

1. SQL vs NoSQL (Design level question)

2. Categorization of SQL Commands (DDL | DML | DQL | TCL)

1. DDL (Data Definition Language)

- Commands used to define, alter, or delete database objects.
 - CREATE
 - ALTER
 - DROP
 - TRUNCATE
 - RENAME

2. DML (Data Manipulation Language)

- Commands used to retrieve, insert, update, or delete data in tables.
 - SELECT
 - INSERT
 - UPDATE
 - DELETE

3. DCL (Data Control Language)

- Commands used to control access to the database.
 - GRANT
 - REVOKE

4. TCL (Transaction Control Language)

- Commands used to manage database transactions.
 - COMMIT
 - ROLLBACK
 - SAVEPOINT
 - SET TRANSACTION

5. DQL (Data Query Language)

- **SELECT** (also considered part of DML in broader contexts).

3. SQL Foundation

1. Data Types in SQL

2. Basic SQL Commands:

3. Filtering Data:

- WHERE Clause
- Comparison Operators
- Logical Operators (AND, OR, NOT)
- IN, BETWEEN, LIKE

4. Sorting Data:

- ORDER BY Clause
 - 5. Aggregate Functions:
 - COUNT, SUM, AVG, MAX, MIN
 - 6. GROUP BY and HAVING Clauses
 - 7. Joins:
 - INNER JOIN
 - LEFT JOIN
 - RIGHT JOIN
 - FULL OUTER JOIN
 - CROSS JOIN
 - 8. Subqueries:
 - Single-row Subqueries
 - Multi-row Subqueries
 - Correlated Subqueries
 - 9. Set Operations:
 - UNION
 - INTERSECT
 - EXCEPT
 - 10. Constraints:
 - Primary Key
 - Foreign Key
 - Unique
 - Check
 - Default
 - 11. Transactions:
 - COMMIT
 - ROLLBACK
 - SAVEPOINT
 - 12. Views
 - 13. Stored Procedures and Functions
 - 14. Basic Database Design Concepts
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4. Widely Used SQL Topics (80/20 Rule)

1. **Joins:** INNER, LEFT, RIGHT, FULL
2. **Subqueries:** Inline, Correlated Subqueries
3. **Indexes:** Basics and Performance Implications
4. **Aggregations:** COUNT, SUM, AVG, MIN, MAX, GROUP BY, HAVING
5. **Common Table Expressions (CTEs):** WITH clause
6. **Window Functions:** ROW_NUMBER, RANK, LAG, LEAD
7. **Transactions:** COMMIT, ROLLBACK, Isolation Levels
8. **Query Performance Tuning:** Execution Plans, Optimizing Queries
9. **Data Integrity:** Primary Keys, Foreign Keys, Unique Constraints
10. **Handling NULL Values:** COALESCE, ISNULL, NULL-safe Comparisons