



## Warehousing and SQL Concepts 🏛️

- ◆ Data Warehousing Basics 🗄️
  - Centralized storage for structured data.
  - Used for analytics and reporting.
  - Supports OLAP (Online Analytical Processing).

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### ◆ SQL Query Optimization 🚀

- Reducing query execution time.
- Optimizing SELECT, JOIN, and WHERE clauses.
- Using EXPLAIN PLAN to analyze queries.

### ◆ Indexing and Partitioning 📌

- Indexing speeds up searches.
- Partitioning divides large tables for better performance.
- Types: Range, List, Hash, and Composite partitioning.



## Optimization & Vacuums ⚙️

- ◆ Query Performance Tuning 🎯
  - Eliminating unnecessary computations.
  - Using proper indexing and partitioning.
  - Avoiding SELECT \* and optimizing JOINS.

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### ◆ Data Compaction & Vacuuming 🖌️

- Removes deleted or obsolete data.
- Reduces storage size and improves performance.
- In databases like PostgreSQL, VACUUM reclaims space.

### ◆ Caching Strategies 🔄

- Storing frequently accessed data in memory.
- Reducing redundant computations.
- Using materialized views and query caching.