

WEEK 8

Basic Aggregation Functions

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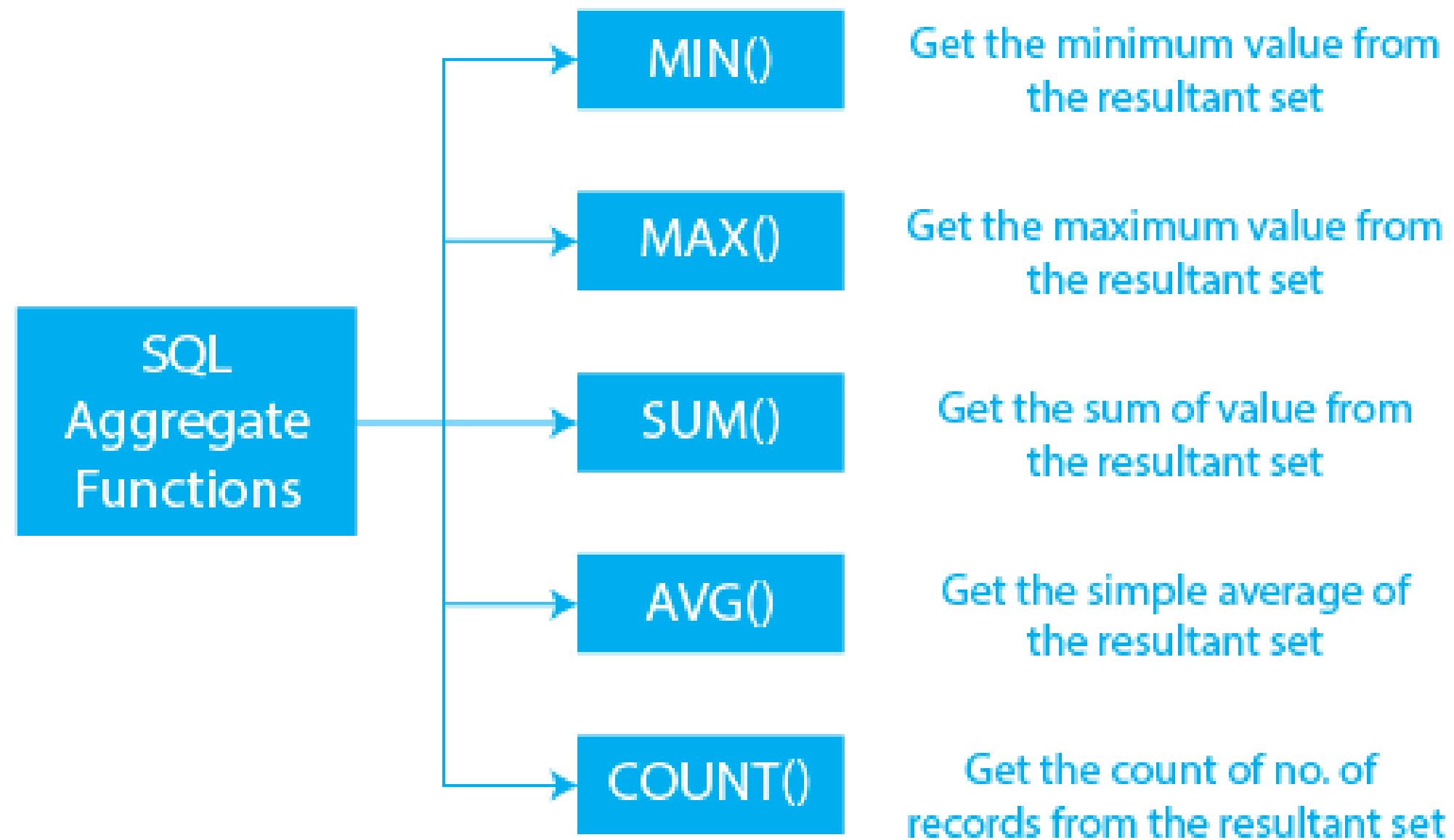


