**🏥 Power BI Project: Bar Chart of Patient Visits by Department**

**🎯 Objective:**

Create a **bar chart** that shows the **number of patient visits** for each **hospital department** using the **"Hospital Visits.csv"** dataset.

**📊 Step-by-Step Instructions:**

1. **Open Power BI** and load the file:
   * Go to Home > Get Data > Text/CSV
   * Select Hospital Visits.csv and click **Load**
2. **Explore the dataset**:
   * Look at the fields available in the data.
   * Focus on the column named something like Department and Visit ID or similar (we're counting visits by department).
3. **Create a bar chart**:
   * In the **Visualizations** pane, click on the **Bar Chart** icon (choose "Clustered bar chart" or "Stacked bar chart").
   * Drag the **Department** field to the **Axis** area.
   * Drag the **Visit ID** (or another field that represents a unique visit) to the **Values** area.
   * Change the aggregation to **Count** (Power BI should do this automatically).
4. **Customize the chart** (optional but encouraged):
   * Add a title: “Patient Visits by Department”
   * Adjust colors, labels, and sorting for readability.
   * Make sure each bar represents one department’s total visits.
5. **Check your work**:
   * Hover over bars to see total visit counts.
   * Are all departments included? Are numbers accurate?

**✅ Tips:**

* If departments appear duplicated (like "Emergency" and "emergency"), check for formatting inconsistencies.
* Use the **"Transform Data"** button to clean or format department names if needed.

**🏥 Mini-Project: Analyzing Departmental Revenue Performance**

**📘 Scenario:**

**You are a junior data analyst at a hospital. Your manager wants to know how each department is performing in terms of revenue. Your goal is to create visuals that compare actual revenue to revenue goals — and clearly show which departments met or missed their targets.**

**🎯 Learning Objectives:**

* **Load and relate data from two sources**
* **Create a bullet graph using actual vs. target values**
* **Use DAX measures to summarize and compare revenue**
* **Design clean, effective visuals in Power BI**

**📂 Files You'll Use:**

* **Hospital Visits.csv (actual revenue data)**
* **Hospital Goals.csv (target revenue goals)**

**✅ PART 1: Load and Relate the Data**

1. **Open Power BI Desktop**
2. **Go to Home > Get Data > Text/CSV**
3. **Load Hospital Visits.csv**
4. **Load Hospital Goals.csv**
5. **Click on Model View (left side)**
6. **Drag the Department field from one table to connect it with the Department field in the other table (this creates a relationship)**

**✅ PART 2: Create a Bullet Graph (Revenue vs. Goal)**

1. **Go to the Visualizations pane**
2. **Click the three dots (...) > Get more visuals**
3. **Search for Bullet Chart by OKViz (or another bullet chart) and click Add**
4. **Insert the bullet chart onto the canvas**
5. **Set it up:**
   * **Category: Department**
   * **Value (Actual): You’ll add a measure next**
   * **Target (Goal): Another measure is coming**

**✅ PART 3: Create DAX Measures to Power Your Visuals**

**➕ Step 1: Total Revenue**

1. **Click on the Hospital Visits table**
2. **Go to Modeling > New measure**
3. **Paste this formula:**
4. **Total Revenue = SUM('Hospital Visits'[Revenue])**

**➕ Step 2: Revenue Goal**

1. **Click on the Hospital Goals table**
2. **Go to Modeling > New measure**
3. **Paste:**
4. **Revenue Goal = MAX('Hospital Goals'[Revenue Goal])**

**➕ Step 3: Revenue Difference**

**Revenue Difference = [Total Revenue] - [Revenue Goal]**

**➕ Step 4: Goal Met?**

**Goal Met? = IF([Total Revenue] >= [Revenue Goal], "Yes", "No")**

**✅ PART 4: Build a Table to Show Revenue Metrics**

1. **Click the Table visual**
2. **Add:**
   * **Department (from either table)**
   * **Total Revenue**
   * **Revenue Goal**
   * **Revenue Difference**
   * **Goal Met?**
3. **Rename the table title: “Department Revenue Summary”**

**✅ PART 5: Optional Slicer for Filtering**

1. **Click on the Slicer visual**
2. **Drag Department into the slicer**
3. **Resize it and place it on the side of the report**

**🧠 Wrap-Up Questions:**

* **Which departments met their revenue goals?**
* **Which departments missed the mark?**
* **What might explain these patterns?**
* **What would you recommend to improve performance?**

**🎯 Mini-Project: Year-over-Year Revenue (Bar-in-Bar Chart)**

**🧠 Objective:**

Create a **Bar-in-Bar Chart** that compares **total revenue** across different **years**, using built-in Power BI functionality — no coding needed!

