BHARATIYA VIDYA BHAVAN'S

SARDARPATELINSTITUTEOFTECHNOLOGY

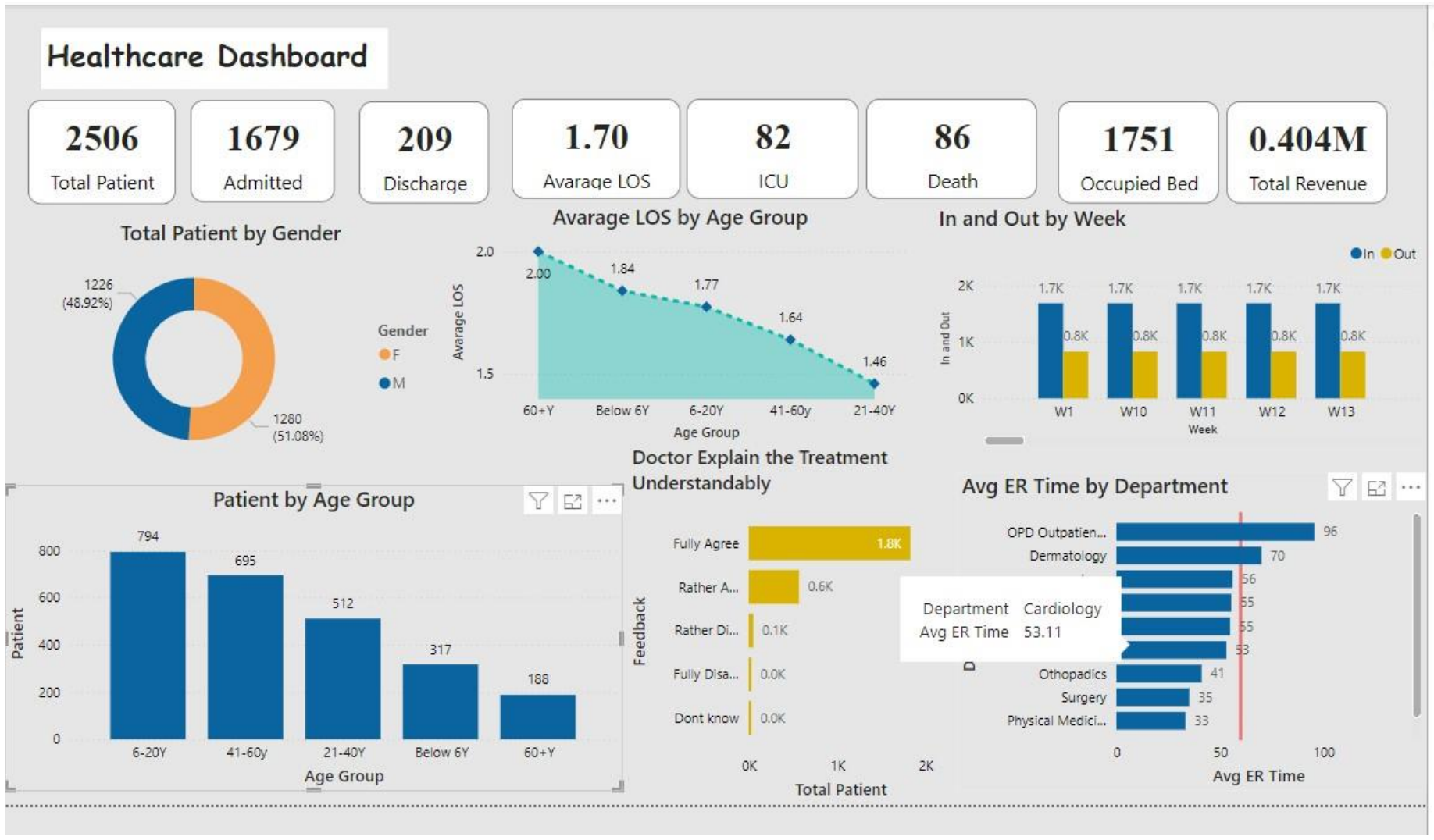
(Empowered Autonomous Institute Affiliated to University of Mumbai)

[Knowledge is Nectar]

Department of Computer Engineering

UID	2022701010
Name	Hawaiza Siddiqui
Class and Batch	BE CSE DS - Batch K
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
Description	● 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)

HealthCare Dashboard Using PowerBI -



Dataset Overview and Attributes

The dataset provided is from a healthcare management system, designed to track various aspects of patient care and hospital performance. The data includes detailed records of patients, such as their demographics, treatment details, and feedback. Here are the key attributes within the dataset:

Staff_Id: Unique identifier for the staff involved with the patient.

