

SQL Basics – Quick Reference (for Project Coordinators)

What is SQL?

- SQL (Structured Query Language) → Used to manage data in relational databases.
- Common operations: CREATE, READ, UPDATE, DELETE (CRUD).

Key Database Concepts

- Table → Stores data in rows & columns.
- Row (Record): A single entry.
- Column (Field): A property of data.

Keys

- Primary Key: Uniquely identifies each row (No duplicates/NULLs).
- Foreign Key: Links one table to another.

SQL Commands

- DDL (Definition): CREATE, ALTER, DROP
- DML (Manipulation): INSERT, UPDATE, DELETE
- DQL (Query): SELECT
- DCL (Control): GRANT, REVOKE

Common Queries

Select data:

SELECT name, email FROM Customers;

Filter records:

SELECT * FROM Customers WHERE city = 'Delhi';

Insert record:

INSERT INTO Customers (name, city) VALUES ('Reefa', 'Mumbai');

Update record:

UPDATE Customers SET city = 'Chennai' WHERE id = 1;

Delete record:

DELETE FROM Customers WHERE id = 1;

Joins

INNER JOIN	Matching records in both tables
LEFT JOIN	All from left + matches from right
RIGHT JOIN	All from right + matches from left

FULL JOIN	All records from both tables
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Aggregate Functions

COUNT()	Number of rows
SUM()	Total
AVG()	Average
MAX()	Largest value
MIN()	Smallest value

Other Key Points

- Normalization: Organizing data to avoid redundancy.
- Index: Speeds up search but slows updates.
- Stored Procedure: Saved set of SQL commands.
- UNION vs UNION ALL: UNION removes duplicates; UNION ALL keeps all.
- OLTP vs OLAP: OLTP = transactions; OLAP = reporting/analysis.

Tip for Interview: As a Project Coordinator, show that you understand SQL basics, can read simple queries, and validate test data/reports if needed.