

Data Manipulation in SQL

Aggregate function: A function such as COUNT, SUM, AVG, MIN, or MAX that computes a single summary value over a set of rows and is often used with GROUP BY or inside window functions

CASE statement: A conditional expression in SQL that evaluates one or more WHEN conditions and returns the corresponding THEN value or an ELSE value, producing a single column in the query result

Common Table Expression (CTE): A named temporary result set declared with WITH at the start of a query that improves readability and can be referenced like a table in the main query

Correlated subquery: A subquery that references columns from the outer query and is re-executed for each row of the outer result set, making it dependent on the outer query's current row

ELSE clause: The optional final branch of a CASE statement that provides a default value when none of the WHEN conditions are true

END (CASE end) and Alias: END terminates a CASE expression and an alias is a user-defined column name assigned to the CASE result so it can be referenced like any other column

GROUP BY: A clause that groups rows sharing the same values in specified columns so aggregate functions can compute summary statistics per group

Knowledge base (FAQ): A structured set of domain-specific information or question–answer pairs that agents can consult (often via a lookup tool) to provide accurate, up-to-date responses

Homogeneity (in arrays): The property that all elements in a NumPy array share the same data type, which reduces per-element overhead and enables contiguous memory layouts for speed and memory efficiency

OVER clause: The required clause for window functions that defines the window over which the function operates, and can include ORDER BY and PARTITION BY specifications

PARTITION BY: An OVER clause option that divides the result set into groups (partitions) so the window function computes separate values for each partition

RANK: A window function that assigns a rank number to each row within a partition based on the ordering of one or more columns, with tied values receiving the same rank and gaps in numbering

ROUND: A numeric function that rounds a numeric expression to a specified number of decimal places to improve readability of aggregated or averaged results

Scalar subquery: A subquery that returns a single value (one row and one column) and is typically used in SELECT or WHERE clauses to supply an aggregate or comparative constant

Simple subquery: A standalone query nested inside another query that can be executed independently and is evaluated once to supply a value, list, or table to the outer query

Sliding window: A window function pattern that calculates values relative to the current row using a moving frame (defined by ROWS BETWEEN), commonly used for running totals and moving averages

SQL: A domain-specific language used to query, manipulate, and manage data stored in relational databases by writing declarative statements like SELECT, INSERT, UPDATE, and DELETE

Subquery in FROM (derived table): A subquery placed in the FROM clause that returns a temporary table with an alias, enabling complex reshaping or pre-aggregation before joining or selecting from it

THEN clause: The part of a CASE statement that defines the output value returned when its preceding WHEN condition evaluates to true

WHEN clause: A component of a CASE statement that specifies a logical test to evaluate, and if the test is true the CASE yields the associated THEN result

Window frame (ROWS BETWEEN): A specification within OVER that defines the start and end rows relative to the current row (e.g., UNBOUNDED PRECEDING, 1 PRECEDING, CURRENT ROW) used to limit the window for sliding calculations

Window function: A function that performs calculations across a set of rows related to the current row (the "window") without collapsing rows, enabling running totals, ranks, and moving averages

WITH clause: The SQL syntax used to define one or more CTEs before the main query, allowing sequential, named subqueries and easier organization of complex logic