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Introduction to Window Functions

Unlock powerful data insights with SQL window functions!

DEFINITION

> Window functions perform calculations across a set of table rows related to the current row. They allow for advanced data analysis without collapsing the result set.

KEY CONCEPTS

OVER clause

Defines the window of rows for the function to operate on.

PARTITION BY

Divides the result set into partitions to apply functions separately.

ORDER BY

Specifies the order of rows within each partition for calculations.

Aggregate Functions

Common functions like SUM, AVG, and COUNT can be used as window functions.

Frame Specification

Defines the specific rows in the window for calculations, such as ROWS or RANGE.

EXAMPLES

→ SELECT employee_id, salary, AVG(salary) OVER (PARTITION BY department) FROM employees;

→ SELECT order_id, order_date, ROW_NUMBER() OVER (ORDER BY order_date) FROM orders;

→ SELECT product_id, sales, SUM(sales) OVER (ORDER BY sales DESC ROWS BETWEEN UNBOUNDED PRECEDING AND CURRENT ROW) FROM sales_data;

MEMORY TIPS

★ Remember 'OVER' as the key to unlock window functions.

★ Think of 'PARTITION BY' as dividing a cake into slices for individual servings.

★ Visualize 'ORDER BY' as lining up rows for a race based on performance.

COMMON MISTAKES

✗ Forgetting to include the OVER clause, leading to errors.

✗ Misusing PARTITION BY, causing incorrect aggregations.

✗ Not specifying ORDER BY, resulting in unexpected row orders.

QUICK RECAP

Window functions enhance SQL queries by allowing calculations across rows without grouping. Key components include the OVER clause, PARTITION BY, and ORDER BY for precise data analysis.