WEEK 10

Where & Having Statements

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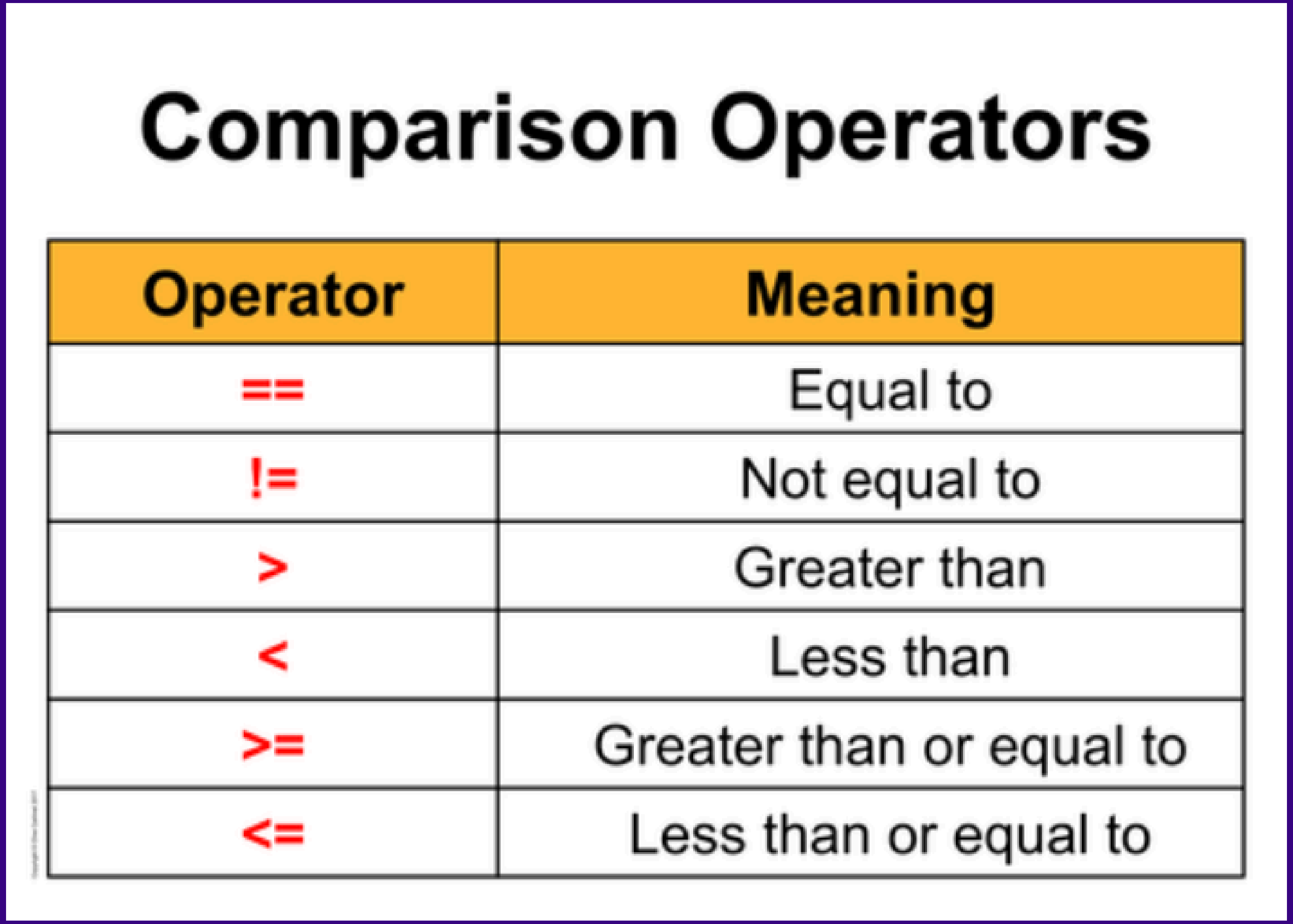
TABLE OF CONTENT

