* Programming Practice (Coding & Testing).

→ The main object of Programming is to attech code with the System Design Controls.

→ There are main three types of Programming code can be apply in system.

- → Simple Programming code.
- → Decision Making code.
- → Iterative statements.

→ There are two types of Programming Environment can be Consider.

1) Structured Programming.
2) Object programming (oop).

→ In structured Programming the System is divided into Moduls.

→ In Object oriented programming the System is divided into class.

→ To Select the Proper Programming Structure the following Points are Consider.

a) Understand the System Behaviour
b) Determine the System Design.
c) Enough knowledge of Programming.
d) Understand the cost & Benifit of the System.
e) Identify the Requirement of S/W.

→ Code Structure For Programming.

1) Construct the algorithm.
2) Select the Data structure that meet System Designing.
3) Understand S/W Archicture.
4) Create a specific Interface.
5) Keep programming as simple as possible.
6) Select proper Programming Statements.
7) Select Meaningful Variable & follow other logical Coding.
8) Write Code that is self documenting.

* Testing Fundamentals (errors, fault, failure).

→ Testing is a technique of s/w to find the errors or mistake in a particular System.

→ Testing is very important factor to provide quality s/w.

→ There are two types of Testing approach are Considered.

1) s/w Validation.
2) s/w Verification.

→ The following three are the basic target to Recover Using testing are ...

→ Errors.
→ Fault.
→ Failure.

→ We can Reduce the errors, fault and failure of the system using Testing technique.

→ Errors :-

These are actual coding - Mistakes made by developers. In addition, there is a difference in output of s/w and desired output is considered as an error.

There are two types of errors.

→ Systex Errors.

→ Logical errors.

→ Fault :-

When error exists fault - occurs, a fault is also known as Bug.

It is a Result of an error which can cause system to fail.

→ Failure :-

failure is said tobe the - inability of the system to perform the desired task. failure occures when fault exists in a system.

→ There are generally two fundamental Testing techniques are used.

1) Manual.
2) Automated.

→ This test can be Conducted based on two approaches.

a) Functionality testing.
b) Implementation testing.

* Levels of Testing

Testing is the Basic tools which are used to enhance the Quality of Software in Markets.

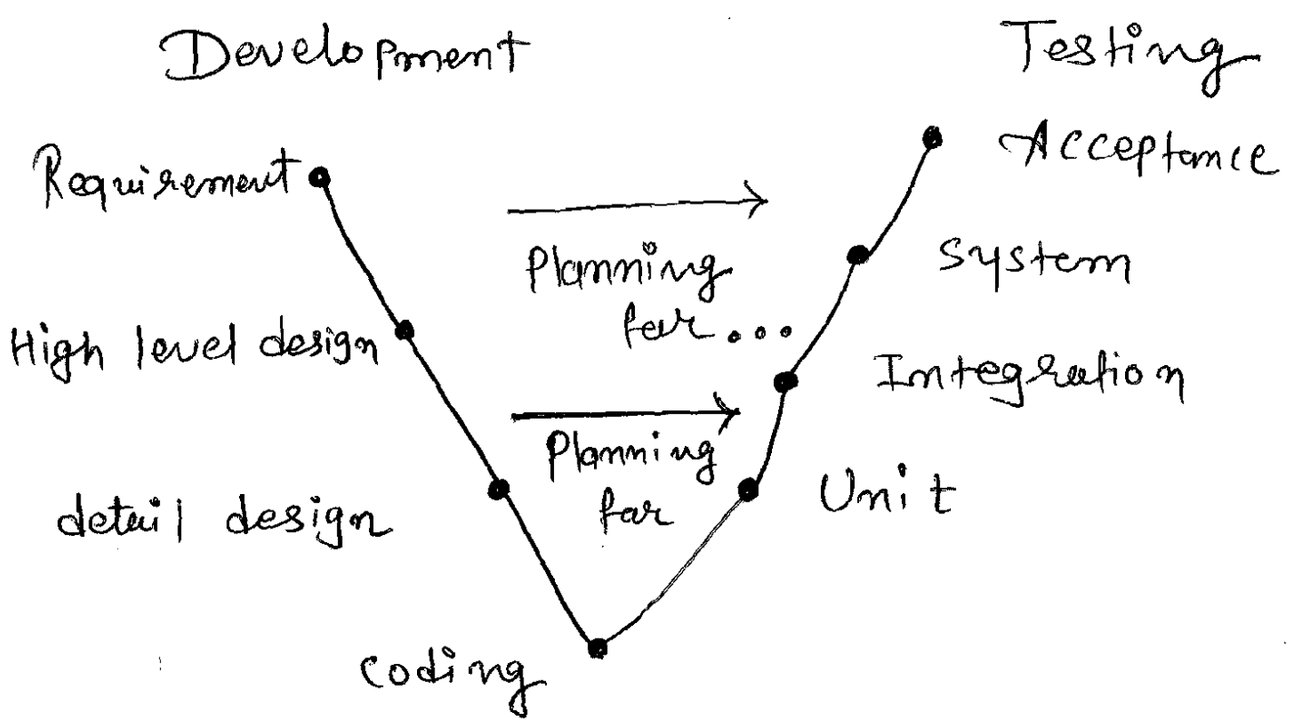
→ The testing process could be abstracted to different levels.

