

# SQL Topics - Summary and Descriptions

## ***Data Definition Language (DDL)***

Covers SQL commands like CREATE, ALTER, and DROP used to define, modify, or remove database structures (e.g., tables, views, schemas).

## ***Creating and Modifying Database Objects***

Focuses on how to create new tables, views, or indexes and how to alter their structure (e.g., adding/removing columns).

## ***Data Manipulation Language (DML)***

Includes INSERT, UPDATE, DELETE, and SELECT statements used to insert, view, and modify data within database tables.

## ***Inserting, Viewing, and Modifying Database Data***

Practical use of DML commands to add new records, retrieve data, and make changes to existing data entries.

## ***Transaction Management***

Involves COMMIT and ROLLBACK statements to ensure data consistency and support atomic operations (all-or-nothing execution).

## ***Domain Integrity and Constraints***

Defines and enforces rules on column values through constraints (e.g., NOT NULL, UNIQUE, CHECK) to maintain data accuracy.

## ***Aggregate Functions and GROUP BY Clause***

Uses functions like SUM, AVG, COUNT, MAX, and MIN to perform calculations on grouped data.

## ***HAVING Clause and Subqueries***

HAVING filters results after grouping. Subqueries allow nested queries inside other SQL statements for advanced data retrieval.

## ***Joining Multiple Tables***

Explains INNER JOIN, OUTER JOIN, and CROSS JOIN to combine data from multiple tables based on relationships or Cartesian products.

## ***Conditions Using Multiple Columns***

Focuses on writing SQL conditions involving more than one column, useful for complex filtering and comparisons.

***Natural Join***

A special join that automatically connects tables using columns with the same name and data type, simplifying query writing.