SQL NOTES WITH EXAMPLES

1. What is SQL?

SQL (Structured Query Language) is a standard language for storing, manipulating, and retrieving data in databases.

2. Basic SQL Commands:

2.1. CREATE DATABASE

Used to create a new database.

Example:

CREATE DATABASE StudentDB;

2.2. CREATE TABLE

Used to create a new table in the database.

Example:

CREATE TABLE Students (

    ID INT PRIMARY KEY,

    Name VARCHAR(50),

    Age INT,

    Grade VARCHAR(10)

);

2.3. INSERT INTO

Used to insert data into a table.

Example:

INSERT INTO Students (ID, Name, Age, Grade)

VALUES (1, 'Rajshri', 20, 'A');

2.4. SELECT

Used to select data from a database.

Example:

SELECT * FROM Students;

SELECT Name, Grade FROM Students WHERE Age > 18;

2.5. UPDATE

Used to update existing records.

Example:

UPDATE Students SET Grade = 'A+' WHERE ID = 1;

2.6. DELETE

Used to delete records.

Example:

DELETE FROM Students WHERE ID = 1;

2.7. WHERE Clause

Used to filter records.

Example:

SELECT * FROM Students WHERE Grade = 'A';

2.8. ORDER BY

Used to sort the result-set.

Example:

SELECT * FROM Students ORDER BY Name ASC;

2.9. GROUP BY and HAVING

Used with aggregate functions to group result-set.

Example:

SELECT Grade, COUNT(*) FROM Students GROUP BY Grade HAVING COUNT(*) > 1;

2.10. JOINS

Used to combine rows from two or more tables.

Example:

SELECT Students.Name, Marks.Score

FROM Students

INNER JOIN Marks ON Students.ID = Marks.StudentID;

More commands include:

- ALTER TABLE

- DROP TABLE

- CREATE INDEX

- UNION, INTERSECT

Practice regularly to master SQL queries.