**CHAPTER-6**

**6 TESTING**

**6.1 Unit Testing**

Unit testing is performed for testing modules against detailed design, Input to the process are usually compiled modules from the coding process. Each modules are assembled into a larger unit during the unit test process testing.

Testing has been performed on each phase of design and coding. We carry out the testing of module interface to ensure the proper flow of information into and out of program unit while testing. We make sure that the temporarily stored data maintains its integrity throughout the algorithms execution by examining the local data structure. Finally, all error-handling paths are also tested.

**6.2 Software Testing**

We usually perform System Testing to find errors resulting from unanticipated interacting between the sub-systems and system component. Software must be tested to detect and rectify all possible errors once the source code is generated before delivering it to the customers. For finding errors , series of test cases must be developed which ultimately uncover all the possibly existing system. Different software techniques can be used for this process. This system provides systematic guidance for designing test that

* Exercise the internal logic for the software components.
* Exercise the input and output domains of a program to uncover

error in program function, behavior and performance.

We test the software using two methods :

White Box Testing: Internal program is exercised using this test case design technique.

Black Box Testing: Software requirements are exercised using this test case design technique.

**6.3 Performance Testing**

It is done to test the run time performance of the software within the context of the integrated system. These tests are carried out throughout the testing process. For example, the performance of individual module are accessed during white box testing under white box testing.

**6.4 Verification and Validation**

The testing process is a part of broader subject referring to verification and validation. We have to acknowledge the system specifications and try to meet the customer’s requirements and for this sole purpose. We have to verify and validate the product to make sure everything is in place. Verification and Validation are two different things One is performed to ensure that the software correctly implements the specific functionality and other is to ensure the customer requirement is properly met or not by the end product.

Verification is more like “are we building the product right?” and Validation is more like “are we building the right product?”.