Hospital Management Dashboard

1. Introduction

The hospital management dashboard was designed to enhance the operational efficiency of the hospital by providing detailed analytics on appointments, patient statistics, earnings, and credit utilization. This dashboard is an essential tool for Cufront to streamline operations and make data-driven decisions. It caters to administrators and management staff, offering insights into doctor performance, patient engagement, and resource allocation.

Cufront is a company that provides OPD appointment booking services as well as these dashboard services to hospitals, enabling seamless integration and improved operational management.

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2. Objective

The primary goals of this dashboard are:

1. To provide a detailed view of doctor-patient interactions.
2. To track hospital earnings and credit utilization.
3. To offer a user-friendly interface for administrators to view, filter, and analyze data.
4. To integrate seamlessly with the hospital's website, ensuring accessibility and usability.

3. Dashboard Features
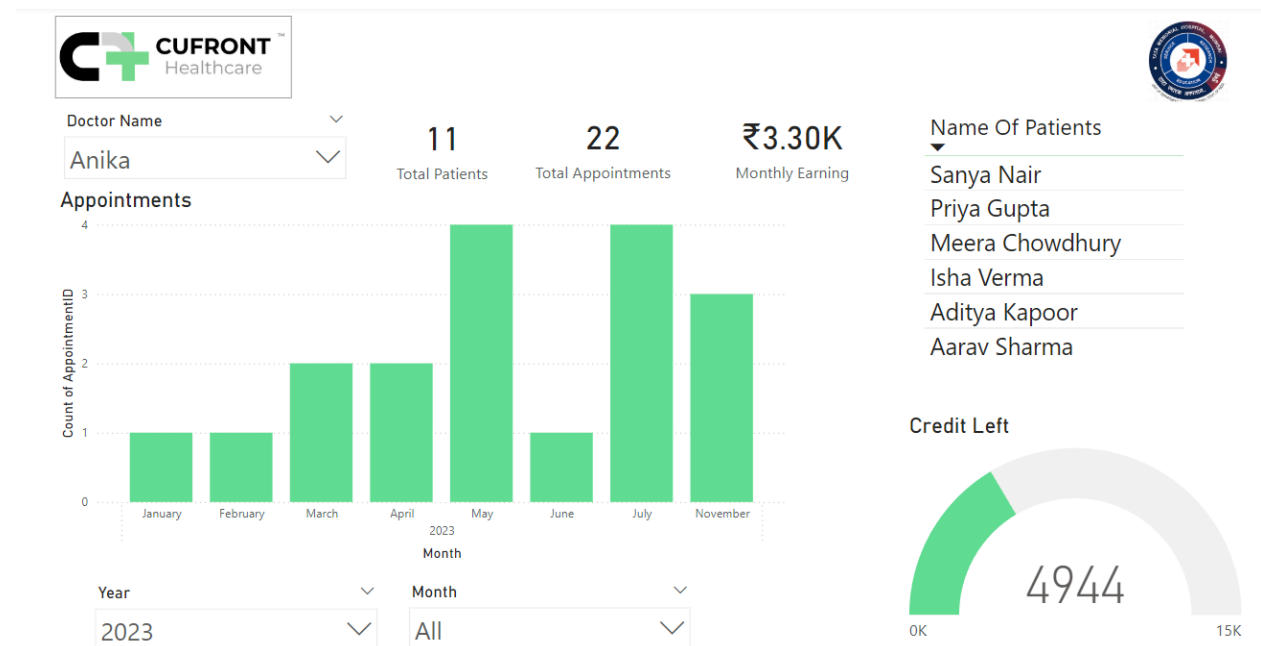
3.1 Dropdown Selection for Doctor Monitoring:

The dropdown menu allows administrators to select a specific doctor. Based on the selection, the dashboard dynamically updates to show the following details:

- Total number of patients treated by the doctor.
- Total appointments handled.
- Monthly earnings generated by the doctor.

3.2 Appointment Insights:

A bar graph visualizes the count of appointments over each month, segmented by year. This feature helps in:

- Monitoring seasonal trends in patient visits.
- Identifying peak and low periods of hospital activity.

3.3 Patient Details:

The dashboard displays a list of patients treated by the selected doctor. This list includes:

- Patient names.
- Appointment frequency.

3.4 Earnings Tracking:

The earnings section provides monthly revenue figures derived from appointments and medical services, helping the hospital assess the financial contribution of each doctor.

3.5 Credit Utilization:

Cufront operates on a credit/token system. Hospitals purchase tokens that are reduced based on the services utilized. The dashboard features:

- A "Credit Left" gauge displaying the remaining credits/tokens out of the total allocated.
- Insights into how credits are being consumed by various services.

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4. Database Structure To support this dashboard, a relational database was designed with the following tables:

4.1 Appointment Table:

- **Fields:** AppointmentID, Date, Time, DoctorID, PatientID
- **Purpose:** Tracks details of all patient appointments.

4.2 Updated_Doctor Table:

- **Fields:** DoctorID, DoctorName, Specialization, DoctorContact
- **Purpose:** Stores information about doctors, allowing admins to filter and track performance.

4.3 Updated_Patient Table:

- **Fields:** PatientID, FirstName, LastName, Email
- **Purpose:** Maintains records of patients and their basic details.

