DATABASE ARCHITECTURE

Application Interfaces

Query Processor & Storage Manager

Disk Storage Manager

	Naive users	Application programs	Sophisticated users	Database administrator

Application interact — Application programs — Query — Database scheme

Application programs object code — Embedded DML precompiler — DML compiler — DDL interpreter

Query evaluation engines

QUERY PROCESSOR

Transaction manager — Buffer manager — STORAGE MANAGER

File manager

Indices — Stastical data — Data files — Data dictionary

DISK STORAGE

System structure

External View (Individual user view)

Conceptual View (Community user view)

Internal View (Storage view)

1

Query processor

1. DDL Interpreter

 • This is basically a translator which interprets the DDL statement in Data dictionaries.

2. DML Compiler

 • It translates DML statements query Languages into an evaluation plan.

3. Query Evaluation Engine

 • It executes the low-level instructions generated by the DML Complier

Storage Manager

1. **Authorization and Integrity Manager**
   - Who want to access the data and test for integrity constraints.
2. **Transaction Manager**
   - Concurrent transaction execution processed without conflicting.
3. **File Manager**
   - Manages allocation of space on disk storage and representation pf the information on disk.
4. **Buffer Manager**
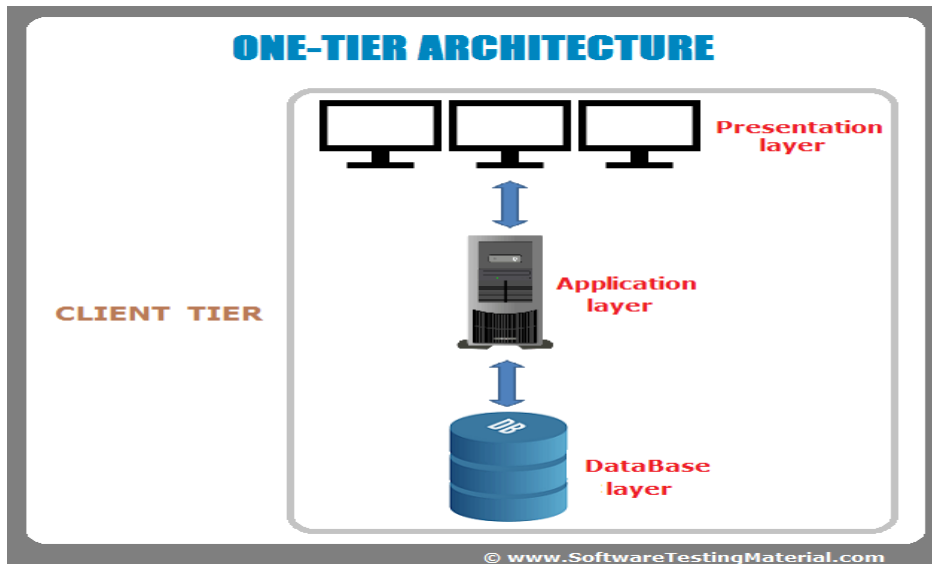   - Fetching the data from disk storage into main memory and what data to cache in main memory.

1-Tier Architecture

- In 1-tier architecture, the DBMS is the only entity where the user directly sits on the DBMS and uses it.
- Any changes done here will directly be done on the DBMS itself. It does not provide handy tools for end-users.
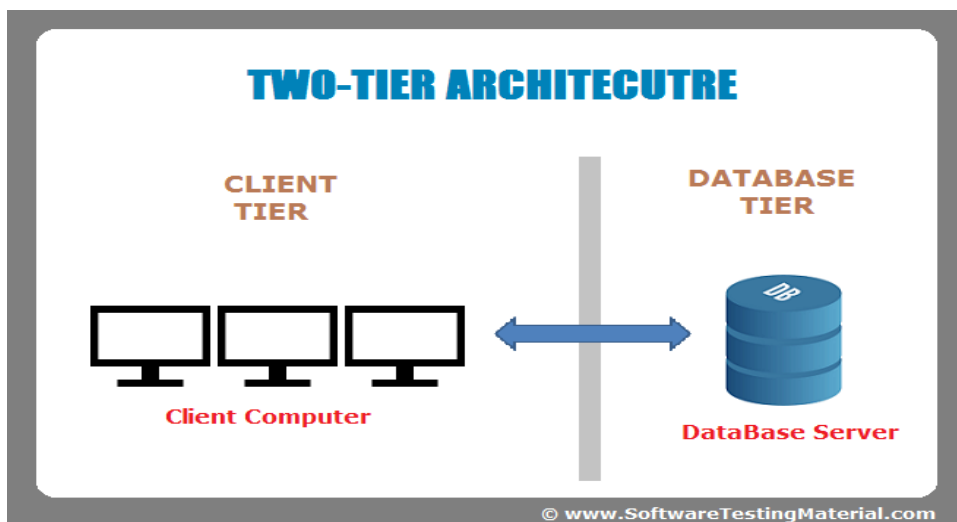- Database designers and programmers normally prefer to use single-tier architecture.

