**Software testing (Chapter 1)**

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1 .Introduction to software testing

Definition:

"Software testing is a process used to identify the correctness, completeness & quality of developed software"

Testing is the process of exercising and evaluating a system or system component by manual or automated means to verify that it satisfies specified requirements.

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2 . Nature Of error

A) software bug

A software bug is the common term used to describe an error, flaw, mistake, failure or fault in a computer program or system that produces an incorrect or unexpected result, or which causes the program to perform in an un intended manner.

B) Error

The system is in a state such that further processing by the system will lead to a failure.

An error is a mistake, misconception or misunderstanding on the part of a software developer.

C) Fault

A fault occurs when a human error results in a mistake in some software product(s).

D) Failure

Faults represent problems that the developer sees, while failures are problems that the user sees.

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3  Testing principal

. Testing shows the presence of error

. Exhaustive testing is impossible

. Early testing

. Defect clustering

.The fading effectiveness

. Testing depends on context

. absence of error myth

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4.Testing Fundamental

. Error detection

. Debugging

. Verification

.Test coverage

. Quality and reliability

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5 . Diff between Verification and validation

Book (1.12)

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6 . Testability factor of software

Testability defined as the degree of difficulty of testing a system

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7. Model of software testing

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8 Software Testi life cycle

. Requirement analysis

.Test planning

.Test analysis

.Test design

. Construction and verification

. Testing Cycle

.Final testing

.Post implementation

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9. Debugging

debugging is the process of fixing a bug in the software. In other words, it refers to identifying, analyzing and removing errors. This activity begins after thesoftware fails to execute properly and concludes by solving the problem and successfully testing thesoftware.

Phase of debugging

Defect  identification

Defect confirmation

Defect analysis

Defect resolution