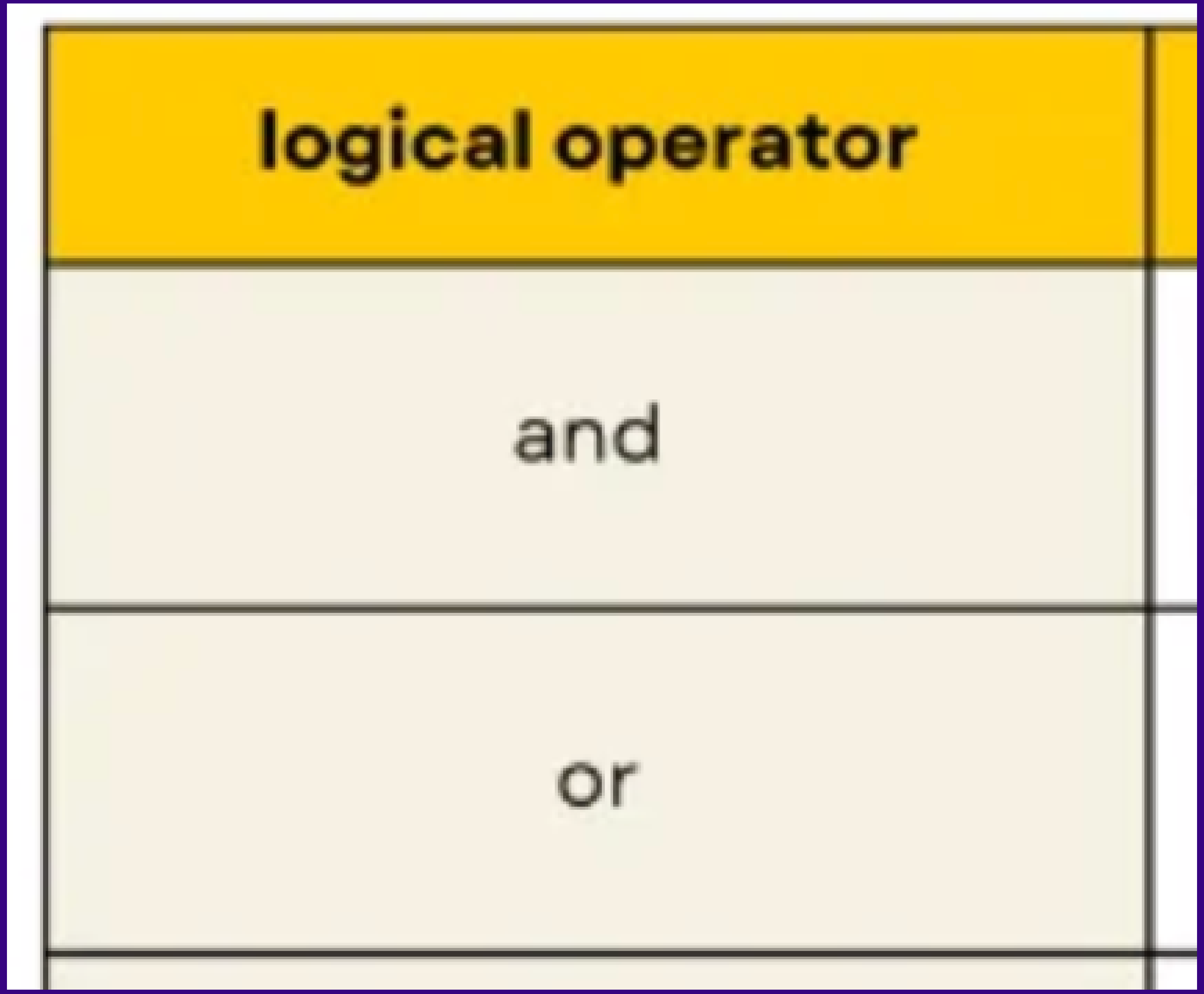
- WHERE Clause – Row-Level Filtering
- WHERE Clause – Multiple Conditions
- WHERE vs HAVING – Key Differences
- HAVING Clause – Group-Level Filtering
- Common Mistakes
- Recap and Next Steps

