**Healthcare Patient Analytics – Dashboard**

**Problem Statemen:**

Hospitals generate a large amount of patient data including admissions, diseases, treatment outcomes, charges, and lengths of stay. However, without proper visualization, it becomes difficult for hospital administrators, doctors, and policymakers to gain insights into patient demographics, disease patterns, hospital operations, and financial performance.

This project aims to create an **interactive Tableau dashboard** that provides insights into **patient admissions, disease distribution, financial trends, and outcomes**, thereby enabling **data-driven decision-making in healthcare management.**

**Purpose:**

The dashboard will help healthcare administrators and doctors to:

* Monitor **admissions by city, department, and disease type**.
* Analyze **readmission rates, mortality rates, and outcomes**.
* Track **hospital charges, length of stay, and charge/day efficiency**.
* Identify **high-risk demographics** (by age, gender, emergency status).
* Support **resource allocation and hospital policy improvements**.

**Requirements – Charts and Visualizations:**

1. Admissions Trend by Month
2. Admissions by City
3. Admissions by Department
4. Average Cost per Disease
5. Readmission Rate by Disease
6. Readmission Breakdown
7. Length of Stay by Department
8. Charges per Day by Bed Type
9. Bed/Room Utilization
10. Procedures by Admission Type
11. Medication Count by Disease
12. Emergency Admissions Trend
13. Admissions by City

**Key Performance Indicators (KPIs):**

* **Total Admissions** (overall patient visits)
* **Unique Patients** (distinct patient IDs)
* **Emergency %** (share of emergency admissions)
* **Readmission Rate** (% of patients readmitted)
* **Mortality Rate** (% of deceased patients)
* **Count of Doctors**
* **Average LOS (Length of Stay)**
* **Charge per Day (Efficiency metric)**

**Filters:**

* Admission Date Range
* City
* Department
* Disease Type
* Admission Type

**User Access:**

* **Admin Users (Hospital Management):** Full access to all dashboards & filters.
* **Doctors/Nursing Staff:** Patient demographics, disease, LOS, and outcomes.
* **Finance Department:** Hospital charges, charge/day, avg cost per disease.
* **Public/Researchers:** Limited anonymized version showing trends.

**Future Enhancements:**

* Integration with **real-time hospital data (via API/EMR systems)**.
* Predictive analytics for **disease outbreaks** and **patient readmissions**.
* Drill-down to **doctor-level performance** and **treatment effectiveness**.
* Add **patient satisfaction survey results**.
* Machine learning models for **mortality prediction** and **cost optimization**.