Problem:
A buyer is *new* on the day of their first-ever purchase.
A buyer is *reactivated* if they purchase after ≥30 days of inactivity.
Write a query to get the number of **new and **reactivated** buyers on each day between Nov 1–7 2025.**

Table: trans_table(seller_id, buyer_id, trans_dt, category, sale_value)**
Expected Output:
| day | new_buyers | reactivated_buyers |
|------|-------------|--------------------|
| 2025-11-01 | 220 | 40 |
| 2025-11-02 | 260 | 35 |
| 2025-11-03 | 230 | 42 |
| 2025-11-04 | 210 | 50 |
| 2025-11-05 | 200 | 45 |
| 2025-11-06 | 195 | 38 |
| 2025-11-07 | 240 | 52 |
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Learning: →
Re-activation - is evaluated per buyer per day, not per buyer over entire history.

1) **Use Lag(prev_purchase_date)**
2) **Not date_diff(end_date, start_date) = 1**

Critical failing scenario:

buyer_id trans_dt
404 2025-10-01
404 2025-11-01
404 2025-11-04

min(dt) as start_dt - max(dt) as end_dt

What should happen:
1) Nov 1:
- Previous = Oct 1 -> gap = 31 -> reactivated.
2) Nov 4:
- Previous = Nov 1 -> gap = 3 -> Not reactivated.

Your query(previous one):
- start_dt = 2025-10-01
- end_dt = 2025-11-04

- datediff = 34 -> reactivated for both days (which is wrong)
Your method can't distinguish the **daily reactivation status**

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Soln:

```
with ordered AS(
select
buyer_id,
DATE(trans_dt) as day,
LAG(date(trans_dt)) OVER(PARTITION BY buyer_id ORDER BY DATE(trans_dt)) AS prev_purchase
from trans_table
),
classified AS(
select
day,
buyer_id,
case
when prev_purchase is null then 'new'
when DATE_DIFF(day, prev_purchase, day) >= 30 THEN 'reactivated'
else 'other'
end as buyer_type
from ordered
)
select
day,
COUNT(DISTINCT CASE WHEN buyer_type = 'new' THEN buyer_id END) AS new_buyers,
COUNT(DISTINCT CASE WHEN buyer_type = 'reactivated' THEN buyer_id END) AS reactivated_buyers
from classified
where day BETWEEN '2025-11-01' and '2025-11-07'
group by day
order by day
```

How LAG solves it:

buyer	trans_dt	prev_purchase	gap
404	2025-10-01	NULL	—
404	2025-11-01	2025-10-01	31

| 404 | 2025-11-04 | 2025-11-01 | 3 |