DBMS NOTES FOR BEGINNERS!

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* What is Database?

→ A database is a collection of related data which represents some aspects of the real world. A database System is designed to be built and populated with data for a certain task.

* What is DBMS?

→ Database Management system (DBMS) is a software for storing and retrieving users data while considering appropriate security measures. It consists of a group of programs which manipulates the database. The DBMS accepts the request for data.

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from an application and instructs the operating system to provide the specific data. In large system, a DBMS helps users and other third party software to store and retrieve data.

* Types Of DBMS

Hierarchical | Network | Relational | Object Oriented

These are the four main types of Database management Systems.

* Hierarchical DBMS

→ In a hierarchical database, model data is organized in a tree-like Structure. Data is stored hierarchically format. Data represented using a parent, child relationship. In hierarchical DBMS parent may have many children but children

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have only one parent.

* Network Model

→ The network database model allows each child to have multiple parents. It helps you to address the need to model more complex relationships like as the order / parts many to many relationship. In this model, entities are oraganised in a graph which can be accessed through several paths.

* Relational Model

→ Relational DBMS is the most widely used DBMS model because it is one of the easiest. This model is based on normalising data in the rows and columns of the tables relational model stored in fixed structures and manipulated using SQL.

* Object-Oriented Model

→ In this data stored in the form of

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objects. The structure which is called classes while display data within it. It is one of the components of DBMS that defines a database as a collection of objects which stores both data members, values and operations.

* DBMS Vs FLAT FILE

DBMS	Flat File Management System
Multi-User access	It does not support multi-user access.
Design to fulfill the need for small and large business.	It is only limited to smaller DBMS System.
Remove redundancy and integrity.	Redundancy and integrity issues.
Expensive. But in the longterm total cost of ownership is cheap.	Its cheaper.
Easy to implement complicated transactions	No support for complicated transactions.

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* Characteristics of DBMS

- Provides security and removes redundancy.
- Self-describing nature of a data-base system.
- Insulation between programs and data abstraction.
- Support of multiple views of the data.
- Sharing of data and multi-user Transaction processing.
- Data base management software allows entities and relations among them to form tables.
- It follows the ACID concept (Atomicity, consistency, Isolation, and durability).
- DBMS supports multiuser environment that allows users to access and manipulate data in parallel.

* Applications of DBMS

Sector	Use of DBMS
Banking	For customer information, account activities, payments, deposits, loans, etc.

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Airlines	For reservation and schedule information.
Sales	Use for storing customer, product, and sales information.
Universities	For student information, course registrations, colleges and grades.
Telecommunication	It helps to keep call records, monthly bills, maintaining balances, etc.
Finance	For storing information about stock, sales and purchases of financial instruments like Stocks and bonds.
Manufacturing	It is used for the management of supply chain for tracking production of items. Inventories status in warehouses.

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HR Management	For information about employees, Salaries, payroll, deduction, generation of paychecks, etc.

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