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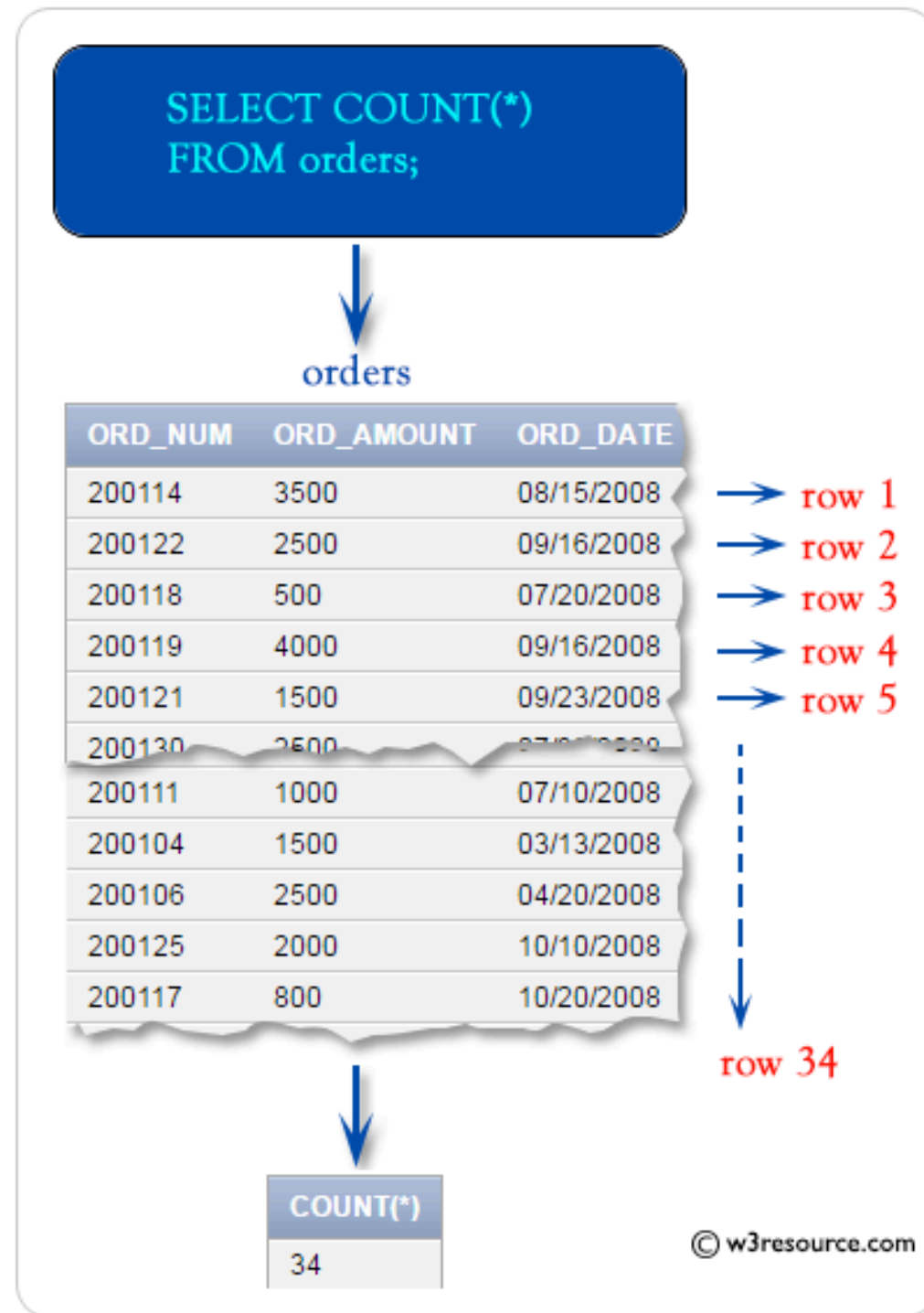
- Understand the purpose of aggregate functions.
- Learn how to use COUNT, SUM, AVG, MAX, and MIN
- Explore scenarios where aggregate functions are most useful.
- Understand how NULL values impact calculations
- Recap and Next Steps

What are Aggregate Functions?



Aggregate functions perform calculations on a set of values and return a single value.

COUNT: Counting Rows



Purpose:

- Calculates the number of rows that meet specific conditions.

Explanation:

- Counts all rows, including those with NULL values.

SUM: Calculating Totals

Table: Orders

order_id	item	amount	customer_id
1	Keyboard	400	4
2	Mouse	300	4
3	Monitor	12000	3
4	Keyboard	400	1
5	Mousepad	250	2

`SELECT SUM(amount) AS total_sales
FROM Orders;`

total_sales
13350

Purpose:

- Adds up all numeric values in a column.
- Useful for totals like sales, expenses, etc.

Explanation:

- Calculates the total sum of (amount).

AVG: Calculating Averages

Table: Customers

customer_id	first_name	last_name	age	country
1	John	Doe	31	USA
2	Robert	Luna	22	USA
3	David	Robinson	22	UK
4	John	Reinhardt	25	UK
5	Betty	Doe	28	UAE

`SELECT AVG(age) AS average_age
FROM Customers;`

average_age
25.6

Purpose:

- Finds the mean value of a numeric column.

Explanation:

- Calculates the average of (age)

MAX: Finding the Maximum Value

Table: Customers

customer_id	first_name	last_name	age	country
1	John	Doe	31	USA
2	Robert	Luna	22	USA
3	David	Robinson	22	UK
4	John	Reinhardt	25	UK
5	Betty	Doe	28	UAE

SELECT MAX(age)
FROM Customers;

MAX(age)

31

Purpose:

- Identifies the highest value in a numeric column.

Explanation:

Finds the largest value in the age column

MIN: Finding the Minimum Value

Table: Customers

customer_id	first_name	last_name	age	country
1	John	Doe	31	USA
2	Robert	Luna	22	USA
3	David	Robinson	22	UK
4	John	Reinhardt	25	UK
5	Betty	Doe	28	UAE

`SELECT MIN(age)
FROM Customers;`

MIN(age)

22

Purpose:

- Identifies the lowest value in a numeric column.

Explanation:

Finds the smallest value in the age column.

Recap and Next Steps

- Summary:
 - Aggregate functions simplify data analysis.
 - COUNT, SUM, AVG, MAX, and MIN are versatile and widely used.
 - Handle NULL values carefully when calculating aggregates.
- Next Steps:
 - Complete Week 8 Quiz