Healthcare Data Analysis Using Power BI

1. Introduction

Healthcare organizations generate a large amount of data related to patients, treatments, and hospital operations. Analyzing this data helps improve service quality and decision-making. This project uses Power BI to transform raw healthcare data into interactive dashboards.

2. Problem Statement

Healthcare data is often unstructured and difficult to analyze. Lack of visualization makes it hard to identify trends, monitor performance, and take quick decisions.

3. Objectives

- Analyze healthcare data using Power BI
- Visualize patient and hospital information
- Track key performance indicators (KPIs)
- Identify trends and patterns

4. Scope of the Project

The project covers patient demographics, hospital admissions, treatment analysis, and time-based trends. Predictive analytics and real-time data are not included.

5. Tools and Technologies

- Power BI Desktop
- Power Query
- DAX
- Healthcare Dataset

6. Dataset Description

The dataset includes patient details, age, gender, admission and discharge dates, hospital departments, and treatment information. Data cleaning was performed before analysis.

7. Methodology

1. Data Collection
2. Data Cleaning
3. Data Modeling
4. DAX Calculations
5. Dashboard Design
6. Insight Generation

8. Dashboard Features

Patient overview, hospital performance metrics, treatment analysis, time-based trends, and interactive filters.

9. Key Insights

High admission periods were identified, common treatments were analyzed, and workload patterns were observed.

10. Results

The project successfully converted raw data into meaningful visual dashboards for better decision-making.

11. Limitations

Limited dataset, no real-time data, and no predictive analytics.

12. Future Enhancements

Real-time data integration, predictive analytics, and advanced outcome analysis.

13. Conclusion

This project shows how Power BI can be effectively used in healthcare analytics to support data-driven decisions.