SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE NAME :19CS511 SOFTWARE TESTING

III YEAR / V SEMESTER

Unit 3- LEVELS OF TESTING

Topic 1 : The need for Levels of Testing

The need for Levels of Testing - **Problem**

 A level of software testing is a process where every unit or component of a software/system is tested.

 The primary goal of system testing is to evaluate the system's compliance with the specified needs.

 In Software Engineering, four main levels of testing are Unit Testing, Integration Testing, System Testing and Acceptance Testing.

Software Testing

 Software Testing is an activity performed to identify errors so that errors can be removed to obtain a product with greater quality.

 To assure and maintain the quality of software and to represents the ultimate review of specification, design, and coding, Software testing is required.

There are different levels of testing :

Unit Testing : checks if software components are fulfilling functionalities or not.

Integration Testing : checks the data flow from one module to other modules.

System Testing : evaluates both functional and non-functional needs for the testing.

Acceptance Testing : checks the requirements of a specification or contract are met as per its delivery.

Levels of testing

1) <u>**Unit testing:**</u>

A Unit is a smallest testable portion of system or application which can be compiled, liked, loaded, and executed. This kind of testing helps to test each module separately.

2) <u>**Integration testing:**</u>

Integration means combining. For Example, In this testing phase, different software modules are combined and tested as a group to make sure that integrated system is ready for system testing.
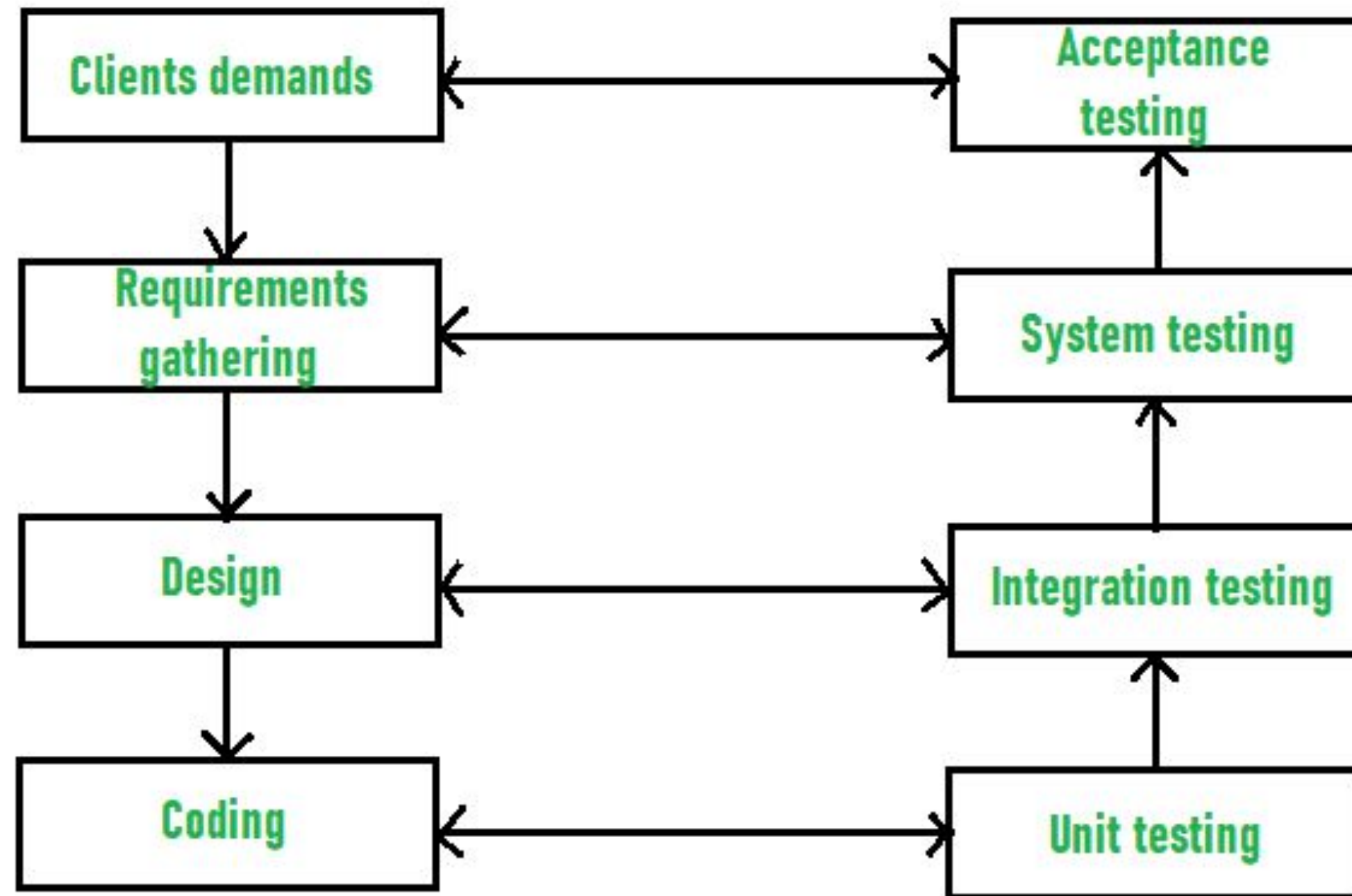
3) <u>System testing:</u>

System testing is performed on a complete, integrated system. It allows checking system's compliance as per the requirements. It tests the overall interaction of components. It involves load, performance, reliability and security testing.

4) <u>Acceptance testing:</u>

Acceptance testing is a test conducted to find if the requirements of a specification or contract are met as per its delivery. Acceptance testing is basically done by the user or customer. However, other stockholders can be involved in this process.
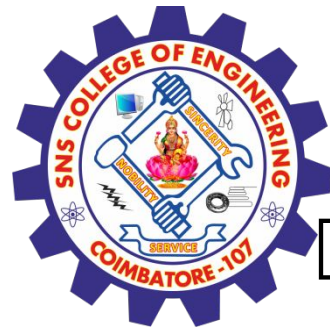
LEVELS OF TESTING

Activity

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Advantages	Disadvantages
Assess the amenability of the system to growth	to avoid delay and cost overrun the **best practice** to be adopted is testing the application early in its development cycle.
Identify weak points in the architecture	
Detect bugs in the software that could not have been identified otherwise	So individual units or modules should be tested for performance as and when these are complete
Tune up the system	
Verify resilience and reliability of the system	

Assessment 1

1. List out the Advantages of level of testing

a)_____

b)_____

c)_____

d)_____

2. Identify the Disadvantages of level of testing

a)_____

b)_____

c)_____

d)_____

TEXT BOOKS:

1. Ricardo Baeza-Yates and Berthier Ribeiro-Neto, ―Modern Information Retrieval: The Concepts and Technology behind Search, Second Edition, ACM Press Books, 2011.

2. Ricci, F, Rokach, L. Shapira, B.Kantor, ―Recommender Systems Handbook‖, First Edition, 2011.

REFERENCES:

1. C. Manning, P. Raghavan, and H. Schütze, ―Introduction to Information Retrieval, Cambridge University Press, 2008.

2. Stefan Buettcher, Charles L. A. Clarke and Gordon V. Cormack, ―Information Retrieval: Implementing and Evaluating Search Engines, The MIT Press, 2010.

THANK YOU