

# ■ SQL Notes

## 1. Introduction

- SQL (Structured Query Language): Used to interact with relational databases.
- Functions: CRUD (Create, Read, Update, Delete).

## 2. Basic Commands

- CREATE DATABASE db\_name; --> Create new database
- USE db\_name; --> Select database
- CREATE TABLE table\_name (...);
- DROP TABLE table\_name; --> Delete table

## 3. Data Types (Common)

- INT: Numbers
- VARCHAR(n): Strings
- DATE: Dates
- FLOAT/DECIMAL: Decimal numbers

## 4. DML (Data Manipulation Language)

- INSERT INTO table\_name VALUES (...);
- SELECT \* FROM table\_name;
- UPDATE table\_name SET col=value WHERE condition;
- DELETE FROM table\_name WHERE condition;

## 5. Clauses

- WHERE: Filters rows
- ORDER BY: Sort (ASC/DESC)
- GROUP BY: Group rows by column
- HAVING: Condition after GROUP BY
- DISTINCT: Unique values

## 6. Joins

- INNER JOIN: Matching rows only
- LEFT JOIN: All from left + match from right
- RIGHT JOIN: All from right + match from left
- FULL JOIN: All rows from both sides

## 7. Functions

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

## 8. Subqueries

Example: SELECT name FROM employees

WHERE salary > (SELECT AVG(salary) FROM employees);

#### 9. Keys

- Primary Key: Unique + Not Null
- Foreign Key: Reference another table
- Unique: No duplicates
- Not Null: Cannot be empty

#### 10. Constraints

- CHECK: Condition on column
- DEFAULT: Set default value