Hospital Data Analysis Project (SQL Only)

1. Objective

The purpose of this SQL project is to analyze hospital performance and efficiency using structured query language (SQL). The project focuses on analyzing patient counts, doctor availability, department performance, hospital expenses, and city-wise insights. This assignment demonstrates the ability to clean, query, and extract insights from a structured hospital dataset.

2. Dataset Description

The dataset used for this project is named 'Hospital_Data.csv'. It includes the following columns:
• hospital_name
• location
• department
• doctors_count
• patients_count
• admission_date
• discharge_date
• medical_expenses

This data was imported into an SQL database using the COPY command for analysis.

3. Tools Used

• SQL (PostgreSQL / MySQL) — For writing and executing analytical queries
• Microsoft Excel — For creating and formatting the dataset
• GitHub — For project hosting and documentation

4. SQL Queries and Analysis

The file 'Hospital_data.sql' contains a set of analytical SQL queries, such as:
• Calculating the total number of patients across all hospitals
• Finding the average number of doctors per hospital
• Identifying the top 3 departments with the highest patients
• Determining which hospital has the maximum medical expenses
• Calculating average stay duration and daily medical expenses
• City-wise and department-wise patient analysis
• Monthly expense summary to identify cost trends

5. Insights and Findings

From the SQL analysis, the following key insights were derived:
• Hospitals in major cities such as Patna and Muzaffarpur report higher patient counts.
• Cardiology and Neurology departments handle the maximum patient load.
• Average number of doctors per hospital ranges between 12 and 20.
• The months of October to December recorded higher medical expenses.
• Average patient stay duration is around 5–7 days.

These insights help management understand which departments and regions perform best and where improvements can be made.

6. Conclusion

This SQL project demonstrates how structured data can be analyzed to extract meaningful information for healthcare decision-making. It highlights the use of basic and advanced SQL functions like aggregation, joins, and grouping to perform real-world analysis. The project shows the power of SQL in handling business data effectively and producing actionable insights.

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