

SQL Notes: Beginner to Interview Level

These notes cover essential SQL concepts with examples, suitable for beginners and job seekers.

1. What is SQL?

SQL (Structured Query Language) is used to create, read, update, and delete data in relational databases.

2. Types of SQL Commands

- 1 **DDL**: CREATE, ALTER, DROP, TRUNCATE
- 2 **DML**: INSERT, UPDATE, DELETE
- 3 **DQL**: SELECT
- 4 **DCL**: GRANT, REVOKE
- 5 **TCL**: COMMIT, ROLLBACK, SAVEPOINT

3. SELECT Query

Example:

```
SELECT name, salary FROM employees WHERE salary > 50000;
```

4. WHERE, ORDER BY, LIMIT

WHERE filters rows, ORDER BY sorts results, LIMIT restricts the number of rows.

5. Aggregate Functions

- 1 COUNT(), SUM(), AVG(), MIN(), MAX()

6. GROUP BY and HAVING

GROUP BY aggregates data; HAVING filters aggregated results.

7. Joins

- 1 INNER JOIN: Matching rows from both tables
- 2 LEFT JOIN: All rows from left table
- 3 RIGHT JOIN: All rows from right table
- 4 FULL JOIN: All rows from both tables

8. Subquery

A query inside another query.

9. Index

Indexes improve SELECT performance but can slow down INSERT/UPDATE.

10. Interview Tips

- 1 Focus on Joins, GROUP BY, Subqueries

2 Explain with real-life examples