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Experiment 3

AIM:

Design Interactive Dashboards and Storytelling using Tableau / Power BI / R (Shiny) / Python(Streamlit/Flask) / D3.js to be performed on the dataset - Disease spread / Healthcare

- Create interactive dashboard - Write observations from each chart given below

- (Advanced - Word chart, Box and whisker plot, Violin plot, Regression plot (linear and nonlinear), 3D chart, Jitter, Line, Area, Waterfall, Donut, Treemap, Funnel

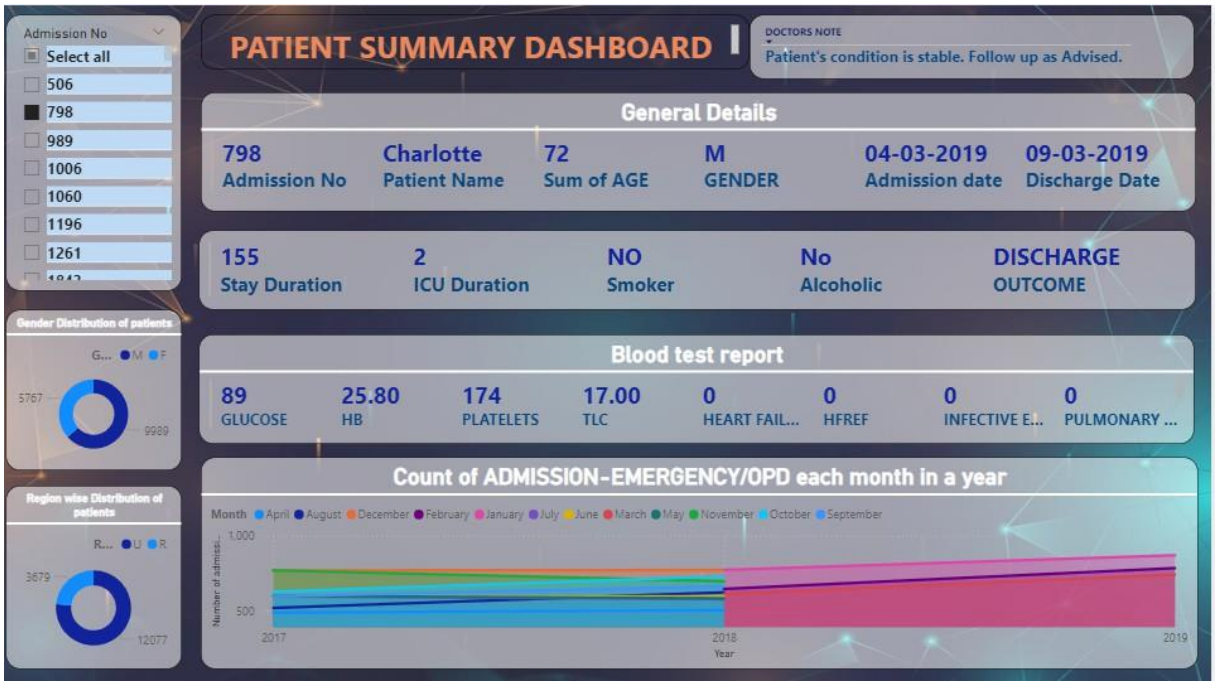
- Basic - Bar chart, Pie chart, Histogram, Timeline chart, Scatter plot, Bubble plot)

Dataset:

The dataset contains detailed information on patient admissions, including key fields such as admission number, patient name, admission date, discharge date, age, gender, and region (urban or rural). It also captures clinical details such as the type of emergency, ICU duration, hospital stay length, and patient outcomes (discharged or expired). Additionally, the dataset includes lifestyle factors like smoking and alcohol history, various blood test reports (e.g., glucose, hemoglobin, platelets), and doctor's notes providing qualitative observations on patient conditions. This dataset is structured to enable analysis of patient trends, hospital performance, and clinical outcomes.

https://drive.google.com/file/d/1cSEk31s32bjRtOfIMf2fuB5_5hn0ojh8/view

https://drive.google.com/file/d/19xRtYpLlcJJ0SVFXagryOCkLXx-zpEBw/view



The slicer on the left allows users to filter and select individual admission numbers, updating the dashboard dynamically to display details related to the selected patient. However, the pie charts remain unaffected by the slicer and continue to represent the entire dataset.

Observations:

- **Patient General Information (Multi-row Card):**
  This section presents key patient details, including admission number, name, age, gender, admission date, discharge date, and outcome (e.g., discharged or expired). The multi-row card format allows for a structured, clear summary of the patient's demographics and hospital stay information.
- **Hospital Stay Overview (Multi-row Card):**
  This section summarizes the patient's hospital stay duration, ICU days, and lifestyle factors (e.g., smoker and alcoholic status). It also shows the outcome (discharged or expired). The multi-row card provides an organized view for quick reference.
- **Blood Test Reports (Multi-card Display):**
  This section uses a multi-card display to showcase blood test results such as glucose, hemoglobin (HB), platelets, and total leukocyte count (TLC). Each card highlights key blood values, offering an easy-to-read view of the patient's lab reports, which are critical for evaluating their condition.
- **Gender Distribution of Patients (Pie Chart):**
  This pie chart visualizes the gender distribution of all patients in the dataset, comparing the ratio of male to female patients. This pie chart remains unaffected by the slicer, providing a constant overview of the entire dataset's gender distribution.
- **Region-wise Distribution of Patients (Pie Chart):**
  This pie chart displays the region-wise distribution of patients, comparing urban and rural admissions. It helps the hospital assess the geographic reach of its services. Like the gender chart,

this pie chart is unaffected by the slicer and reflects the entire dataset.

- **Admission Trends Over Time (Area Chart):**
  The area chart visualizes admission trends over time, with the X-axis showing the years extracted from the month-year column and the Y-axis representing the count of admissions. The legend indicates the type of admission (emergency or OPD), allowing users to see how admissions fluctuate over time and across different admission types. This chart helps identify peaks in patient influx, aiding in resource management and planning.
- **Doctor's Notes (Table):**
  A table is used to display the doctor's notes, providing qualitative information about the patient's condition and any follow-up recommendations. This offers a detailed narrative of the patient's case, complementing the quantitative data displayed elsewhere in the dashboard.