



SNS COLLEGE OF TECHNOLOGY COIMBATORE

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DEPARTMENT OF MCA

Course Name : 19CAT609 - DATA BASE MANAGEMENT SYSTEM

Class : I Year / I Semester

Unit I - Introduction

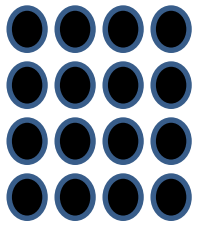
Topic IV – Architecture



DBMS Architecture

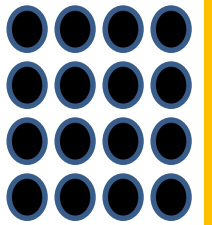
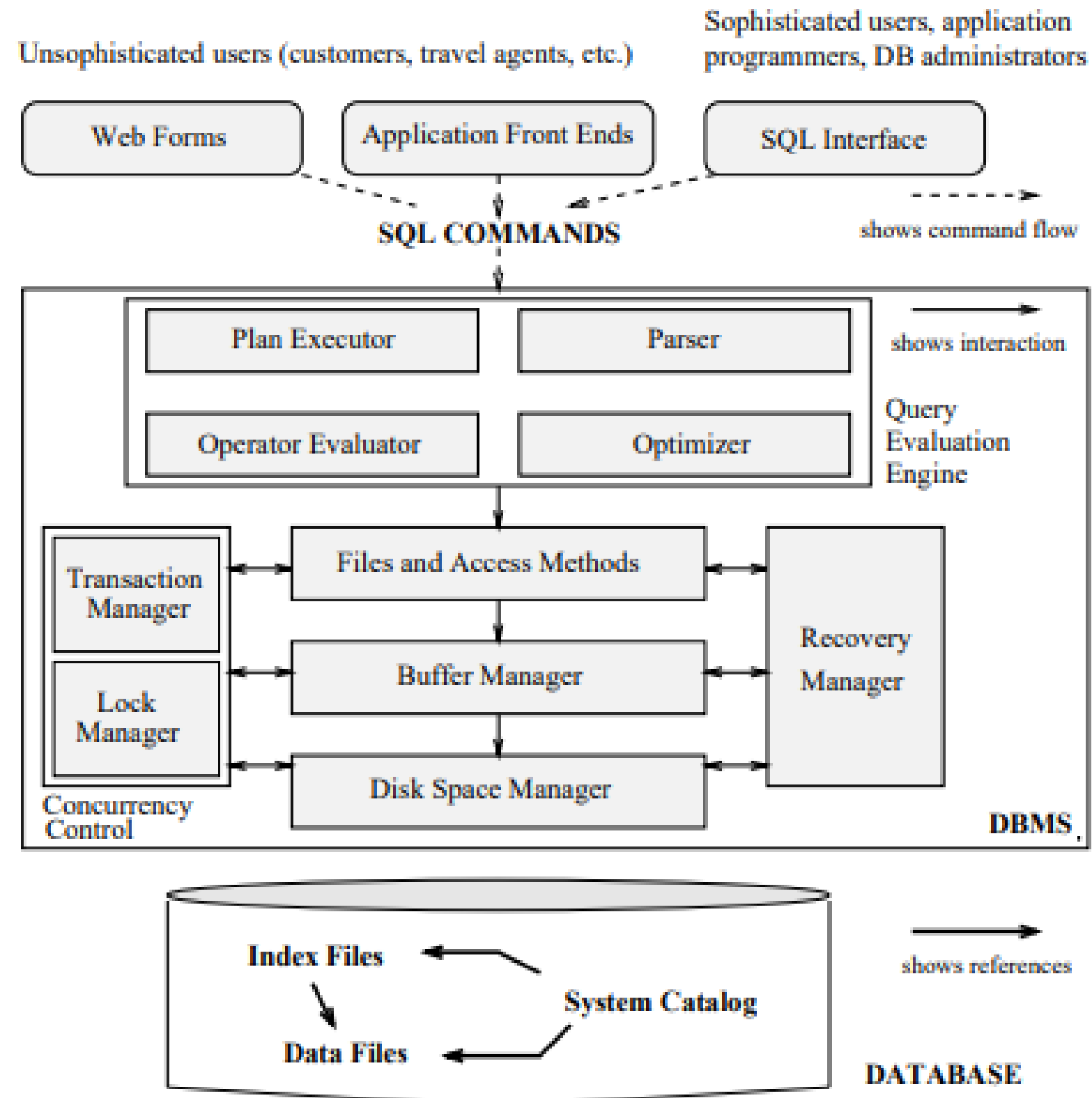


- ❑ A typical DBMS is based on the relational data model
- ❑ DBMS
 - accepts SQL commands generated from a variety of user interfaces, produces query evaluation plans,
 - executes these plans against the database, and
 - returns the answers
- ❑ Execution plan is a blueprint for evaluating a query prepared in evaluation engine
- ❑ Files storage and access methods in another sub-layer
- ❑ Lowest layer of the DBMS software deals with management of space on disk





Entity -Relationship Diagram





DBMS Architecture -Components



Disk Space Manager

allocate, deallocate, read, and write pages through (routines provided by) this layer, called the

Buffer Manager

brings pages in from disk to main memory as needed in response to read requests

Transaction Manager

ensures that transactions request and release locks according to a suitable locking protocol and schedules the execution transactions

Lock Manager

which keeps track of requests for locks and grants locks on database objects when they become available

Recovery Manager

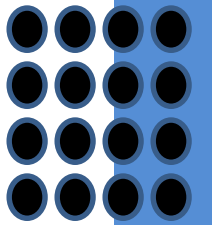
responsible for maintaining a log, and restoring the system to a consistent state after a crash

Execution Plan

A blueprint for evaluating a query, and is usually represented as a tree of relational operators

Query Optimizer

uses information about how the data is stored to produce an efficient execution plan for evaluating the query





References



1. Raghu Ramakrishnan, "Database Management Systems", Fourth Edition, McGrawHill College Publications, 2015.
2. Abraham Silberschatz, Henry. F. Korth and S. Sudharshan, "Database system Concepts", Third Edition, Tata McGraw Hill, 2017.
3. Ramez Elmasri and Shamkant Navathe, "Fundamentals of Database Systems", Seventh Edition, Pearson Education Delhi, 2017
4. Ganesh Chandra Deka, ["NoSQL: Database for Storage and Retrieval of Data in Cloud"](#), CRC Process, 2017



THANK YOU

