Database System Structure, Architecture (CLASS-L3)

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DATABASE SYSTEM STRUCTURE

- **Storage Manager**
  - It is a program module that provides the interface between the low level data stored in the database, the application programs and the queries submitted to the system.

- **Query Processor**
  - It helps in accessing data from a database in a simple manner.
Architecture

- Defines the structure of the system
- Identify the Components
- Define function of each component
- Inter-relation and interactions between each components defined
Database Architecture

- Centralized DBMS Architecture
- Client/Server Architecture
  - Two-Tier
    - Client – Query Server (or Transaction Server)
      - ODBC, JDBC
    - Client – Data Server
  - Three-Tier and n-Tier for Web applications
    - Introduces middle-tier (application server or web server)
      - Business rules
Centralized System Architecture

- Run on a single computer system and do not interact with other computer systems
- General-purpose computer system
- Single-user system
- Multi-user system
A Centralized Computer System
Figure 2.5
Logical two-tier client/server architecture.
Figure 2.6
Physical two-tier client/server architecture.
Figure 2.7
Logical three-tier client/server architecture, with a couple of commonly used nomenclatures.
Advantages of Client-Server Architecture

- More efficient division of labor
- Ability to use familiar tools on client machine
- Full DBMS functionality provided to client machines
- Proper Utilization of Resources
- Better System performance/price