SQL OF THE DAY

💻 ACCEPTANCE RATE BY DATE

NIVAN R. SUGIANTORO

PROBLEMS

🔗 https://platform.stratascratch.com/coding/10352-users-by-avg-session-time?code_type=1

Problem:
Calculate the friend acceptance rate for each date when friend requests were sent. A request is sent if action = sent and accepted if action = accepted. If a request is not accepted, there is no record of it being accepted in the table.
The output will only include dates where requests were sent and at least one of them was accepted (acceptance can occur on any date after the request is sent).

SOLUTION I

🧩 Logic breakdown

- Split data into two logical sets:

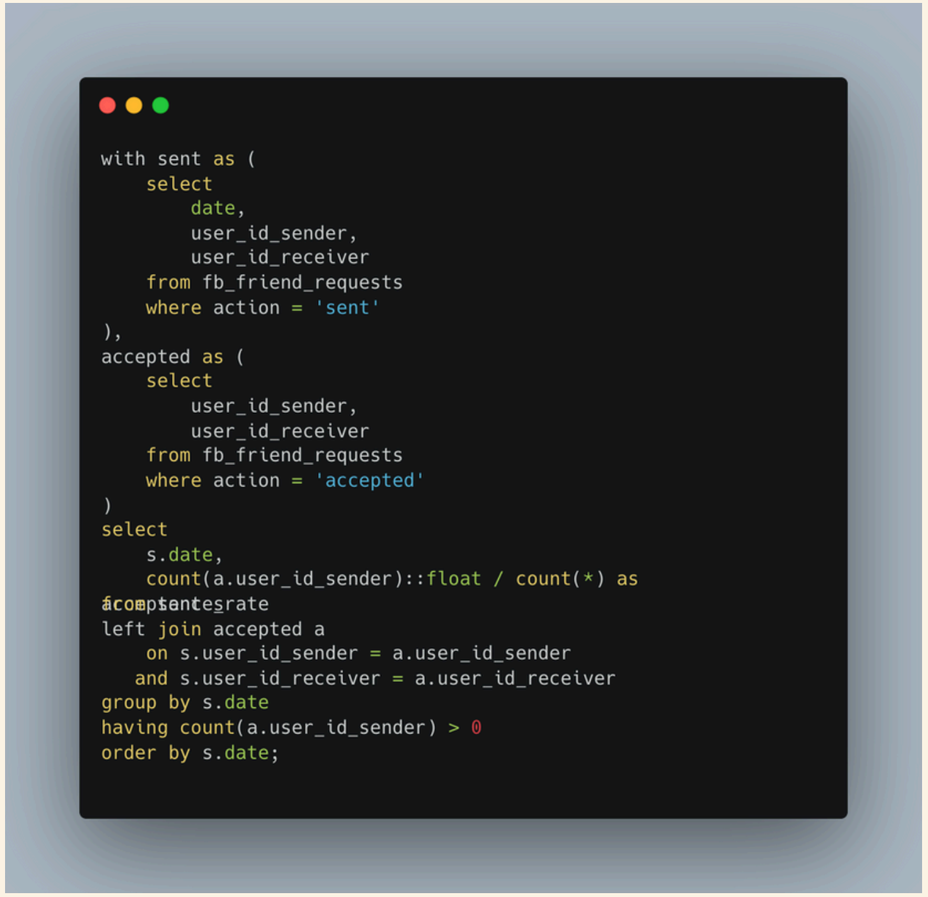
sent → all friend requests

accepted → requests that were accepted

- Join both sets by sender and receiver

- Acceptance rate = accepted requests / total sent requests per date

- Use having to keep only dates with at least one acceptance



```sql
with sent as (
    select
        date,
        user_id_sender,
        user_id_receiver
    from fb_friend_requests
    where action = 'sent'
),
accepted as (
    select
        user_id_sender,
        user_id_receiver
    from fb_friend_requests
    where action = 'accepted'
)
select
    s.date,
    count(a.user_id_sender)::float / count(*) as
acceptance_rate
from sent s
left join accepted a
    on s.user_id_sender = a.user_id_sender
   and s.user_id_receiver = a.user_id_receiver
group by s.date
having count(a.user_id_sender) > 0
order by s.date;
```

