Healthcare Database SQL Project

The **Healthcare Database SQL Project** focuses on analyzing healthcare data to extract insights about patients, doctors, appointments, diagnoses, and medications. The project applies advanced SQL concepts to support healthcare decision-making and performance analysis.

The database consists of structured tables for patients, doctors, appointments, diagnoses, and medications. The project emphasizes **join operations, aggregations, subqueries, window functions, conditional expressions, and date functions** to analyze real-world healthcare scenarios.

Through multiple analytical tasks, the project evaluates completed appointments, inactive patients, doctor workload, diagnosis patterns, and medication usage. **Ranking and partitioning** techniques help identify frequent patient-doctor interactions, while **CASE expressions** enable demographic analysis. Date and string functions are used to analyze treatment durations and filter patient contact data.

Overall, the project demonstrates how SQL can be effectively used in healthcare analytics to improve patient management, doctor performance evaluation, and treatment analysis.

Tasks Performed

1. Used INNER JOIN to fetch completed appointments
2. Used LEFT JOIN to identify patients without appointments
3. Used RIGHT JOIN and aggregation to count diagnoses per doctor

4. Identified mismatches between appointments and diagnoses

5. Ranked patients per doctor using window functions

6. Categorized patients into age groups using CASE

7. Applied string and numeric functions for contact filtering

8. Used subqueries to identify insulin-only patients

9. Calculated average medication duration using date functions

10. Identified doctor with most unique patients

In conclusion, this project effectively demonstrates **advanced SQL querying skills applied to healthcare data**, supporting patient management, performance evaluation, and data-driven healthcare decisions. It serves as a strong foundation for healthcare analytics and reporting systems.