WHERE Clause – Row-Level Filtering



Comparison Operators

Operator	Meaning
==	Equal to
!=	Not equal to
>	Greater than
<	Less than
>=	Greater than or equal to
<=	Less than or equal to



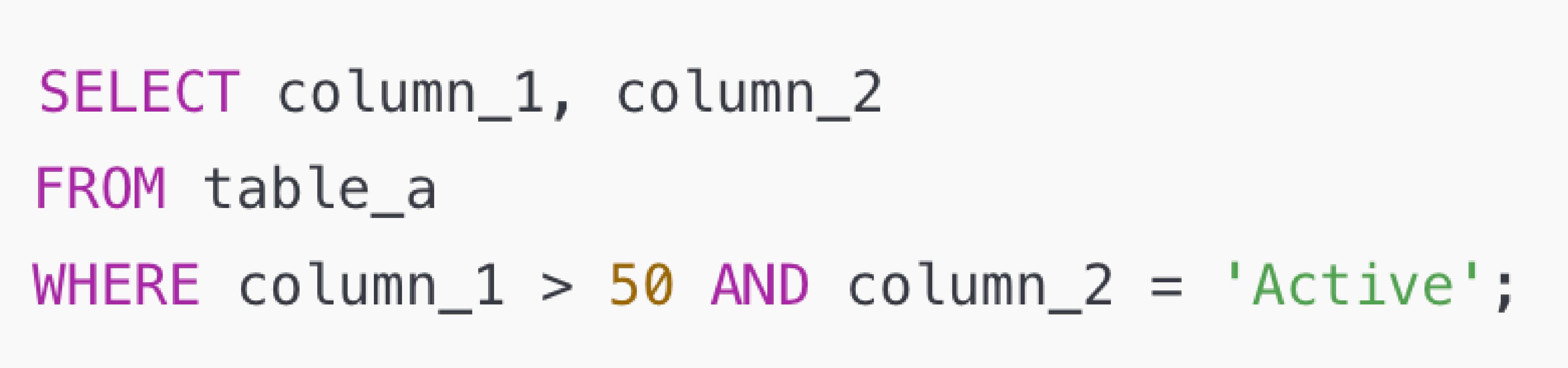
logical operator
and
or

Logical Operators:

- **AND:** Combines multiple conditions (both must be true).
- **OR:** At least one condition must be true.

WHERE Clause – Multiple Conditions

SQL Syntax Example (Multiple Conditions):



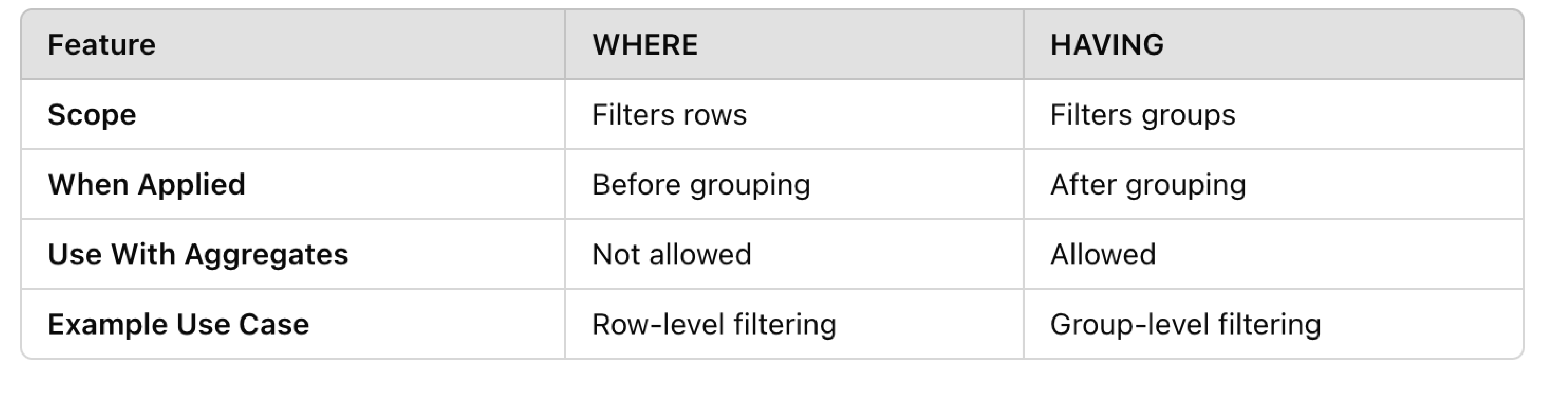
```
SELECT column_1, column_2
FROM table_a
WHERE column_1 > 50 AND column_2 = 'Active';
```

