

## **CHAPTER – VII**

### **SYSTEM TESTING AND IMPLEMENTATION**

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## **7.1 INTRODUCTION**

The purpose of system testing is to identify and correct errors in the candidate system. In system testing, performance and acceptance standards are developed, substandard performance or service interruption that result in the system failure are checked during the test.

## **7.2 SYSTEM TESTING**

System testing is the stage of implementation, which is aimed at ensuring that the system works accurately and efficiently before live operation commences. In principle, system providing is an ongoing activity throughout the projects. The logical design and physical design should be thoroughly and continually examined on paper to ensure that they will work when implemented. Thus the system test in implementation should be a confirmation that all is correct and an opportunity to show the user that the system works.

For becoming a successful system, the components of the system are of error free one. Even if the components are error free, the whole system may lead to error due to the data mismatching among the components that comprised the system.

When we have tested each program individually, using the test data designed by us, and has verified that these programs link together in the way that specified in the program suit specification, the complete system and its environment was tested to the satisfaction of the system analyst and the user. The system analyst provide us the test data, specially designed to show that the system will operate successfully in all aspects and produce expected results

under expected conditions. The test should take place as far as possible in the actual operating environment, and they should test people and equipment as well as programs. Where this is not possible, the system should be tested in simulated environment.

### **7.3 DIFFERENT LEVELS OF TESTING**

#### **7.3.1 SYSTEM TEST DATA**

There was careful planning of how the system will be proved and the data designed. The system analyst was so clear about the test objectives. The system test data can rarely be comprehensive enough to test the system fully some aspects of the system should be tested during live operation. System analyst deliberately plans the extent to which the system should be tested. This depends on the purpose and sensitivity of the system. In our case the security check was of outmost importance and it was checked thoroughly. To take an extreme case, where the system is "life or death" type, the extra effort and time required for the production of the most comprehensive system test data was essential. The system test data, and the result of processing it is maintained as a permanent manual throughout the operational life of the system for audit process or test any subsequent major amendments.

#### **7.3.2 MODULE TESTING**

Each module is designed, compiled, generated and tested each time we make modifications or corrections in the system.

### **7.3.3 STRING TESTING**

Each portion of the system is tested against the entire modules and data.

### **7.3.4 USER ACCEPTANCE TESTING**

This is considered to be more important as the users are aware of the processes inside the system. Proper validation and messages are needed to be informed to the user during each mistake they make. Also necessary help is required to be given to the users for each time they are confused.

## **7.4 NATURE OF THE TEST DATA**

The proper choice of test data is important as the test itself. If test data as input are not valid or representative of data to be provided by the user, then the reliability of the output is suspect. Test data may be artificial (created for test purpose only) or live (taken from the users actual file). Properly created artificial data should provide all combinations of values and formats and make it possible to test all logic and transaction path subroutines. Unlike live data, which are based towards typical values, artificial data provide extreme values first testing the limits of the proposed system.

The different steps for testing the system have been carried out during the development of each module. The various programs were tested at the time of coding and necessary changes made there on to make sure that the module is working satisfactorily as regards the expected output for the module.

## **7.5 OUTPUT TESTING**

No system could be useful if it does not produce the required output. The output generated or displayed by the system under consideration have been tested by asking the user about the format required by them.

## **7.6 SYSTEM IMPLEMENTATION**

A crucial phase in the system development life cycle is the successful implementation of the system design. Implementation simply means covering the system design into operation. This involves installing of hardware, terminals and also training the operation staff-

There are three main types of implementation: -

- Implementation of a computer system to replace the manual system.
- Implementation of a new computer system to replace an existing one.
- Implementation of a modified application to replace an existing one.

After a thorough testing of the different aspects of the system, the system is ready for implementation. The system is to run in parallel with the existing manual system for a few days until the concerned authority becomes fully confident of the new system.

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