CONT..

5

2-Tier Architecture

- If the architecture of DBMS is 2-tier, then it must have an application through which the DBMS can be accessed.
- Programmers use 2-tier architecture where they access the DBMS by means of an application.
- Here the application tier is entirely independent of the database in terms of operation, design, and programming.
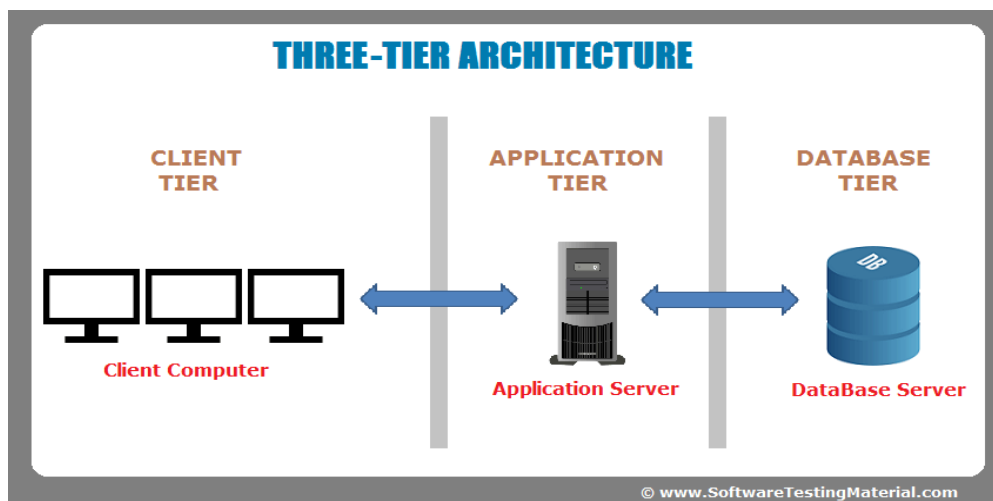
6

CONT..

3-Tier Architecture

- A 3-tier architecture separates its tiers from each other based on the complexity of the users and how they use the data present in the database.

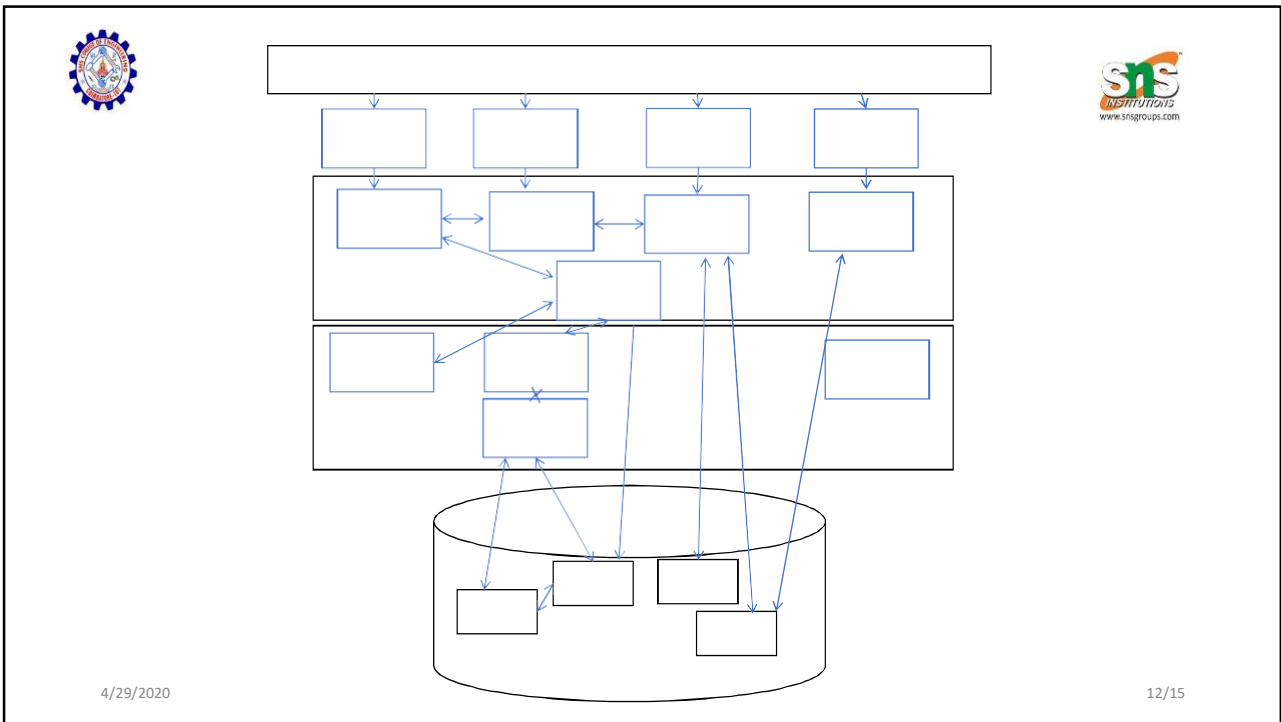- It is the most widely used architecture to design a DBMS.

