Hospital Admissions SQL Analysis

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Tools: SQLite, Excel

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Objective
This project analyzes hospital patient data to identify key trends in diseases, hospital departments, and patient demographics.
The goal is to understand how factors like diagnosis, department, and age influence average hospital cost and length of stay.

Dataset
200 hospital patient records
Columns include patient_id, age, gender, city, department, diagnosis, admission_date, discharge_date, outcome, length_of_stay_days, total_cost_gbp

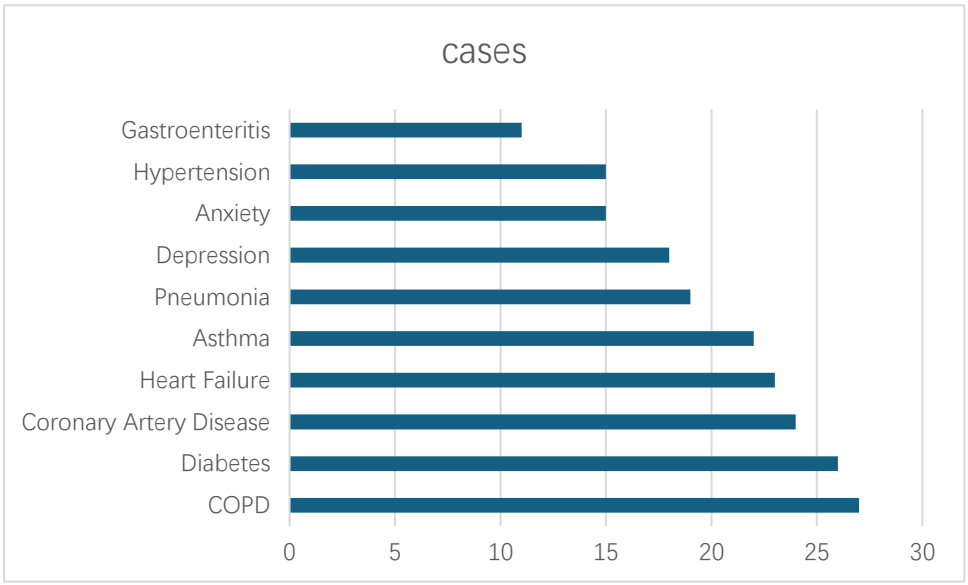
Tool used: SQLite (DB Browser for SQLite)

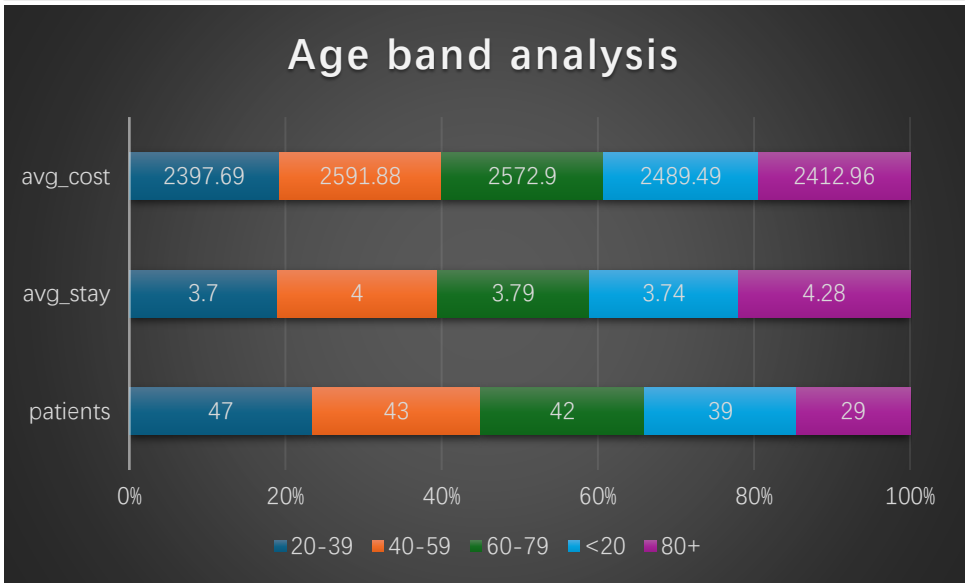
Methods (SQL focus)
Using SQL, I wrote queries to:

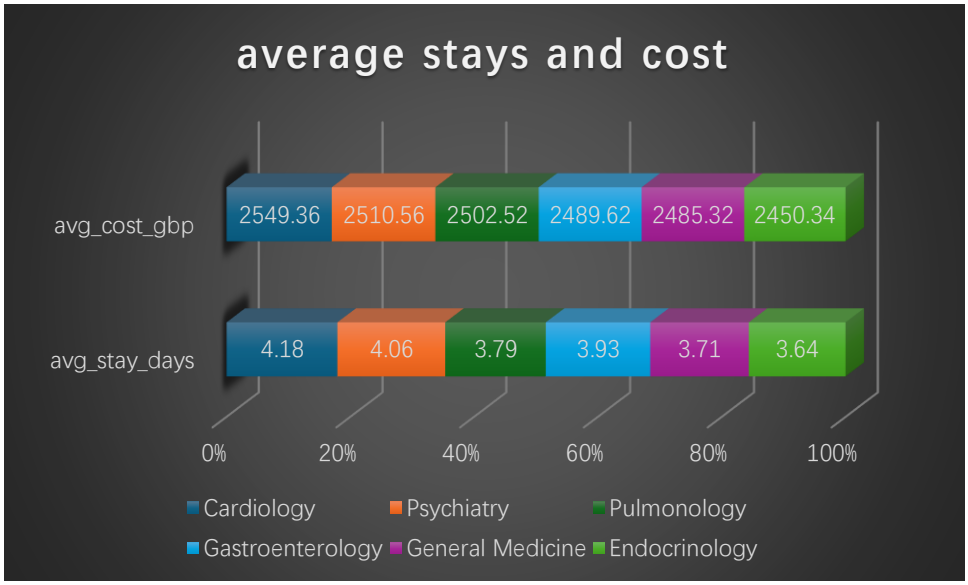
- Count the most common diseases
- Calculate average cost by department
- Identify monthly admission trends
- Compare cost by age bands

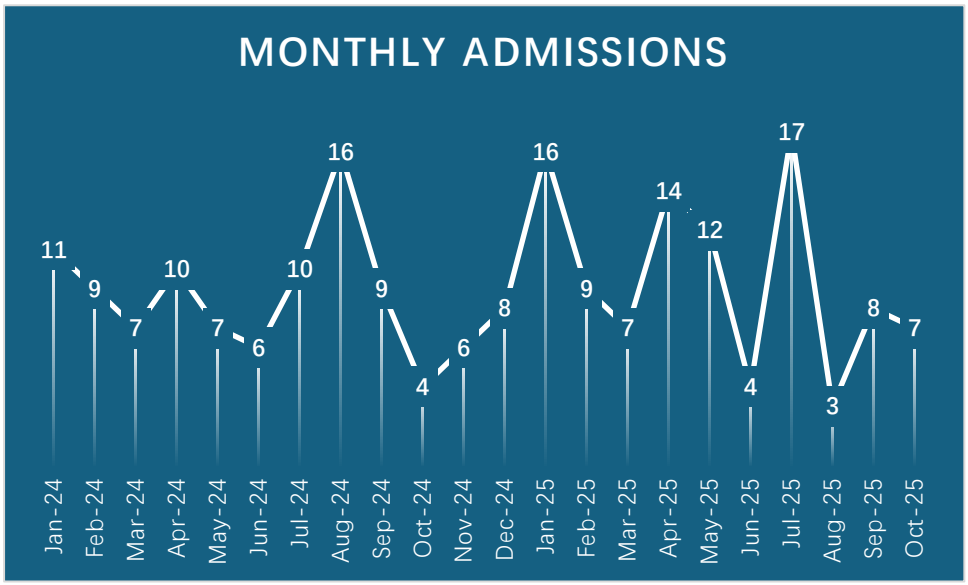
Results and Insights

Insight	Description
Most common disease: COPD	27 cases, 13.5% of total patients
Highest avg. cost: Cardiology Dept. (£2549.36 avg)	due to longer stays
Admissions trend: Peaked in June	likely seasonal infections
Age band analysis: 40-59 yrs patients highest avg. cost	complex cases


cases
Gastroenteritis
Hypertension
Anxiety
Depression
Pneumonia
Asthma
Heart Failure
Coronary Artery Disease
Diabetes
COPD
0
5
10
15
20
25
30


Age band analysis
avg_cost
2397.69
2591.88
2572.9
2489.49
2412.96
avg_stay
3.7
4
3.79
3.74
4.28
patients
47
43
42
39
29
0%
20%
40%
60%
80%
100%
20-39
40-59
60-79
<20
80+


average stays and cost
avg_cost_gbp
2549.36
2510.56
2502.52
2489.62
2485.32
2450.34
avg_stay_days
4.18
4.06
3.79
3.93
3.71
3.64
0%
20%
40%
60%
80%
100%
Cardiology
Psychiatry
Pulmonology
Gastroenterology
General Medicine
Endocrinology



Conclusion

This project demonstrates how SQL can be used to extract actionable insights from healthcare data.

By grouping, aggregating, and visualizing patient data, I was able to summarize key operational and demographic trends that could support hospital planning and resource allocation.