TOPS TECHNOLOGY

Module 4 – Introduction to DBMS

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SQL View

1. What is a view in SQL, and how is it different from a table?

➤ A **view** in SQL is a virtual table that is created by a query. It does not store data physically but retrieves data dynamically from one or more tables whenever it is accessed.

Aspect	View	Table
Definition	A virtual table based on a SQL query.	A physical database object storing data.
Storage	Does not store data; retrieves data dynamically.	Stores data physically in the database.
Creation	Created using the `CREATE VIEW` statement.	Created using the `CREATE TABLE` statement.
Updation	Updates affect the underlying tables (if allowed).	Data is updated directly in the table.
Use Case	Used for simplifying complex queries or securing data access.	Used to store and manage data permanently.

2.Explain the advantages of using views in SQL databases.

➢ **Advantages of Using Views in SQL Databases**:

➢ **Simplifies Complex Queries**: Encapsulates complex queries into reusable, simpler structures.

➢ **Enhanced Security**: Restricts access to specific data, ensuring controlled access.

➢ **Data Abstraction**: Provides a simplified view of data, hiding underlying complexity.

➢ **Reusability**: Can be reused in multiple queries, reducing redundancy and ensuring consistency.

➢ **Logical Data Independence**: Shields users from changes in the underlying table structure.

➢ **Aggregation and Summarization**: Predefines summaries or aggregations for easier analysis.

➢ **Easier Maintenance**: Updates to a view propagate to all dependent queries automatically.

➢ **Performance Optimization**: Optimized by the database in some cases, especially with materialized views.