

CHEATSHEET

SQL Basics Cheatsheet

The core syntax every SQL learner needs on day one

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The anatomy of a SELECT query

Every SQL query that reads data is built from the same six clauses, always in this order — even though execution happens in a different order under the hood (see the Order of Execution tool on Sqlism for the full breakdown).
FULL CLAUSE ORDER

```
SELECT column1, column2      -- 1. columns to return
FROM table_name              -- 2. source table
WHERE condition              -- 3. row filter (before grouping)
GROUP BY column1             -- 4. collapse rows into groups
HAVING condition             -- 5. filter groups (after grouping)
ORDER BY column1 ASC         -- 6. sort the result
LIMIT 10;                   -- 7. cap the row count
```

WHY IT MATTERS
Written order ≠ execution order. SQL evaluates FROM → WHERE → GROUP BY → HAVING → SELECT → ORDER BY → LIMIT. That's why you can't reference a column alias in WHERE, but you can in ORDER BY.

The five statement families

Family	Statements	Purpose
DQL	SELECT	Query / read data
DML	INSERT, UPDATE, DELETE	Modify data
DDL	CREATE, ALTER, DROP, TRUNCATE	Modify schema/structure
DCL	GRANT, REVOKE	Manage permissions
TCL	COMMIT, ROLLBACK, SAVEPOINT	Manage transactions

Filtering rows

COMMON WHERE PATTERNS

```
WHERE age >= 18 AND country = 'IN'
WHERE status IN ('active', 'trial')
WHERE email LIKE '%@gmail.com'
WHERE signup_date BETWEEN '2026-01-01' AND '2026-06-30'
WHERE deleted_at IS NULL
```

- = <> != > < >= <= are the standard comparison operators (<> and != both mean 'not equal').
- AND / OR / NOT combine conditions — wrap mixed AND/OR groups in parentheses to avoid bugs.
- NULL never equals anything, including itself — always use IS NULL / IS NOT NULL, never = NULL.

Sorting & limiting

```
SELECT name, score
FROM players
ORDER BY score DESC, name ASC -- ties broken alphabetically
LIMIT 10 OFFSET 20;         -- rows 21-30 (page 3 of 10)
```

Inserting, updating, deleting

DML IN ONE GLANCE

```
INSERT INTO users (name, email) VALUES ('Ada', 'ada@sqlism.com');

UPDATE users SET plan = 'pro' WHERE id = 42;

DELETE FROM users WHERE last_login < '2024-01-01';
```

SAFETY

UPDATE and DELETE with no WHERE clause touch every row in the table. Always test the matching rows with a SELECT using the same WHERE clause first.

Naming & aliases

```
SELECT u.name AS customer_name, o.total AS order_total
FROM users AS u
JOIN orders AS o ON o.user_id = u.id;
```

- AS is optional for column aliases in most dialects, but keep it for readability.
- Table aliases are required once you join more than one table with overlapping column names.