

**SES'S L.S.RAHEJA COLLEGE OF ARTS AND COMMERCE**

Course: Software Quality Assurance

Unit: V

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**Level of Testing:**

- Testing is the process of exercising a program with the specific intent of finding errors prior to delivery to the end user.
- A Level of software testing is a process where every unit or component of a system is tested.

**Proposal and Requirements Testing**

- This type of testing covers testing of requirements specification that describes:
  - Project functionality
  - user interface
  - software and hardware interfaces
  - performance criteria
  - implementation issues and risks

**Stages in Requirements based Testing:****Defining Test Completion Criteria**

Testing is completed only when all the functional and non-functional testing is complete.

**Design Test Cases**

A test case has five parameters namely the initial state or precondition.

**Execute Tests**

Execute the test cases against the system under test and document the results.

**Verify Test Results**

Verify if the expected and actual results .

**Verify Test Coverage**

Verify if the tests cover both functional and non-functional aspects.

### Track and Manage defects

Any defects detected during the testing process goes through the detect life cycle and are tracked to resolution.

### Requirements Testing Process:

- Testing must be carried out in a timely manner.
- Testing process should add value to the software life cycle.
- Testing the system exhaustively is impossible hence the testing process needs to be efficient as well.
- Testing must provide the overall status of the project, hence it should be manageable.

### Principles of Good Code Review:

- The first and foremost principle of a good review is that if you commit to review code, review it thoroughly .
- Aim to understand every changed line. Research things you don't understand.
- Don't assume the code works – build and test it yourself.
- Follow up on reviews . After suggesting changes , you should be prepared to review it again.

### Design Testing:

- Design is not just what it looks and feel like, Design is how it works.
- Design depends on several key factors such as usability, utility, desirability, attractiveness etc.
- It is used to test on designs that are still in progress and before they're linked together as a prototype.

### Module Testing:

- It is a process of testing the individual subprograms, subroutines, classes, or procedure in a program.
- Module testing is largely a white box oriented.
- Module testing allows to implement parallelism into the testing process by giving the opportunity to test multiple modules simultaneously.

### Big Bang Testing:

- Combining all the modules once and verifying the functionality after completion of individual module testing.
- In Big Bang Integration Testing , the individual modules are not integrated until all the modules are ready.
- It would be difficult to find out whether the defect arise in interface or in module.

### Sandwich Testing:

- Hybrid integration testing is also known as Sandwich integration testing.
- It is the combination of both Top-down and Bottom-up integrating testing.
- In Hybrid Integration Testing , we exploit the advantage of Top-down and Bottom-up approaches .

### Features:

- It is viewed as three layer: viz –The Main Target layer ,a layer above the target layer and a layer below the target layer.
- Testing is mainly focused for the middle level target layer and is selected on the basis of system characteristics and the structure of the code.

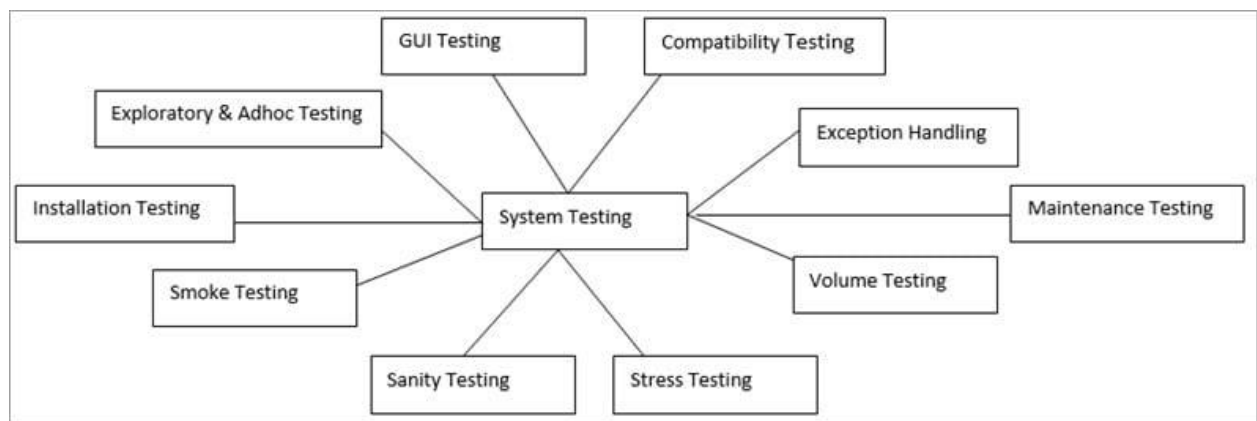
### Validation Testing:

- Ensure that each function or performance characteristics conforms to its specification.
- Deviation must be negotiated with the customer to establish a means for resolving the errors.
- Configuration review or audit is used to ensure that all elements of the software configuration have been properly developed, cataloged, and documented to allow its support during its maintenance phase.

### Sub System Testing

- ▶ **Command Processing System Testing** Tests for errors in integration and functioning of system sub-components. Assures proper operation of input, Monitoring and Processing, Clock, Timers etc.
- ▶ **Cooking Control System** : Tests for errors in integration and functioning of cooking control function and oven control functions.
- ▶ **Output Processing System**: Tests for errors in intregration of timer display, clock display and beeper signaling

### Types of System Testing



NOTE: THESE POINTS ARE INDICATIVE AND NOT EXHAUSTIVE. PLEASE ELLABORATE THE ANSWERS WITH PROPER EXAMPLES WHEREVER APPLICABLE.

Write answers for following

- 1 What is proposal and requirement testing?
- 2 What are the Stages in Requirements based Testing.

- 3 Explain GUI and Compatibility testing
- 4 Explain Control FLOW Graph.
- 5 What are the Principles of Good Code Review?
- 6 Write a note on sandwich testing.

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