Bed_ID: Identifier for the bed assigned to the patient.

Dpt_ID: Department identifier where the patient is being treated.

ID: Patient's unique identifier.

Name: Name of the patient.

Gender: Gender of the patient (M for male, F for female).

City: City where the patient resides.

State: State where the patient resides.

Age: Age of the patient.

Patient type: Type of patient, such as inpatient or outpatient.

Status: Current status of the patient (e.g., Normal, Critical).

Treatment cost: Cost associated with the treatment provided to the patient.

Bed: Indicates whether a bed is occupied or not.

LOS (Length of Stay): The duration of the patient's stay in the hospital.

ER_Time: Time taken in the emergency room.

Date: Date of patient admission or treatment.

Feedback: Feedback provided by the patient or family regarding the treatment.

Rating: Rating provided based on the feedback.

Age Bucket: Categorization of the patient's age into buckets (e.g., Below 6Y, 6-20Y).

Custom: Custom field, possibly for any additional information (currently marked as Null).

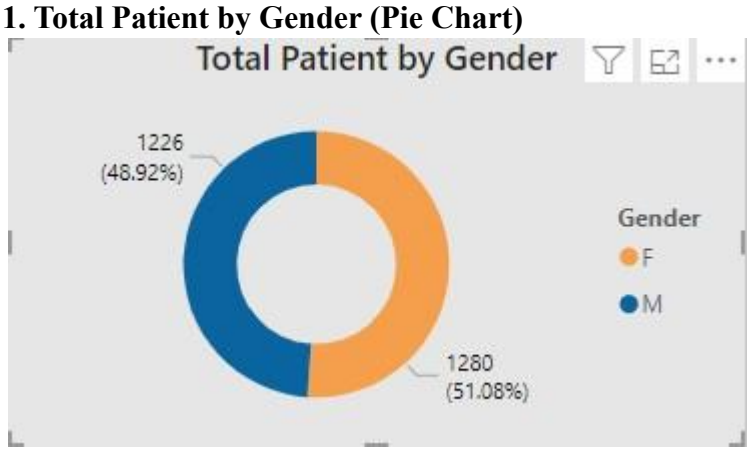
FZ me: Appears to be an indicator field (currently marked as Postive).

Purpose of the Dashboard and the Graphs

The purpose of the dashboard is to provide a visual and analytical overview of patient data and hospital performance. It allows hospital management, healthcare providers, and analysts to quickly understand trends, patterns, and areas of concern, facilitating data-driven decision-making to improve healthcare services. Each graph in the dashboard serves a specific analytical purpose.