→ The following list show the different types of levels of Testing.

The level of testing contain the following elements in it.

1) Unit testing.
2) Integration testing.
3) System testing.
4) Acceptance testing.
5) Regression testing.

The following diagram shows the "V" model level of testing.



* Levels of System Testing :-

→ To improve the quality of system s/w User can perform the different types of testing.

→ The testing technique has the different types of level and this levels of testing are used to design the error free system or S/W.

→ The following are the different types of levels of system Testing.

(1) Unit Testing

(2) Integration Testing

(3) System Testing

(4) Acceptance Testing

(5) Regression Testing

Etc....

→ The following are the basic process which are used to perform the levels of testing.

(1) Data validation

(2) Data verification

(3) Test planning

(4) Testing strategies

(5) Module grouping

Etc...

(1) Unit Testing :-

→ This type of testing is performed by the system developer.

→ In Unit Testing the individual parts of a system are test separately and correct them.

→ The Unit testing is easy to implement.

(2) Integration Testing :-

→ This technique is performed by the system developer.

→ This testing is performed on the combination of two or more parts together.

→ After (combination) completion of unit testing the next level of system Testing is Integration Testing.

→ The integration testing can be done two ways.

(A) Bottom-up Integration Testing :

→ Combination of system parts in bottom-up fashion.

(B) Top-down Integration Testing :

→ Combination of system parts from Top to bottom.

(3) System Testing :-

→ In system Testing the testing is performed on whole system.

→ After integration of all the system components these components are test as a whole system.

→ This type of testing is performed by a specialized testing team.

(4) Acceptance Testing :-

→ This is the most important type of testing & it is conducted by the quality Assurance team.

→ The Acceptance Testing is used to remove the major errors & bugs of the system.

→ The acceptance Testing covers the following approach of a system.

(a) Accuracy

(b) Standardization

(c) Quality

(d) Reliability

(e) Speed

(f) validation

(5) Regression Testing :-

→ Whenever a change in a s/w application is made at that time there is a possibility of errors occurs in a system.

→ After the changes made in a system it is required to apply the regression testing on the system.

→ The others testing levels are....

- Alpha Testing
- beta Testing
- Functional Testing
- Non-Funetional Testing
- Performance Testing
- Load Testing
- Stress Testing
- Security Testing

Etc...

* Testing Methods

A s/w testing Method is a Combination of Black box & White box testing Methods.

There are different methods that can be used for s/w testing.

these methods are ...

1) Black box testing.
2) White box testing.
3) Grey box testing.
4) Functional testing.
5) Non-functional testing.
6) Unit testing.
7) Integration testing.
8) System testing.
9) Regression testing
10) Acceptance 11) Alpha 12) Beta