

Dates in SQL, the patterns you always google.

D8A.ACADEMY/RESOURCES/SQL-DATES

TRUNCATE

DATE_TRUNC('month', d)	first of month
DATE_TRUNC('week', d)	monday
ts::DATE	drop the time

PARTS & LABELS

EXTRACT(dow FROM d)	O = sunday
EXTRACT(hour FROM ts)	heatmaps
TO_CHAR(d, 'YYYY-MM')	labels

DATE MATH

d + INTERVAL '1 month'	add
d2 - d1	days between
NOW() - INTERVAL '30d'	rolling window
AGE(d2, d1)	y/m/d gap

REPORT LINES

GROUP BY DATE_TRUNC(...)	reports
LAG(rev) OVER(...)	previous month
generate_series(...)	fill empty days

TRENDS

rev / LAG(rev) - 1	MoM growth
SUM() OVER(ORDER BY d)	running total
ROWS 6 PRECEDING	7-day moving avg

GOTCHAS

BETWEEN a AND b	← cuts the last day.
ts::DATE in WHERE	kills the index
AT TIME ZONE 'UTC'	store UTC
'1970-01-01'	fake date = fake null

WORTH MEMORIZING

01 The monthly report, complete

Truncate, aggregate, compare to last month. The skeleton of half of all dashboards.

```
WITH m AS (
  SELECT DATE_TRUNC('month', d) AS mo,
         SUM(rev) AS rev
  FROM sales GROUP BY 1)
SELECT mo, rev,
       ROUND(100.0 * (rev / LAG(rev)
                        OVER (ORDER BY mo) - 1), 1) AS mom
FROM m ORDER BY mo;
```

→ LAG reads the previous row of the ordered result: last month, no self-join.

02 Trap: timestamps end at midnight

The August report that quietly drops August 31.

YOU WROTE	WHAT HAPPENS	WRITE INSTEAD
BETWEEN '08-01' AND '08-31'	drops Aug 31 after 00:00	>= '08-01' AND < '09-01'
WHERE ts::DATE = CURRENT_DATE	index unused, full scan	range on the raw ts
GROUP BY day, no series	empty days just vanish	generate_series + LEFT JOIN

→ '2026-08-31' as a timestamp means midnight. Everything after 00:00 on the 31st is outside BETWEEN.