Types of Software Testing

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Abstract: In software testing, the main challenge is to develop software that is defect-free, high quality. Testing ensures whether the software developed is according to the customer's expectations. The verification and validation process plays very important roles in software testing. Verification testing is performed by the quality assurance team to check whether it is according to the customer's expectations. Validation testing is executed by the testing team.

Keywords: Unit, Integration, quality, testing.

I. INTRODUCTION

Software testing is the process of analysing the functionality of the software as per the customer's requirement. Software testing has various types of functional and non-functional testing. Software testing consists of test strategy, test deliverables, a defined test objective, etc. Software testing basically consists of two types manual testing and automation testing. Manual testing has three types white box, black box, and grey box testing. Software testing can be divided into two parts functional and non-functional testing. Functional testing contains unit testing, integration testing, and system testing. Non-functional testing contains load testing, performance testing, and stress testing.

II. TYPES OF SOFTWARE TESTING

Unit Testing: In this type of testing system is divided into number of modules which is called as unit. Each individual unit can be tested with the help of sample inputs and observing its corresponding output.
In a program we are checking for loop if method or function is working smoothly, incorrect loop initialization, arithmetic precedence.

Integration Testing: In this type of testing combined unit tested components together and form a single system. In this testing output of unit1 is given as input to unit2 and whether it is interconnected with each other can be checked. In
In this group of components is combined to produce output.
Integration testing is of four types: i) Top down ii) bottom up iii) Sandwich iv) Bing Bang
In this testing basically back box testing as well as white box testing can be included.
Validation is a part of black box testing and verification is a part of white box testing. Black box testing only focuses on what is the output instead of internal mechanism.

White Box testing: - It is used for verification in which acceptance testing, system testing ,unit testing and integration testing is included. In this we focus on internal mechanism i. e. how the output is achieved?

Black box testing: It is used for validation. It is also known as behavioural testing. In this testing main focus is on what output is achieved? There is no need of knowledge about internal structure and code. It is entirely based on software specifications and requirements.

Regression Testing: Whenever there is modification in existing system at that regression testing is used.
In this testing it is checked that after the whole component works properly after adding components to the complete program.

Acceptance Testing: In acceptance testing it is tested that whether final product is ready to deliver to the customer or not. It is used to test business requirements as well as it is used to test acceptability. It is used to test user needs and business processes. There are two types of acceptance testing alpha testing and beta testing.

Alpha testing: In alpha testing as like simulation quality assurance department test the product.

Beta testing: In beta testing product is tested by end user. This testing is done in real time environment.

System testing: In this testing there is compete integrated system and related to compliance of system with requirements.

Functional testing: In this **testing** providing appropriate input and verifying for specified output. In this testing APIs, user interface, database and security tested.

Non-functional testing: In this testing performance, usability, and reliability tested. Example of non-functional testing is how many people login in as system at a time.

CONCLUSION:

Software testing is used to verify quality and prevent defect as well as to make sure that end result meets.

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