SQL 100 Days Challenge – Day 47 Reflection

Topic: Online Learning Platform Analytics

Dataset: Students, Courses, Enrollments

Practice Experience:

- Today's practice felt smooth — **questions 1–10 seemed intermediate rather than advanced**. I was able to implement CASE WHEN logic, calculate percentages, and apply ranking functions with confidence.

- The **Bonus Challenge (Course Completion Funnel)** was the toughest part, requiring multiple aggregations and percentage conversions, but it gave me deeper understanding of stage-wise funnel analysis.

Key Learnings:

1. **Revenue Analysis:** Summed course revenue based on completed enrollments.

2. **Student Insights:** Identified top performers and high-value students based on multiple completions and average spend.

3. **Course Popularity:** Ranked courses by enrollments with both RANK() and DENSE_RANK().

4. **Engagement Metrics:** Detected students with strong ongoing progress.

5. **Country Contribution:** Calculated revenue share and percentage contribution per country.

6. **Enrollment Patterns:** Used LAG() to analyze student learning timelines.

7. **Dropout Analysis:** Month-wise dropout rate calculated with CASE WHEN + percentages.

8. **Recursive CTE:** Built SQL Basics → Advanced SQL learning path.

9. **Category-Wise Insights:** Completion rates, enrollments, and average prices by category.

10. **Funnel Analysis:** Advanced bonus query showing progression from In Progress → Completed / Dropped.

Insights:

- **Data & AI courses** showed higher engagement compared to IT.

- Students from India and USA drove majority of completed enrollment revenue.

- Dropout analysis revealed specific months with higher course exits.

- Funnel conversion rates offered a **clear visual of learner journey**.

Skills Reinforced:

- CASE WHEN for conditional logic.

- Percentage & ratio calculations with NULLIF safeguards.

- Window functions (LAG, ROW_NUMBER, RANK).

- Recursive CTE for learning path building.

- Funnel and stage analysis in SQL.

Personal Note:
Even though the set was marked advanced, today's practice felt **much easier compared to earlier days**. It showed me how much progress I've made — queries that once looked intimidating now feel manageable. The bonus funnel challenge still pushed me, but solving it boosted my confidence even further.

Next Steps:

- Extend funnel analysis to multi-course journeys.

- Combine CLV with course funnel to find most valuable learners.

- Explore retention cohorts using enrollment months.