



White Paper on Verification and Validation

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Introduction

Quality expectation of end-user from a piece of software is increasing day by day. To facilitate the same there are several measures taken to control and ensure the standards followed globally.

Software V&V (Verification and Validation) process uses rigorous methodologies for evaluating the correctness and quality of the software throughout the development life cycle. Two major activities of V&V are review and testing which are further described below.

Review Process

Review process is performed during entire life cycle of software development to keep regular check of specifications being followed properly. Review process can be performed in both formal and informal manner.

Informal review

Informal review is when a developer conducts review of software whenever required by selecting a review panel and provides them with rough documentation and system at current state. Informal reviews are very important as they avoid problems that may crop up between long phases of software life cycle.

Formal review

Formal review is conducted by official review panel or board who reviews requirement specifications, preliminary designs and software test plan at end of each life cycle phase.

Inspection or walkthrough

Intense line by line examination of code performed by a group of quality experts is known as inspection or walkthrough.

Testing process

Testing means monitoring performance of software under simulated real time environment as defined in requirement specifications.

Informal testing

Informal tests are performed on software by developer with a motive to find errors prior to formal testing and to ensure correct response under different circumstances like:

High load or stress

It is very important to identify the level of load or stress software will be required to work under and ensure that software can handle it.

Exception or error

One of the biggest reasons for system failures is lack of exception or error handling and to check for the same, exceptions are simulated intentionally to ensure ability of software to continue working in such situations.

Formal testing

Ensuring that software is in accordance with requirement specifications before it can be released is called formal testing. This process involves preparation of test plan, test report, quality report, and recording of procedures. All these reports will be helpful in future while making sure previous functionality stay intact on modifications.

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