Chapter 7.

Testing

7.1. Testing Plan:

The importance of software testing and its implication with respect to software quality cannot be overemphasized.

Software Testing is a critical element of software quality assurance and represents the ultimate review of specification, design and coding. It is with this motivating factor that about 30 to 40 percent of total project. Efforts are expanded on testing.

With the project nearing completion, we have taken up the activity of testing the individual forms and making sure that the interaction among the various forms is smooth and without any glitches. Before actually beginning to test, a few things should be born in mind. Among others these include:

1. All tests should be traceable to customer requirements.

2. Tests should be planned before the testing begins.

3. To be effective, testing should be conducted by an independent third party.

7.2. Testing Methods

➢ **Black Box Testing: -** In using this strategy, the tester views the program as a black-box, tester doesn't see the code of program: Equivalence partitioning, Boundary – value analysis, error guessing.

➢ **White Box Testing: -** This testing is based on knowledge of the internal logic of an application's code. Also known as Glass box Testing. Internal software and code working should be known for this type of testing. Tests are based on coverage of code statements, branches, paths, conditions.

➢ **Unit Testing: -** The first test in the development process is the unit test. The source code is normally divided into modules, which in turn are divided into smaller units called units. These units have specific behavior. The test done on these units of code is called unit test. Unit test depends upon the language on which the project is developed. Unit tests ensure that each unique path of the project performs accurately to the documented specifications and contains clearly defined inputs and expected results.

➢ **Alpha Testing: -** Testing after code is mostly complete or contains most of functionality and prior to users being involved. Sometimes a select group of users are involved. More often this testing will be performed in-house or by an outside testing firm in close cooperation with the software engineering department.

7.3 Test Cases:

        In Software engineering the most common definition of a test case is set of conditions or variables under which a tester will determine if a requirement or use case upon an application is partially or fully satisfied. In the situation each sub requirement must have at least one test case. A good test should neither be too simple nor too complex.