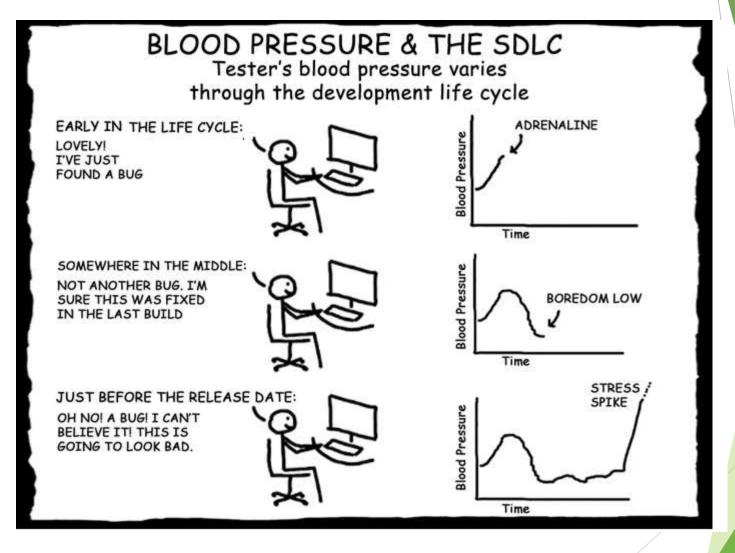
Why- What -How -Who

- Why to test?

- What to test?

- How often to test?

- Who tests?

Why is Testing necessary?

➤ *Software Testing is necessary to make sure the product or application is defect free, as per customer specifications.*

➤ **Software** Testing identifies faults whose removal increases the software quality and increases the software's reliability.

➤ More complex the program, more the testing effort is required.

➤ Testing effort is directly proportional to the complexity of the program.

➤ **Software should be:**

➤ Error Free

➤ Efficient

➤ Secured

➤ *Software Testing is important as it may cause mission failure, impact on operational performance and unreliable if not done properly*

Star Testing When?

Start Testing When?

➤ Testing starts right from the requirements phase and continues till the release time.

Objective of starting early:

➤ Requirements related defects caught later in the SDLC result in higher cost to fix the defect.

Stop testing When

➢ **Following factors are considered:**

➢ *Test cases executed with acceptable percentage of defects*

➢ Project Deadlines e.g. release deadlines, testing deadlines

➢ Test budget has run out.

➢ *Coverage of code, functionality or requirements reaches to specific point*

➢ *Bug rate falls below acceptable level*

Participants In Testing

- Customer

- User

- Developer

- Tester

- Auditor

Best Practices in Testing

- ➤ Test Planning

- ➤ Code Testability

- ➤ Test often

- ➤ Test early

- ➤ Measure test costs, coverage, results and effectiveness.

- ➤ Negative Testing: Needs Kick the wall approach

Skill Required in Testing

- Strong desire for quality and attention to detail.
- Ability to understand the point of view of the customer.
- Tact and diplomacy for maintaining the cooperative relationship with developers.
- *Ability to communicate with both technical and non-technical people.*
- Judgment skills are needed to assess high risk areas of an application on which to focus testing efforts when time is limited.
- *'Test to break' attitude.*

Misconceptions

➢ Anyone can test software: No particular skill is required.

➢ Testers can test the quality at the end of the project!

➢ Defects found means blaming to the developers.

Interview Questions

- What is Software Testing?

- Justify the importance of Software testing.

- What are the skills required for Testing?

- What are the objectives of Early Testing?