SOLUTION II

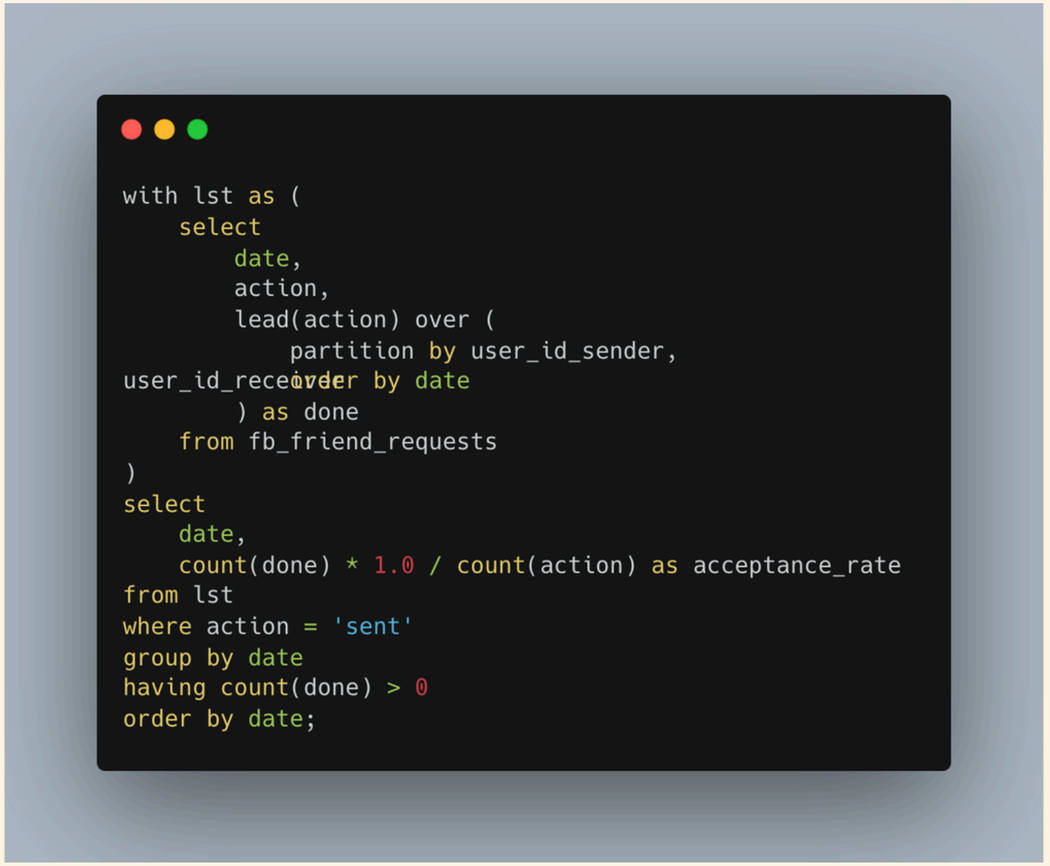
🧩 Logic breakdown

- Keep all events in one table

- Use lead() to check whether a sent action is followed by an accepted action

- Group by send date and calculate acceptance rate

- This works because acceptance always comes after a request



```sql
with lst as (
    select
        date,
        action,
        lead(action) over (
            partition by user_id_sender,
user_id_receiver order by date
        ) as done
    from fb_friend_requests
)
select
    date,
    count(done) * 1.0 / count(action) as acceptance_rate
from lst
where action = 'sent'
group by date
having count(done) > 0
order by date;
```

KEY TAKEAWAYS

- The same metric can be computed in multiple ways. As long as the output same, its still correct.
- Explicit joins are easier to understand and debug.
- Window functions are powerful when event order matters.
- Details in business logic matter, acceptance may happen days after the request.

Let's Connect

nivanrs@gmail.com