Software Testing Analysis Doc

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1. Acceptance testing

In acceptance testing, testing is done by the customer or end-user himself. Customer determines if the software system met his needs or not. He decides whether the system should be rejected or accepted.

They are other types of acceptance testing:
Beta testing :
System is distributed to volunteers
They collect change requests and then they fix and redistribute
They collect statistics on beta use
Shadowing :
In shadowing they collect or redistribute real-time use of existing system
Then they compare results and collect statistics

Acceptance Testing is the fourth and last(fourth) level of testing performed after System Testing and before making the system available for actual use.

We shared our product with a few friends and our client shared the product with customers. We collected feedback and made appropriate changes to fix bugs and user experience.

BLACK BOX TESTING, also known as Behavioral Testing, is a software testing method in which the internal

structure/design/implementation of the item being tested is not known to the tester. These tests can be functional or non-functional, though usually functional.

This method is named so because the software program, in the eyes of the tester, is like a black box; inside which one cannot see. This method attempts to find errors in the following categories:

Incorrect or missing functions

Interface errors

Errors in data structures or external database access

Behavior or performance errors

Initialization and termination errors

We hired a few guys out of our development team without knowledge of the internal structure of our product tested various buttons and providing inputs(clicks,keystrokes) and functionality of various features implemented and checked their outcomes with expected outcomes.

2. System Testing

SYSTEM TESTING is a level of software testing where a complete and integrated software is tested. The purpose of this test is to evaluate the system's compliance with the specified requirements.

The process of testing an integrated system to verify that it meets specified requirements.

It is the third level of testing done after integration testing and before acceptance testing.

3. Integration Testing

INTEGRATION TESTING is a level of software testing where individual units are combined and tested as a group. The purpose of this level of testing is to expose faults in the interaction between integrated units. Test drivers and test stubs are used to assist in Integration Testing.
Big bang approach is the simplest integration testing approach in which all the modules are simply put together and tested.
Top Down Integration starts with top-level modules and uses stubs for lower-level modules and as each level is completed, replace stubs with next level of modules
Bottom Up Integration starts with top-level modules and uses stubs for lower-level modules as each level is completed, replace stubs with next level of modules
Mixed (or sandwiched) integration testing uses both top-down and bottom-up testing approaches.

We used sandwich integration as it always have a top-level system and stubs can be written from interface specifications and by this primitive functions gets most testing too and drivers are usually cheap

4. Unit Testing

UNIT TESTING is a level of software testing where individual units/ components of a software are tested. The purpose is to validate that each unit of the software performs as designed. A unit is the smallest testable part of any software. It usually has one or a few inputs and usually a single output.

In our program a unit is a single function implemented for a feature.

WHITE BOX TESTING is a software testing method in which the internal structure/design/implementation of the item being tested is known to the tester. The tester chooses inputs to exercise paths through the code and determines the appropriate outputs. Programming know-how and the implementation knowledge is essential. White box testing is testing beyond the user interface and into the nitty-gritty of a system.

For example we as developers studied the implementation code of a progress bar on the video visualization, determined all legal (valid and invalid) AND illegal inputs and verified the outputs against the expected outcomes. We checked whether it’s in sync with video or not.