SQL 100 Days Challenge – Day 56 Reflection

Topic: Streaming Platform Analytics – Users, Subscriptions, Movies & Watch Behavior

Dataset:

- **Users** (UserID, Name, Country, JoinDate)
- **Subscriptions** (SubID, UserID, Plan, StartDate, EndDate, Status)
- **Movies** (MovieID, Title, Genre, ReleaseYear, Duration)
- **WatchHistory** (WatchID, UserID, MovieID, WatchDate, WatchDuration)
- **Ratings** (RatingID, UserID, MovieID, Rating)

Practice Experience

- Today's session focused on **streaming platform analytics**, covering subscriptions, movies, watch history, and ratings.
- The initial questions (1–6) were **straightforward**, dealing with average ratings, genre diversity, churn rates, and watch hours.
- From **Question 7 onward**, the complexity increased significantly. Downgrades, running totals, re-subscriptions, and CLV calculations all demanded careful use of **window functions and logic-based conditions**.
- I used the **LEAD() function for the very first time** while solving the re-subscription problem, which was both challenging and exciting.

Key Learnings from Queries

1. **Top Movies by Ratings:** Aggregated AVG(Rating) with counts.
2. **Genre Diversity:** Identified users watching in >2 genres.
3. **Churn Rate:** Calculated users whose latest subscription ended as "Expired".
4. **Watch Hours by Country:** Summed durations with percentage contribution.
5. **Binge Watchers:** Found users exceeding 300 minutes in a day.
6. **Most-Watched Genre:** Aggregated total watch duration.
7. **Subscription Downgrades:** Applied LAG() to detect plan changes from higher to lower tiers.
8. **Running Totals:** Used window function with cumulative SUM() for watch minutes → converted to hours.
9. **Unrated but Watched Movies:** Compared WatchHistory with Ratings using LEFT JOIN.
10. **Re-subscription Analysis:** First time applying **LEAD()** to calculate gap days between subscriptions and identify re-subs within 30 days.
11. **Bonus – Customer Lifetime Value (CLV):** Combined plan pricing logic, subscription duration, and customer tenure to compute CLV.

Insights

- **Inception** and **The Godfather** emerged with strong ratings, while **Sci-Fi and Action** genres dominated watch time.
- Churn rate analysis highlighted the importance of tracking subscription expiries.
- Binge-watch patterns revealed high daily engagement from a few users.
- Re-subscription within 30 days suggested strong retention for some customers.
- CLV calculation gave a **business-level perspective**, identifying high-value customers based on tenure and payments.

Skills Reinforced

- Advanced Window Functions: LAG(), LEAD(), running totals with SUM()
- Business Metrics: CLV, churn, binge-watching, re-subscription
- Complex logic with CASE WHEN inside aggregations
- Combining multiple CTEs for layered insights
- First practical use of LEAD() for **time-gap analysis**

Personal Note

The shift in difficulty today was **challenging yet fulfilling**. Questions 7 through the bonus pushed me to think more logically and carefully structure queries.

Using LEAD() for the first time felt like a milestone — it unlocked a new perspective for analyzing timelines and sequences.

I realized that SQL isn't just about queries, but about **storytelling with data** — whether it's churn, retention, or lifetime value.