Healthcare Data Analytics Project

This project simulates a real-world healthcare analytics environment with a dataset containing 200,000+ rows. It provides realistic patient, doctor, and appointment data to analyze operational performance, patient trends, and medical service utilization. The project is designed to demonstrate SQL-based data analysis skills for business problem-solving in healthcare.

Dataset Overview

- Patients Table (20,000 rows): Patient demographics such as age, gender, blood type, and city. - Doctors Table (1,000 rows): Doctor details with specialization and years of experience. - Appointments Table (180,000 rows): Appointment records including date, time, duration, and status.

Business Case Questions (with SQL Queries)

- 1. What is the total number of appointments handled by each doctor?
- 2. What is the average appointment duration per doctor specialization?
- 3. Which day of the week has the highest patient load?
- 4. What percentage of patients do not show up for their appointments (No-Shows)?
- 5. Which blood type patients visit the most frequently?
- 6. Find the top 5 doctors with the highest number of completed appointments.
- 7. What is the cancellation rate of appointments per city?
- 8. How many unique patients visited in the last 3 months?
- 9. Average waiting/appointment duration trends over time.
- 10. Distribution of patients by age group and blood type.
- 11. Appointment load distribution across specializations.
- 12. Which cities contribute the most to patient visits?
- 13. Monthly appointment growth trend.
- 14. Doctor specialization vs. no-show ratio.
- 15. Patient re-visit frequency (loyal patients).

This project demonstrates how SQL can be leveraged to solve real-world business problems in the healthcare domain. The dataset and queries are designed for interview preparation and portfolio projects to showcase expertise in data analysis.