Explanation:

- Filter rows where column_1 is greater than 50.
- Additionally, only include rows where column_2 equals 'Active'.

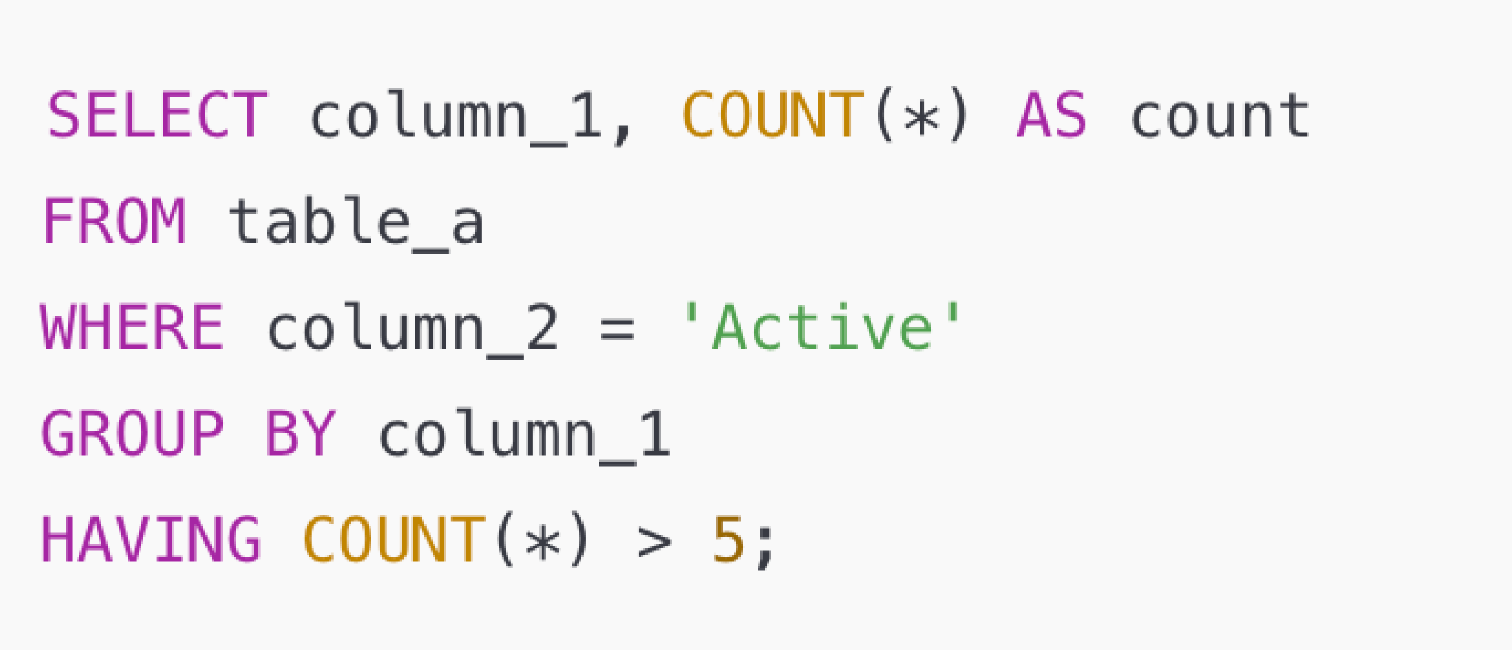
Best Practice Tip: Use parentheses for clarity in complex conditions.

