Sales Data Analysis – Project Overview

This **Sales Data Analysis** project was developed using a combination of **Power BI** for dynamic data visualization and **Pandas** (Python) for initial data cleaning and transformation. The dataset used is the **Online Sales Dataset**, sourced from **Kaggle**, containing historical transactional data related to online purchases.

 Tools & Technologies:

- **Power BI**: For creating interactive dashboards and reports.

- **Pandas (Python)**: For data preprocessing, cleaning, and exploratory data analysis.

- **Dataset**: "Online Sales Dataset" downloaded from Kaggle, containing details on product sales, customer transactions, order dates, and regions.

Analysis :

Power BI Cards – KPI Overview

In the **Sales Data Analysis** dashboard, individual **KPI Cards** were used to display key business metrics at a glance. These cards help stakeholders quickly understand performance without needing to analyze detailed charts or tables.

📌 **Cards Included:**

1. **Number of Units Sold**

   o **Description**: Displays the total quantity of products sold during the selected period.

   o **Purpose**: Helps track overall sales volume and product demand.

2. **Total Revenue**

   o **Description**: Shows the total amount of money generated from sales.

   o **Formula**: Typically calculated as Units Sold × Selling Price.

   o **Purpose**: A primary measure of business success and performance.

3. **Total Cost**

   o **Description**: Represents the total cost incurred to produce or acquire the sold products.

   o **Purpose**: Helps in understanding expenses and managing budgeting.

4. **Total Profit**

   o **Description**: Indicates the financial gain after subtracting the total cost from the total revenue.

   o **Formula**: Profit = Revenue - Cost

   o **Purpose**: Critical for evaluating business profitability and guiding strategic decisions.

Filters / Slicers:

- **Year Filter**: Allows users to select and compare sales performance by specific years, enabling trend analysis over time.
- **Country Filter**: Enables regional breakdowns of sales data, helping users identify high- and low-performing markets.

Funnel Chart – Profit by Product

In the Sales Data Analysis dashboard, a **Funnel Chart** was used to visualize **Profit by Product**, helping to identify how different products contribute to overall profitability.

Bar Chart – Revenue by Product

- Compares revenue generated by each product.
- Highlights top revenue drivers.
- Useful for product performance analysis and inventory planning**.**

Bar Chart – Revenue by Month

- Visualizes monthly revenue trends.
- Helps identify seasonal patterns, sales spikes, and off-peak months.
- Supports monthly performance tracking and marketing strategy alignment**.**

Pie Chart – Units Sold by Country
Shows the distribution of total units sold across countries. Great for understanding market reach and regional demand.

Power BI Q&A Feature:

A Q&A visual was added to enable users to ask natural language questions (e.g., "What was the total profit in 2023?" or "Show revenue by country") and receive instant, auto-generated visuals in response.
This boosts user interactivity, especially for non-technical users, and enhances self-service analytics.

Conclusion:

The **Sales Data Analysis Dashboard** successfully transforms raw transactional data into meaningful insights through a combination of **Power BI's powerful visualization tools** and **Pandas for data preprocessing**. By integrating interactive charts, KPI cards, filters, and natural language Q&A features, the dashboard offers a comprehensive, user-friendly solution for tracking and analyzing sales performance.

Key metrics such as **Revenue**, **Profit**, **Units Sold**, and **Cost** are clearly highlighted, while visuals like **funnel charts**, **bar charts**, **pie charts**, and **monthly trend analyses** provide deeper business insights. The addition of **filters for Year and Country**, along with the **Q&A visual**, makes this dashboard flexible, dynamic, and accessible to both technical and non-technical users.