

# Aggregates & grouping

## SQL Reference

### Aggregate functions

An aggregate function 聚合函数 turns many rows into one summary 汇总 value: COUNT, SUM, AVG, MIN, MAX. Wrap an average in ROUND(x, 2) to tidy it.

```
CREATE TABLE student (id INTEGER, name TEXT, form TEXT, score INTEGER);
INSERT INTO student VALUES
  ↪ (1, 'Mei', '11A', 88), (2, 'Sam', '11B', 71), (3, 'Ana', '11A', 95);
SELECT COUNT(*), ROUND(AVG(score), 2), MAX(score) FROM student;
```

### GROUP BY and HAVING

GROUP BY makes one summary row per group 组. HAVING filters those groups—it is like WHERE, but it runs after grouping.

```
CREATE TABLE student (id INTEGER, name TEXT, form TEXT, score INTEGER);
INSERT INTO student VALUES
  ↪ (1, 'Mei', '11A', 88), (2, 'Sam', '11B', 71), (3, 'Ana', '11A', 95);
SELECT form, COUNT(*) AS n, ROUND(AVG(score), 2) AS avg_score
FROM student
GROUP BY form
HAVING COUNT(*) > 1;
```