11/22/2025

DAY 20
#SQLWithIDC

[21 DAYS SQL CHALLENGE]

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PRACTICE QUESTIONS

1. Calculate running total of patients admitted by week for each service.

```
SELECT service, week, patients_admitted,
SUM(patients_admitted) OVER( PARTITION BY service ORDER BY week ROWS
UNBOUNDED PRECEDING) AS running_total
FROM services_weekly
ORDER BY service, week;
```

2. Find the moving average of patient satisfaction over 4 week periods.

```
SELECT service, week, patients_satisfaction,
ROUND(AVG(patients_satisfaction) OVER(PARTITION BY service ORDER BY
week ROWS 3 PRECEDING),2) AS moving_avg
FROM services_weekly
ORDER BY service, week;
```

3. Show cumulative patient refusals by week across all services.

```
WITH w AS (SELECT week, SUM(patients_refused) AS weekly_refused
FROM services_weekly
GROUP BY week )
SELECT week, weekly_refused,
SUM(weekly_refused) OVER(ORDER BY week) AS cumulative_refused
FROM w
ORDER BY week;
```

DAILY CHALLENGE – DAY 20

1. Create a trend analysis showing for each service and week:
   - Week number, patients_admitted, running total of patients admitted(cumulative),
   - 3 week moving average of patient satisfaction (current week and 2 prior weeks).
   - And the difference between current week admissions and the service average.
   - Filter for weeks 10-20 only.

```
SELECT * FROM (SELECT service, week, patients_admitted,
SUM(patients_admitted) OVER(PARTITION BY service ORDER BY week ROWS UNBOUNDED
PRECEDING) AS running_total,
ROUND(AVG(patients_satisfaction) OVER (PARTITION BY service ORDER BY week ROWS 2
PRECEDING),2) AS moving_avg_satisfaction,
patients_admitted - ROUND(AVG(patients_admitted) OVER(PARTITION BY service),2) AS
diff_from_service_avg
FROM services_weekly) t
WHERE week BETWEEN 10 AND 20
ORDER BY service, week;
```