46_Server Utilization Time Hard - Solution

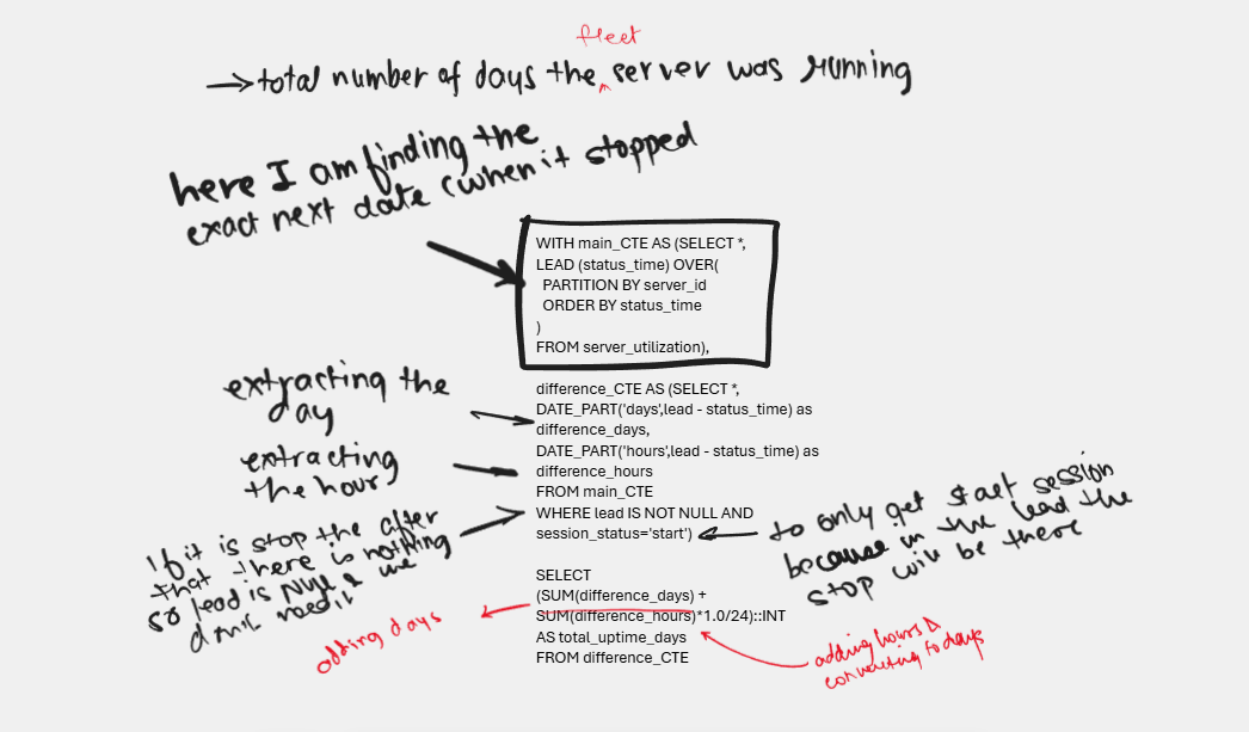
Source - https://datalemur.com/questions/user-retention

- Amazon Web Services (AWS) is powered by fleets of servers.
- Write a query that calculates the total time that the fleet of servers was running.
- The output should be in units of **full days**.
- Each server might start and stop several times.
- The total time in which the server fleet is running can be calculated as the sum of each server's uptime.

```
WITH main_CTE AS (SELECT *,
LEAD (status_time) OVER(
  PARTITION BY server_id
  ORDER BY status_time
)
FROM server_utilization),

difference_CTE AS (SELECT *,
DATE_PART('days',lead - status_time) as difference_days,
DATE_PART('hours',lead - status_time) as difference_hours
FROM main_CTE
WHERE lead IS NOT NULL AND session_status='start')

SELECT
(SUM(difference_days) + SUM(difference_hours)*1.0/24)::INT
AS total_uptime_days
FROM difference_CTE
```


fleet
→total number of days the server was running
here I am finding the exact next date when it stopped
WITH main_CTE AS (SELECT *,
LEAD (status_time) OVER(
PARTITION BY server_id
ORDER BY status_time
)
FROM server_utilization),
extracting the day
extracting the hour
difference_CTE AS (SELECT *,
DATE_PART('days',lead - status_time) as difference_days,
DATE_PART('hours',lead - status_time) as difference_hours
FROM main_CTE
WHERE lead IS NOT NULL AND session_status='start')
to only get start session because in the lead the stop will be there
If it is stop the after that there is nothing so lead is NULL & we don't need it
SELECT
(SUM(difference_days) +
SUM(difference_hours)*1.0/24)::INT
AS total_uptime_days
FROM difference_CTE
adding days
adding hours & converting to days