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Manual testing

The goal of a software tester is to find bugs, find them as early as possible, and make sure they get fixed.

**Software Testing** is an activity to detect and identify the defects in software which is a part of software development.

**Software Quality:** Software should be maintainable with bugs-free and within-budget. It should be delivered on time meeting all the requirements and expectations.

**Product vs Project:** If a software is built for a specific client according to requirement, then it is called Project. If a software is built for multiple clients according to market requirement then it is called Product.

Error: A human action that produces problem in the system is called Error.

Defect: Deviation from the expected behaviour is called defect.

Failure: The deviation identified by the end user while using the application is called Failure.

Software has bugs normally due to mis-communications, Software complexity, programming errors, Changing requirements or due to lack of skilled testers.

Waterfall Model

Advantages:

* Quality of the product will be good.
* Since Requirement changes are not allowed, chances of finding bugs will be less.
* Initial investment is less since the testers are hired at the later stages.
* Preferred for small projects where requirements are feezed.

Disadvantages:

* Requirement changes are not allowed.
* If there is defect in Requirement that will be continued in later phases.
* Total investment is more because time taking for rework on defect is time consuming which leads to high investment.
* Testing will start only after coding.

WHY TESTING IS NECESSARY?

Developers assume that whatever they have developed is as per customer requirements and Will always work. Developers may have excellent skills of coding but integration issues can be present when different units do not work together, even though they work independently One must bring individual units together and make the final product, as some defects may be possible when the sources are developed by people sitting at different places. The primary role of software testing is not to demonstrate the correctness of software product, but to expose hidden defects so that they can be fixed. Testing is done to protect the common users from any failure of system during usage. Testing is a process of demonstrating that errors are not present in the product, this approach is used in acceptance testing where if the application meets acceptance criteria, then it must be accepted by the customer, Testing gives number of detects present which indirectly gives a measurement of software quality. More number of defects indicate bad software and bad processes of development, software bug occurs when

1. The software does not do something that the product specification says it should do.

2. The software does something that the product specification says it should not do.

3. The software does something that the product specification does not mention

**Causes of software bugs** are Specification, design, code and other

The bugs are caused for many reasons but main one is Specification. specifications are the largest bug producer because it may not be communicated well to the entire development team. Planning software is vitally important. If it is not done correctly, bugs will be created. The next largest source of bugs is the design if not designed well then bugs are occurred.

Types of Testing

1.Manual testing: Manual testing includes testing a software manually, i.e., without using any automated tool or any script

2. Automation Testing: Automation testing, which is also known as Test Automation. The tester writes scripts and uses another software to test the product. This process involves automation of a manual process. Automation Testing is used to re-run the test scenarios that were performed manually, quickly, and repeatedly.