**📂 Dataset to Use:**

* Hospital Visits.csv

**🛠 Instructions (No DAX!):**

1. **Load the Data**
   * Import Hospital Visits.csv into Power BI.
2. **Insert a Bar Chart**
   * Go to the **Visualizations** pane and select **Clustered Bar Chart**.
3. **Set Up the Axis**
   * Drag Date of Admit into the **X-Axis (or Axis field)**.
   * Power BI will **automatically group the dates by Year** — leave it like that!
4. **Add Revenue Data**
   * Drag the Revenue field into the **Values** area.
   * Power BI will automatically **sum** the revenue for each year.
5. **Duplicate for Comparison**
   * Drag the Revenue field into the **Values** area again.
   * Now you’ll have **two bars per year** — this is your “bar-in-bar” layout!
6. **Customize Colors**
   * Click each series and assign a **different color** for visual comparison (e.g., light blue and dark blue).
7. **Add a Title**
   * Click on the chart title and rename it to:

**"Year-over-Year Hospital Revenue"**

1. **(Optional) Add a Filter**
   * Drag the Hospital Branch field into a **Slicer** if you want to compare branches side-by-side.

**🤔 Discussion Questions:**

* Which year had the highest total revenue?
* Do you notice any trends between years?
* If you filtered by hospital branch, do revenue patterns change?

**🏥 Mini Project: Patient Visits by Department (ICU + Neonatal Focus)**

**🎯 Goal**

Create a bar chart in Power BI that shows the **number of patient visits per department**, with a special **highlight on the ICU and Neonatal departments**.

**🧩 Steps to Follow**

1. **Open Power BI Desktop**  
   Launch Power BI and open a new report.
2. **Load the Data**
   * Click **Home > Get Data > Text/CSV**.
   * Select the **“Hospital Visits.csv”** file.
   * Click **Load** to bring the data into Power BI.
3. **Explore the Data**
   * Look for a column that shows **Department Names**.
   * Look for a column that shows **Patient Visits** (or something similar like rows that represent visits).
4. **Create the Bar Chart**
   * Go to the **Visualizations** pane.
   * Select the **Clustered Bar Chart** (or Column Chart).
   * Drag the **Department** field to the **X-axis** (or Category).
   * Drag the **Patient Visits** field to the **Y-axis** (or Values).
     + If you don't have a "visits" number, just count the number of rows per department (Power BI will do this automatically if you drag a text field like "Patient ID" to Values and set it to **Count**).
5. **Highlight ICU and Neonatal**
   * Click the chart to select it.
   * In the **Format** pane, go to **Data colors**.
   * Find the color options for each department.
   * Change **ICU** and **Neonatal** to standout colors (like red or blue).
   * Keep the other departments in neutral colors (like gray).
6. **Add a Title**
   * Click on the chart.
   * In the **Format** pane > **Title**, turn it on and name it:  
     **“Patient Visits by Department (ICU & Neonatal Highlighted)”**

**💡 Helpful Hints**

* Hovering over a bar shows exact values (tooltips).
* You can sort the bars by number of visits to see which departments are busiest.
* Want to go further? Try adding **data labels** to show exact counts on each bar.

**🏥 Mini-Project: Patient Visits Over Time (Line Chart)**

**🎯 Goal:**

Create a **line chart** that shows the number of patient visits **per month**, comparing the trends in **2018** and **2019**.

**📁 Dataset:**

* Hospital Visits.csv

**🛠 Step-by-Step Instructions:**

1. **Load the Dataset**
   * Open Power BI and load Hospital Visits.csv.
2. **Check Your Fields**
   * Make sure you see these two fields:
     + Date of Admit (should be a Date type)
     + Number of Patient Visits
3. **Create Date Parts**
   * Go to the **Data View**.
   * Create two new columns:
   * Year = YEAR([Date of Admit])
   * Month = FORMAT([Date of Admit], "MMM")
   * MonthNumber = MONTH([Date of Admit])
4. **Sort the Month Column**
   * Click on the Month column.
   * In the ribbon, choose **Sort by Column → MonthNumber**.
   * This keeps months in proper order (Jan, Feb, Mar...).
5. **Create the Line Chart**
   * Go to **Report View** and insert a **Line Chart** visual.
   * Set up the chart using these fields:
     + **X-axis** → Month
     + **Y-axis** → Number of Patient Visits (SUM)
     + **Legend** → Year
6. **Format the Chart**
   * Add a title: **“Monthly Patient Visits (2018 vs 2019)”**
   * Turn on **data labels** (optional but helpful).
   * Customize colors for better comparison.

**✅ You’re Done When:**

* The line chart has **two lines**—one for **2018** and one for **2019**.
* **Months are in the correct order** (Jan → Dec).
* You can clearly see how patient visits changed month to month across both years.

**📊 Reflection Questions:**

1. **What trends do you notice?**
   * Do the number of patient visits go up or down during certain months?
   * Are there any spikes or drops that stand out?
2. **Compare the years:**
   * How does 2019 compare to 2018 overall?
   * Were there more or fewer visits in one year than the other?
3. **Spot the differences:**
   * Are there specific months where the two years look very different?
   * What might have caused this? (You can make guesses—even if you don’t know for sure.)
4. **Real-world thinking:**
   * If you worked for this hospital, what would you do with this information?
   * How might this chart help you prepare for the future?