WHERE vs HAVING – Key Differences



Feature	WHERE	HAVING
Scope	Filters rows	Filters groups
When Applied	Before grouping	After grouping
Use With Aggregates	Not allowed	Allowed
Example Use Case	Row-level filtering	Group-level filtering

SQL Syntax Example (WHERE + HAVING):



```sql
SELECT column_1, COUNT(*) AS count
FROM table_a
WHERE column_2 = 'Active'
GROUP BY column_1
HAVING COUNT(*) > 5;
```

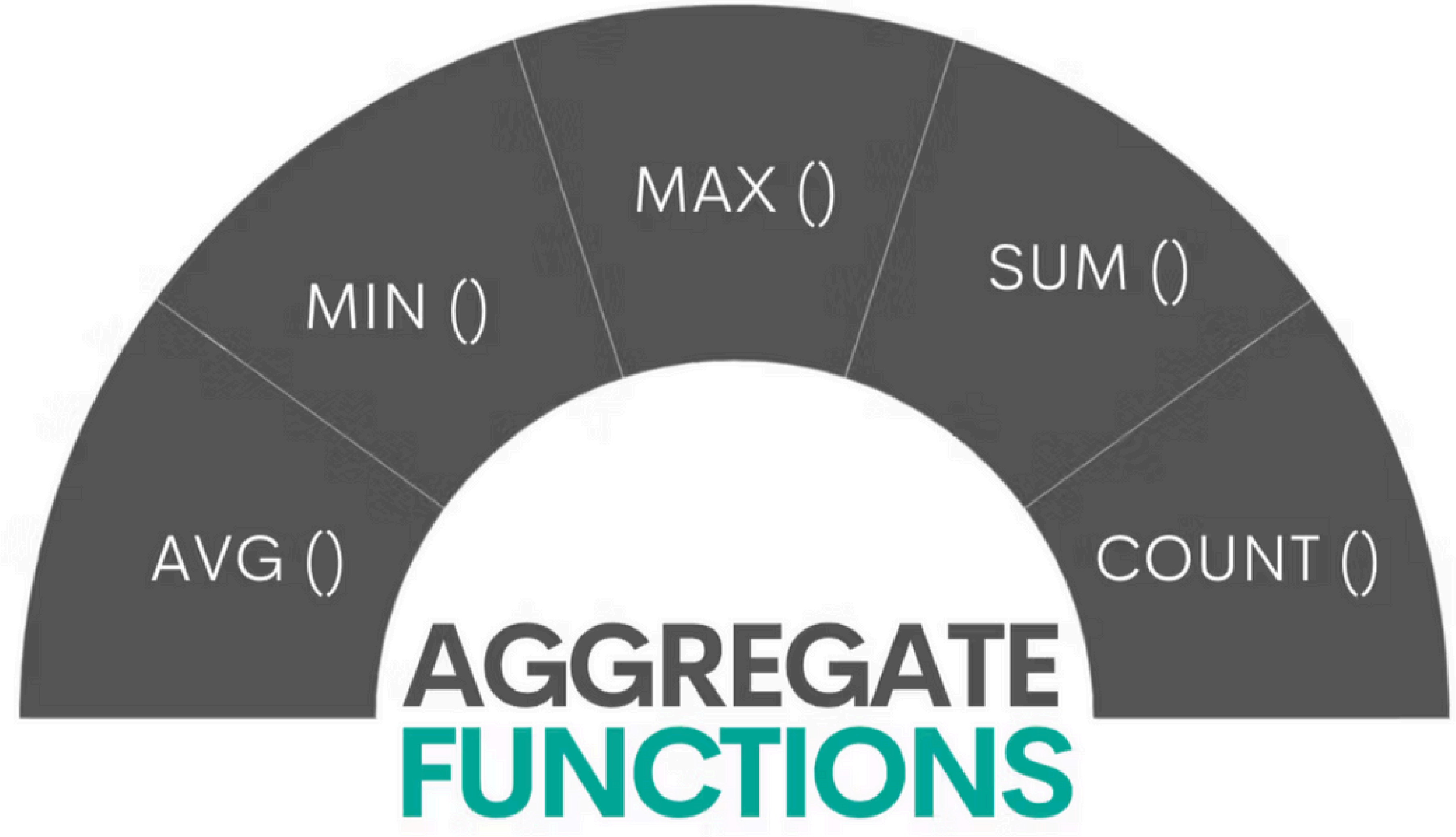
Explanation:

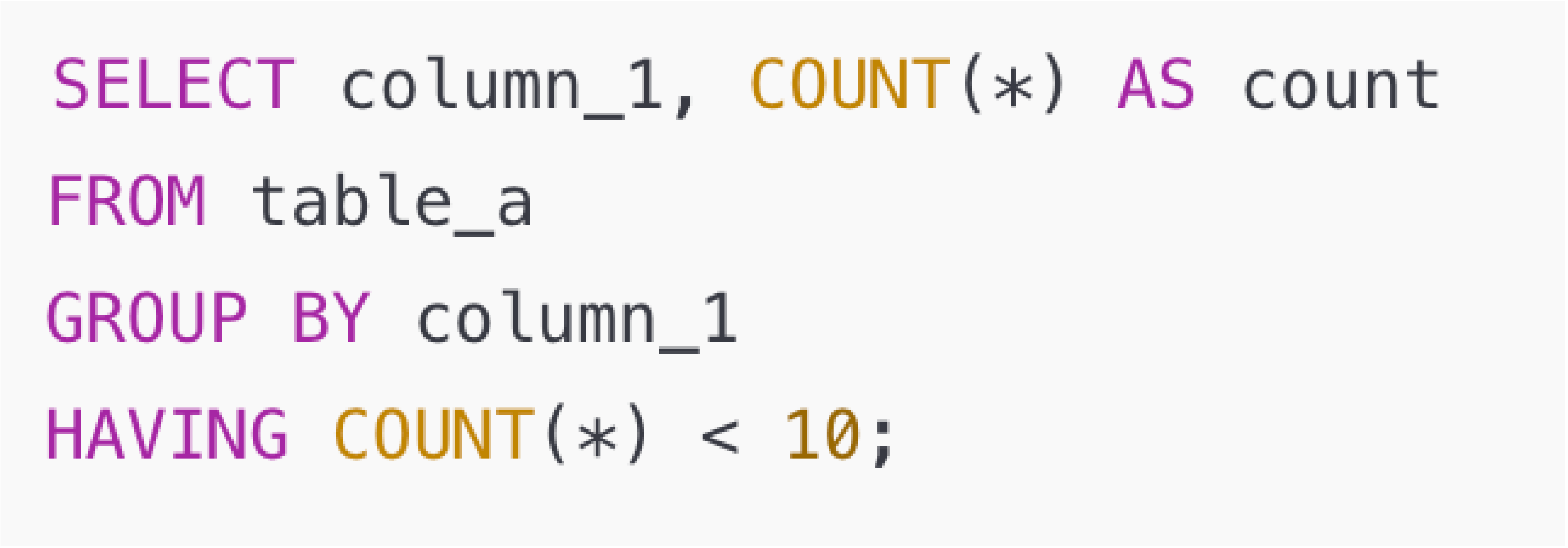
- Filters rows where column_2 is 'Active' (WHERE).
- Groups by column_1.
- Filters groups where the count is greater than 5 (HAVING).

HAVING Clause – Group-Level Filtering

Definition: The HAVING clause filters groups based on aggregate functions or grouping columns.

