

Why your SQL alias just errored.

D8A.ACADEMY/RESOURCES/SQL-EXECUTION-ORDER

01 The error everyone hits

The alias exists in your head, not yet in the engine.

```
SELECT price * quantity AS revenue
FROM sales
WHERE revenue > 1000;

-- ERROR: column 'revenue' does not exist
```

→ WHERE runs before SELECT, so at filter time the alias has not been created yet.

02 Written vs executed

Two orders, one mystery solved.

YOU WRITE

- 1. SELECT
- 2. FROM
- 3. WHERE
- 4. GROUP BY
- 5. HAVING
- 6. ORDER BY

ENGINE RUNS

- 1. FROM + JOINS
- 2. WHERE
- 3. GROUP BY
- 4. HAVING
- 5. SELECT: aliases born
- 6. ORDER BY: aliases visible

→ ORDER BY is the only clause that can use your aliases; it is the only one that runs after SELECT.

03 The two fixes

Repeat the expression, or hoist it into a CTE.

```
-- 1. repeat the expression
WHERE price * quantity > 1000;

-- 2. or name it in a CTE first
WITH t AS (
  SELECT *, price * quantity AS revenue
  FROM sales
)
SELECT * FROM t WHERE revenue > 1000;
```

→ Some engines (BigQuery, DuckDB) also offer QUALIFY and lateral aliases, but the CTE works everywhere.

▲ COMMON TRAPS

04 Trap: WHERE vs HAVING

WHERE filters rows before grouping. HAVING filters groups after.

```
-- wrong: aggregate in WHERE
WHERE SUM(amount) > 100 -- ERROR

-- right: aggregates live in HAVING
GROUP BY city
HAVING SUM(amount) > 100;
```

→ Same root cause: WHERE runs before GROUP BY, so no aggregate exists yet when it fires.