5. TESTING

Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design and coding. In fact, testing is the one step in the software engineering process that could be viewed as destructive rather than constructive.

A strategy for software testing integrates software test case design methods into a well-planned series of steps that result in the successful construction of software. Testing is the set of activities that can be planned in advance and conducted systematically. The underlying motivation of program testing is to affirm software quality with methods that can economically and effectively apply to both strategic to both large and small-scale systems.

TESTING DIAGRAM

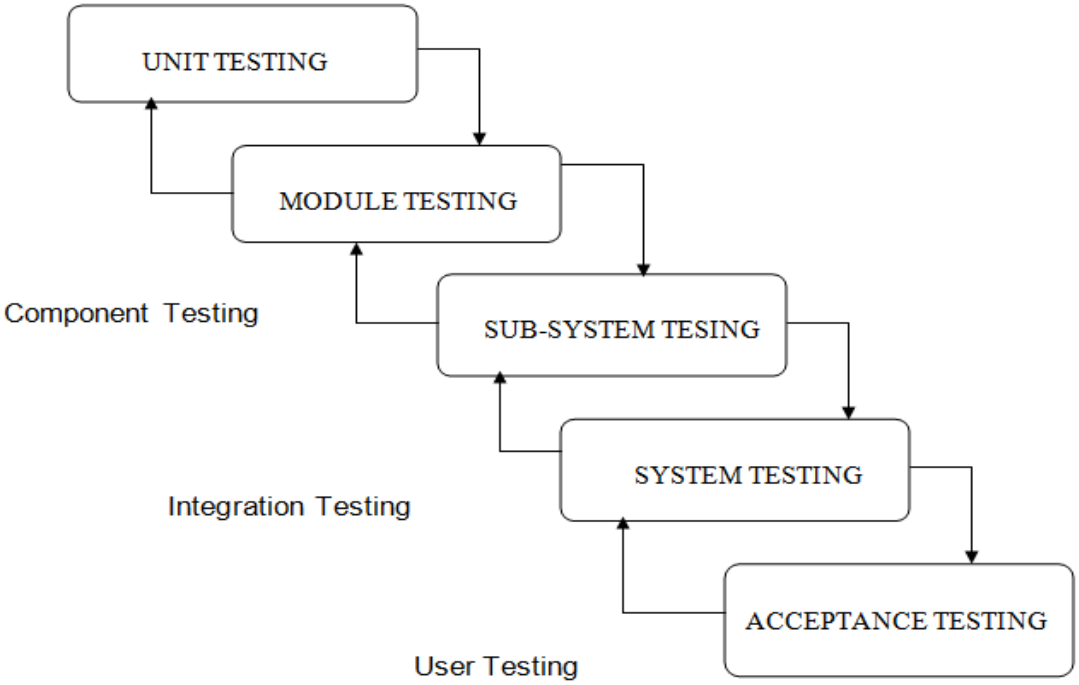

Fig no 5.1 Testing Diagram

UNIT TESTING

Unit testing focuses verification effort on the smallest unit of software design, the

module. The unit testing we have is white box oriented and some modules the steps are conducted in parallel.

WHITE BOX TESTING

This type of testing ensures that

- All independent paths have been exercised at least once.
- All logical decisions have been exercised on their true and false sides.
- All loops are executed at their boundaries and within their operational bounds.
- All internal data structures have been exercised to assure their validity.

To follow the concept of white box testing we have tested each form .we have created independently to verify that Data flow is correct, All conditions are exercised to check their validity, All loops are executed on their boundaries.

BASIC PATH TESTING

Established technique of flow graph with Cyclomatic complexity was used to derive test cases for all the functions. The main steps in deriving test cases were:
Use the design of the code and draw correspondent flow graph.

Determine the Cyclomatic complexity of resultant flow graph, using formula: V (G) =E-N+2 or

V (G) =P+1 or

V (G) =Number of Regions

Where V (G) is Cyclomatic complexity, E is

the number of edges,

N is the number of flow graph nodes, P is

the number of predicate nodes.

CONDITIONAL TESTING

In this part of the testing each of the conditions were tested to both true and false aspects. And all the resulting paths were tested. So that each path that may be generate on particular condition is traced to uncover any possible errors.

DATA FLOW TESTING

This type of testing selects the path of the program according to the location of definition and use of variables. This kind of testing was used only when some local variable were declared. The definition-use chain method was used in this type of testing. These were particularly useful in nested statements.

LOOP TESTING

In this type of testing all the loops are tested to all the limits possible. The following exercise was adopted for all loops:

- All the loops were tested at their limits, just above them and just below them.
- All the loops were skipped at least once.
- For nested loops test the inner most loop first and then work outwards.
- For concatenated loops the values of dependent loops were set with the help of connected loop.
- Unstructured loops were resolved into nested loops or concatenated loops and tested as above.

Each unit has been separately tested by the development team itself and all the input have been validated.

5.1 TEST CASES

In different terms and condition, it was find the system "System" is enable to solve the entire problem related to system.

Is password correct?

If user name and password will be correct then a "Main Page" of Program will be displayed.

All the modules are connected properly with main menu. This can be displayed on the status bar. Where the entire module can be shown.

Implementing the test plan in the software with data:-

There are two methods are used for implementing the test plan.

1. **Testing with the dummy data:**

Testing in this way means testing with data which not original or it is dummy. With this method accuracy of the system can be judged according to some extents. If the system is running correctly with this data then it can be inferred that software has been tested successfully.

2. Testing with Live data:

Testing with live data means testing with original data. This means that system is tested with data taken from the actual user. This is very accurate as compared to dummy data. If the system is running correctly with this data then it can be inferred that software tested successfully.

TEST CASES:

Sl.no.	Description	Expected Result	Actual Result	status
1	Wrong user name and Password entered by a person in login.	System must display error message.	System displayed error message and login failed.	Pass
2	Numeric fields are filled with characters.	System must display error message.	A Message is displayed requesting to enter only numbers.	Pass
3	String data fields are filled with numbers.	System must display error message.	A Message is displayed Requesting to enter only characters.	Pass
5	Changes made should be reflecting the database.	Update operation should be efficient.	Update operation is performed based on the fields changed by the admin.	Pass

7	Check Email_id are filled in proper format or Not.	System must display error message to the user.	A Message is displayed requesting to enter in correct format.	Pass
8	Check form are filled in proper format or Not.	System must display error message to the user.	A Message is displayed requesting to enter in correct format	Pass
9	Date Fields are filled in proper date format or Not.	System must display error message to the user.	A Message is displayed requesting to enter in correct format.	Pass