Use Case: Apply conditions to grouped data after aggregation.



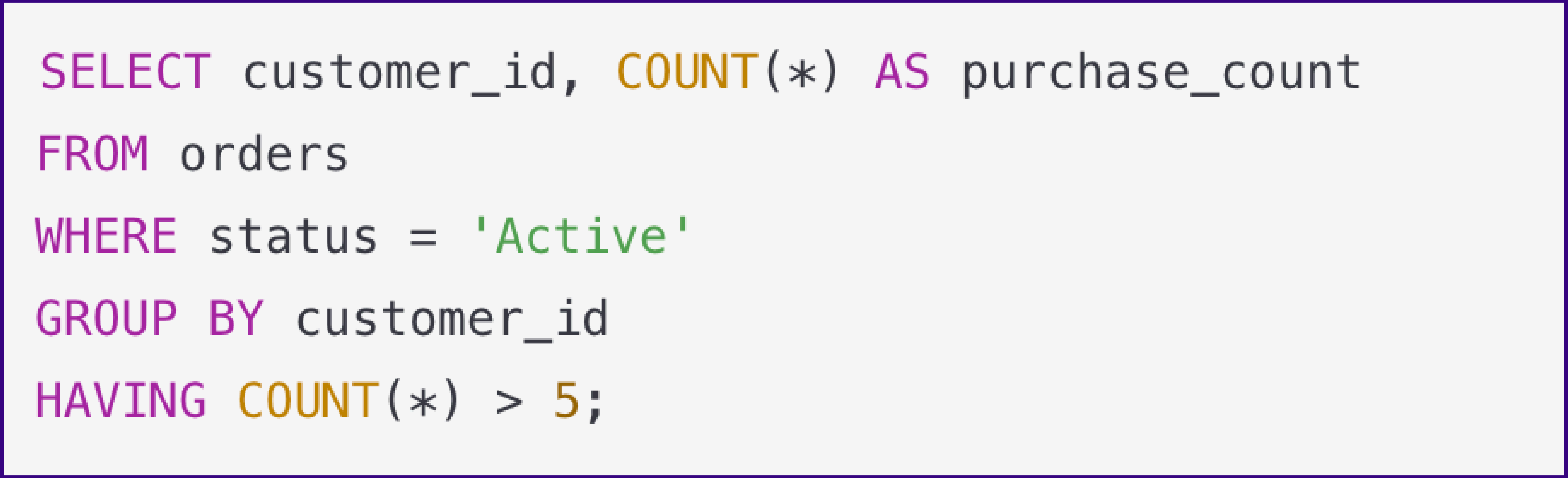


```
SELECT column_1, COUNT(*) AS count
FROM table_a
GROUP BY column_1
HAVING COUNT(*) < 10;
```

Explanation:

- Groups data by column_1.
- Filters groups where the count is less than 10.

Example – WHERE + HAVING Combined



```sql
SELECT customer_id, COUNT(*) AS purchase_count
FROM orders
WHERE status = 'Active'
GROUP BY customer_id
HAVING COUNT(*) > 5;
```

Explanation:

- Filter rows where status is 'Active' (WHERE).
- Group by customer_id.
- Filter groups where the purchase count exceeds 5 (HAVING).

Common Mistakes

- The WHERE clause filters rows before grouping, so attempting to use it for group-level conditions will result in an error or incorrect results.
- Aggregate functions like COUNT, SUM, or AVG cannot be used in WHERE because row-level filtering happens before aggregation.
- The HAVING clause relies on grouped data, and omitting GROUP BY will cause a syntax error or unintended behavior.
- SQL processes WHERE before GROUP BY and evaluates HAVING after aggregation, so placing clauses incorrectly will disrupt the query logic.

Recap and Next Steps

Key Takeaways:

- WHERE filters rows, HAVING filters groups.
- Understand the order of execution: WHERE → GROUP BY → HAVING

- Next Steps:
  - Complete Week 10 Quiz