

## Objective

Design an insightful dashboard to analyze sales data, track key performance indicators (KPIs), and generate actionable insights for improving sales performance.

## Requirements:

### 1. Advanced Metrics & Calculations

- **Sales Growth Rate:** Calculate month-over-month (MoM) and year-over-year (YoY) sales growth rates.
- **Average Order Size:** Compute the average order size using the formula (Total Sales / Quantity Sold).
- **Profit Calculation:** Include a column to reflect profit figures.
- **Sales by Time of Day:** Analyze sales trends based on time (morning, afternoon, evening, night) using the Time column.

### 2. Dashboard Elements

- **KPIs Summary Section:** Incorporate the following metrics as KPIs:
  - Total Sales
  - Total Quantity Sold
  - Total Profit
  - Average Order Size
  - Sales Growth Rate
  - Return Rate
- **Top Products, Regions, and Customers:**
  - Identify the top two products by total sales.
  - Identify the top two regions by total sales.
  - Identify the top two customers by total sales.
- **Time-Based Sales Analysis:**
  - Analyze sales by day of the week to identify peak sales days.
  - Analyze sales by time of day (morning, afternoon, evening, night).
- **Sales Rep Performance:** Create a ranked list or chart displaying sales reps by their total sales and quantity sold.

### 3. Interactive Filtering & Slicers

- **Slicers:** Implement slicers for:
  - Product Category
  - Region
  - Sales Rep
  - Date (Year/Month)
  - Time of Day (Morning, Afternoon, Evening, Night)
- **Dynamic Filtering:** Enable the dashboard to update in real time based on slicer selections.

### 4. Data Visualization

- **Monthly and Yearly Sales Trends:** Create a line or area chart to illustrate monthly and yearly sales trends.

- **Hourly Sales Distribution:** Utilize a heatmap or line chart to depict sales distribution by hour of the day.
- **Sales by Product Category:** Use a pie or donut chart to show the share of total sales for each product category.
- **Sales vs. Returns:** Generate a bar chart comparing total sales and returns across regions.
- **Profit Margin Analysis:** Create a line chart to visualize profit margins over time.

#### 5. Dashboard Insights & Analysis

- **Actionable Insights:** Provide three observations based on the data, such as identifying peak sales hours, highlighting best-performing products, or noting sales spikes on specific days.

6. **Recommendations:** Suggest two strategies for sales improvement, such as increasing marketing efforts during peak hours, focusing on high-profit products, or targeting specific customer segments.

There is the database [link](#)