4.4 Billing Table:

- **Fields:** InvoiceID, PatientID, Amount, Items
- **Purpose:** Tracks billing details for patients, including service charges and total amount.

4.5 Medical_Procedure Table:

- **Fields:** ProcedureID, AppointmentID, ProcedureName
- **Purpose:** Stores information about medical procedures conducted during appointments.

Model View :

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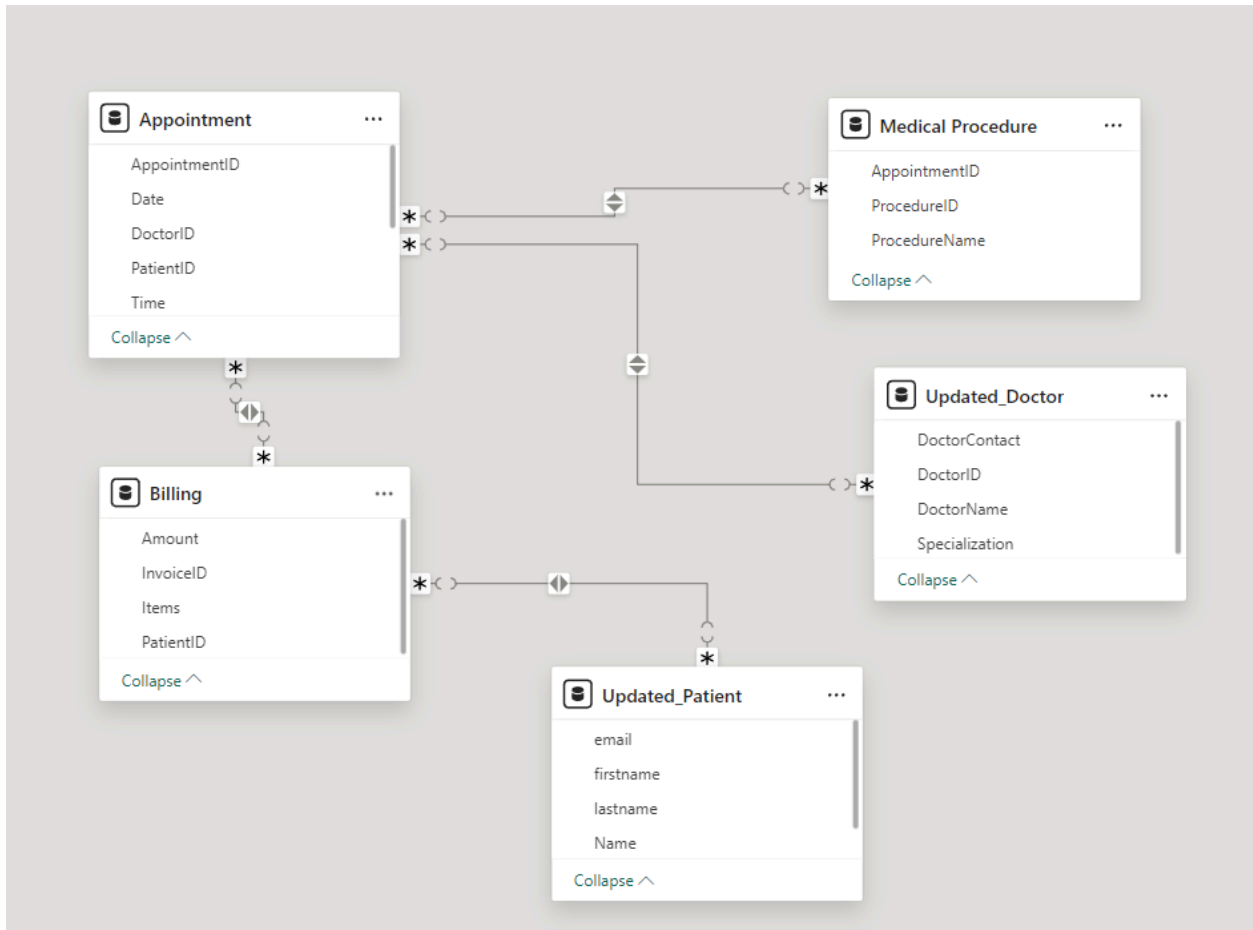
5. Workflow

1. **Data Input:** Data is pulled from the hospital's records into the database.
2. **Dynamic Filtering:** Administrators use the dropdown to select a doctor, which filters the data for relevant insights.
3. **Data Visualization:** The dashboard dynamically updates graphs, tables, and gauges to reflect the selected data.
4. **Credit Monitoring:** Tracks the usage of credits/tokens to ensure operational efficiency.

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6. Benefits

1. **Efficiency:** Simplifies data access and analysis for administrators.
2. **Transparency:** Offers clear visibility into doctor performance and financial metrics.
3. **Resource Optimization:** Helps in managing credit utilization and identifying areas for improvement.
4. **Decision Support:** Provides data-driven insights for better operational decisions.

7. Conclusion

This hospital management dashboard is a powerful tool that aligns with Cufront's vision of leveraging technology for operational excellence. By integrating features like doctor performance tracking, patient engagement insights, and credit utilization monitoring, it addresses key challenges faced by the hospital and enhances overall efficiency.