Title Page

Project Title: Healthcare Dashboard Analysis

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Abstract

This project focuses on building a Healthcare Dashboard using Microsoft Power BI to support data-driven decision-making in hospitals. The dashboard provides insights into patient attendance, doctor performance, revenue trends, and appointment no-shows. By analyzing patient records, appointments, treatments, and financial data, hospital management can make informed decisions that improve efficiency and patient satisfaction.

Tools Used: Microsoft Power BI, Excel/CSV datasets, Power Query, DAX.

Dataset Scope: Patient records, appointments, treatments, revenue, demographics.

Key Outcomes: Improved tracking of appointments, monitoring of doctor performance, revenue insights, and better resource allocation.

Introduction

Healthcare analytics plays a crucial role in improving hospital management. With increasing patient loads, hospitals need dashboards for quick decision-making, monitoring KPIs, and reducing inefficiencies. A healthcare dashboard provides real-time insights into operations, helping in improving patient care, optimizing schedules, and increasing overall efficiency.

Dataset Description

Data Type: Patient appointments, demographics, doctor schedules, billing/revenue.

Sample Columns: Patient ID, Age, Gender, Appointment Date, Department, Diagnosis, Revenue, No-show Status.

The dataset is structured in Excel/CSV format and imported into Power BI for visualization.

Tools & Technologies Used

• Microsoft Power BI – Dashboard creation & visualization

• Excel/CSV Dataset – Data source

• Power Query – Data cleaning & transformation

• DAX (Data Analysis Expressions) – KPI & measure calculations

Methodology

1. Data Import – Import patient and appointment data (Excel/CSV) into Power BI.

2. Data Cleaning & Transformation – Handle missing values, format dates, standardize categories using Power Query.

3. Data Modeling – Create relationships between patient, appointment, and revenue tables.

4. KPI & DAX Measure Creation – Define measures such as Average Waiting Time, Appointment No-show %, Total Revenue, and Patient Visit Frequency.

5. Dashboard Development – Build interactive reports with slicers (department, doctor, date range) and visualizations.

Results & Insights

• Appointment Trends: Identified busiest days and months for appointments.

• No-show Analysis: Calculated % of patients who missed appointments.

• Revenue Trends: Found top-performing departments contributing the highest revenue.

• Patient Demographics: Age and gender distribution of patients.

• Doctor Performance: Consultations completed, success rates, and patient feedback trends.

Conclusion

The healthcare dashboard provides real-time insights that help hospital management in:

• Monitoring patient flow and appointment attendance.

• Identifying bottlenecks such as high no-show rates and department delays.

• Allocating resources efficiently.

• Enhancing patient satisfaction through data-driven improvements.

Future Scope

• Predictive Analytics: Use machine learning to predict patient no-shows.

• Real-time Integration: Connect directly with hospital databases for live dashboards.

• Advanced Risk Analysis: Build dashboards for patient health risk monitoring.

• Mobile-Friendly Dashboards: Enable doctors and patients to access dashboards on mobile devices.