CONT..

THREE-TIER ARCHITECTURE

CLIENT
TIER

APPLICATION
TIER

DATABASE
TIER

Client Computer

Application Server

DataBase Server

© www.SoftwareTestingMaterial.com

9

Evaluation

1.List out the types of structure view

a)_____

b)_____

c)_____

Answer :
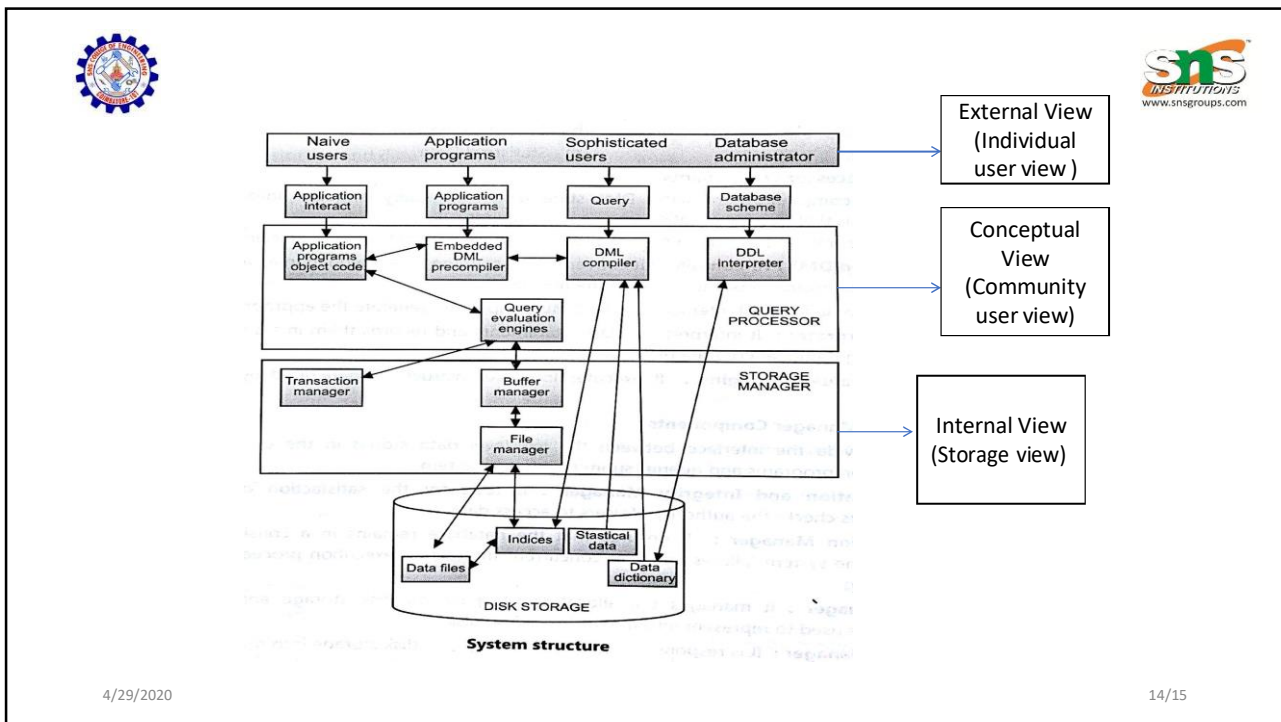
a) External View

b) Conceptual View

c) Internal View

4/29/2020

Answer

4/29/2020

13/15

12

External View
(Individual
user view)

Conceptual
View
(Community
user view)

Internal View
(Storage view)

System structure

THANK YOU