📘 SQL Queries Cheat Sheet

# DDL (Data Definition Language)

**-- Create a database**CREATE DATABASE college;

**-- Show all databases**SHOW DATABASES;

**-- Use a database**USE college;

**-- Drop a database**DROP DATABASE college;

**-- Create a table**CREATE TABLE User (  
 Id INT PRIMARY KEY,  
 Name VARCHAR(50),  
 Course VARCHAR(20),  
 CGPA DECIMAL(3,2)  
);

**-- Create a table with constraints**

CREATE TABLE User (  
 Id INT PRIMARY KEY,  
 Name VARCHAR(50),  
 Course VARCHAR(20),  
 Age Int,

CONSTRAINTS age\_check CHECK (Age > = 18)  
);

**-- Show all tables**SHOW TABLES;

**-- Describe table structure**DESCRIBE User;

**-- Delete a table**DROP TABLE User;

**-- Alter table: Add a new column**ALTER TABLE User ADD Email VARCHAR(100);

**-- Alter table: Drop a column**ALTER TABLE User DROP COLUMN Course;

**-- Alter table: Rename table**ALTER TABLE old\_table RENAME TO new\_table;

**-- Alter table: Rename a column**ALTER TABLE User RENAME COLUMN Name TO FullName;

**-- Alter table: Modify column datatype**ALTER TABLE User MODIFY COLUMN CGPA FLOAT(3,2);

**-- Alter table: Change column name + datatype**ALTER TABLE User CHANGE COLUMN CGPA GPA DECIMAL(4,2);

**-- Add NOT NULL constraint**ALTER TABLE User MODIFY Email VARCHAR(100) NOT NULL;

# DML (Data Manipulation Language)

**-- Insert single row**INSERT INTO User (Id, Name, Course, CGPA) VALUES (101, 'Suraj Sharma', 'B.Tech', 8.84);

**-- Insert multiple rows**INSERT INTO User (Id, Name, Course, CGPA)   
VALUES   
(102, 'Paras Mehta', 'B.Tech', 8.50),  
(103, 'Lassi', 'B.Tech', 8.00);

**-- Update row data**UPDATE User SET CGPA = 9.0 WHERE Id = 101;

**-- Update Department example**UPDATE Department SET GroupName = 'Room' WHERE GroupName = 'Ward';

**-- Update Fruit example**UPDATE Fruit SET UnitId = 2 WHERE FruitName = 'Apple' AND UnitId = 1;

**-- Delete single row**DELETE FROM User WHERE Id = 103;

**-- Delete all rows (but keep table)**DELETE FROM User;

**-- Truncate table (remove all rows)**TRUNCATE TABLE User;

# DQL (Data Query Language)

**-- Select all rows**SELECT \* FROM User;

**-- Select specific columns**SELECT Name, CGPA FROM User;

**-- Select with condition**SELECT \* FROM User WHERE CGPA > 8.5;

**-- Select with sorting**SELECT \* FROM User ORDER BY CGPA DESC;

**-- Select with alias**SELECT Name AS Student, CGPA AS Score FROM User;

**-- Select top 2 students**SELECT \* FROM User ORDER BY CGPA DESC LIMIT 2;

**-- Find duplicate CGPAs**SELECT CGPA, COUNT(\*)   
FROM User   
GROUP BY CGPA   
HAVING COUNT(\*) > 1;

**-- Find students with same course**SELECT Course, GROUP\_CONCAT(Name) AS Students  
FROM User  
GROUP BY Course;

# Aggregate Functions

**-- Count rows**SELECT COUNT(\*) FROM User;

**-- Minimum CGPA**SELECT MIN(CGPA) FROM User;

**-- Maximum CGPA**SELECT MAX(CGPA) FROM User;

**-- Average CGPA**SELECT AVG(CGPA) FROM User;

**-- Sum of CGPAs**SELECT SUM(CGPA) FROM User;

# TCL (Transaction Control Language)

**-- Begin a transaction**START TRANSACTION;

**-- Commit a transaction**COMMIT;

**-- Rollback a transaction**ROLLBACK;

**-- Create a savepoint**SAVEPOINT SAVEPOINT\_NAME;

# DCL (Data Control Language)

**-- Grant permission**GRANT SELECT, INSERT ON college.\* TO 'user'@'localhost';

**-- Revoke permission**REVOKE INSERT ON college.\* FROM 'user'@'localhost';