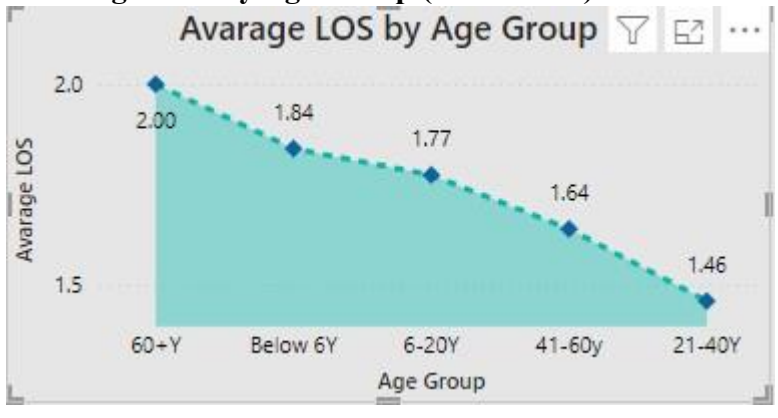
Graph Descriptions

1. Total Patient by Gender (Pie Chart)

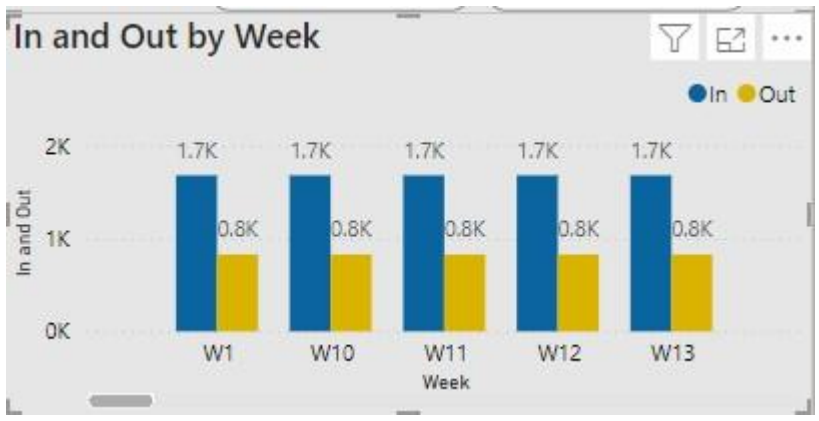


- **Description**: This pie chart represents the distribution of total patients by gender. The chart shows that 48.92% of the patients are female (F) and 51.08% are male (M).
- **Purpose**: To quickly visualize the gender distribution of patients, which can be useful for resource allocation, gender-specific healthcare programs, and understanding patient demographics.

2. Average LOS by Age Group (Line Chart)

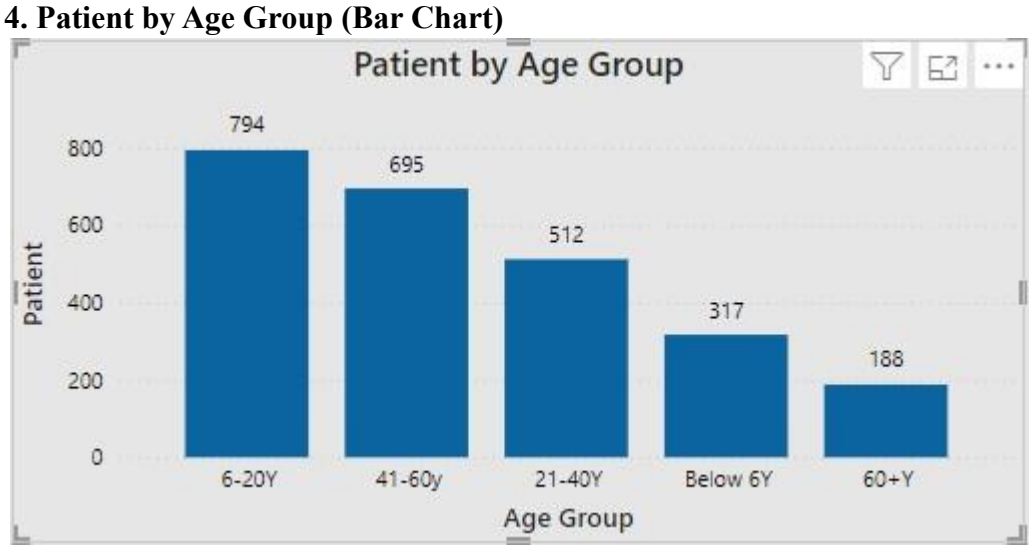


- **Description**: The line chart shows the Average Length of Stay (LOS) by age group. It indicates that older patients (60+ years) have a higher average LOS (2.00 days), while younger patients (21-40 years) have a lower average LOS (1.46 days).
- **Purpose**: To analyze how age affects the length of stay in the hospital. This can inform hospital management about resource needs and planning for different age groups. **3. In and Out by Week (Bar Chart)**



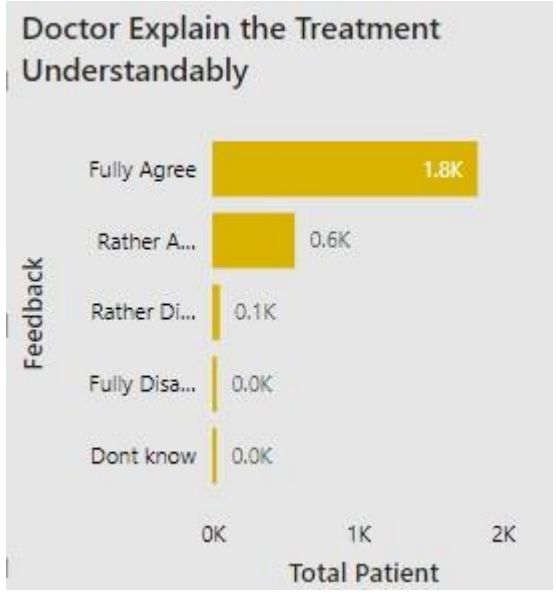
- **Description**: This bar chart shows the number of patients admitted (In) and discharged (Out) on a weekly basis over a span of 13 weeks. It indicates consistent weekly admission and discharge rates, with around 1.7K patients admitted and 0.8K discharged each week.
- **Purpose**: To monitor the flow of patients in and out of the hospital, helping with staffing, resource management, and identifying peak times for admissions.

4. Patient by Age Group (Bar Chart)



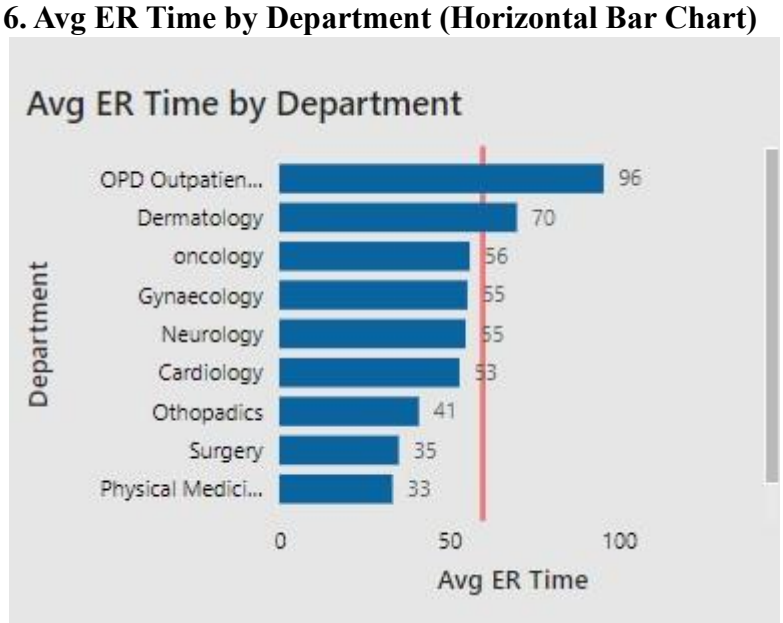
- **Description**: This bar chart displays the number of patients categorized by age group. The 6-20 years group has the highest number of patients (794), followed by 41-60 years (695).
- **Purpose**: To understand the age distribution of patients, which helps in tailoring healthcare services, resource allocation, and identifying the primary age group being treated.

5. Doctor Explain the Treatment Understandably (Bar Chart)



- **Description**: This bar chart shows patient feedback on whether the doctor explained the treatment in an understandable manner. The majority of patients (1.8K) fully agree that the treatment was explained well.
- **Purpose**: To assess communication effectiveness between doctors and patients, which is critical for patient satisfaction and treatment adherence.

6. Avg ER Time by Department (Horizontal Bar Chart)



- **Description**: This chart shows the average emergency room (ER) time taken by different departments. The OPD Outpatient department has the highest average ER time (96 minutes), while Physical Medicine has the lowest (23 minutes).
- **Purpose**: To evaluate the efficiency of emergency services across departments. This helps identify departments that may need process improvements to reduce ER time.

Conclusion - This dashboard provides a comprehensive overview of patient demographics, treatment efficiency, and patient satisfaction within a healthcare facility. Each graph serves a specific purpose, enabling hospital management to make informed decisions to improve overall healthcare service quality.