🍕 Pizza Sales Analytics Dashboard (SQL + Power BI)

Objective

Developed an end-to-end sales analytics dashboard to gain insights into pizza store performance using **SQL, Power Query, and Power BI**. This project demonstrates a complete BI lifecycle — from **data cleaning and transformation** to **interactive dashboards and advanced DAX calculations**, reflecting real-world business intelligence use cases.

Key Features

- **Advanced Data Cleaning & Transformation (Power Query)**
  - Removed nulls, corrected data types, standardized text fields, and derived custom date fields (e.g., weekday names, month names).
  - Used **Power Query (M language)** to implement efficient, reusable ETL logic before loading into the data model.
- **Custom Metrics with SQL + DAX**
  - **SQL Queries**: Extracted KPIs such as Total Revenue, Average Order Value, Total Pizzas Sold, and Orders.
  - **DAX Measures**: Created dynamic metrics inside Power BI for % contribution, rank logic (Top 5/Bottom 5), time intelligence (monthly trends), and conditional formatting.
- **Interactive Power BI Dashboard**
  - Executive-level dashboard with multiple report pages: KPIs, Order Trends, Category Analysis, and Product Performance.
  - Enabled dynamic analysis using filters for date range, pizza category, and pizza size.
- **Trend & Seasonality Analysis**
  - Identified daily and monthly trends in order volume and revenue to help with staffing and marketing strategies.
  - Used line charts, clustered bars, and slicers to visualize and explore these patterns.
- **Product Performance Breakdown**
  - Visualized revenue contribution by pizza category (e.g., Classic, Veggie) and size (S, M, L).
  - Highlighted best and worst-selling pizzas using DAX-driven ranked lists.
- **Real-Time Business Insight Simulation**
  - Created a user-friendly interface for decision-makers to explore key sales metrics and optimize operations.

Project Workflow

1. **SQL Analysis:**
    - Wrote structured queries to calculate KPIs and prepare summary tables.
    - Clean and scalable logic to support visualizations directly in Power BI.
2. **Power Query Transformation:**
    - Loaded raw sales data and applied multiple transformations including:
        - Text normalization, date parsing, column splitting, and data type adjustments.
        - Created helper columns for analytics like weekday, month, and order categorization.
3. **DAX in Power BI:**
    - Used **DAX** to build calculated columns, dynamic measures, and filtering logic.
4. **Dashboard Design & Insight Generation:**
    - Created clean, modern dashboards with consistent layout and data storytelling.
    - Focused on usability for stakeholders: executives, marketers, and store managers.

Tools & Technologies

- **SQL Server** – For querying transactional data and deriving analytical metrics.
- **Power BI Desktop** – For data transformation, visualization, and dashboard development.
- **DAX (Data Analysis Expressions)** – For building dynamic, context-aware KPIs and measures.
- **Power Query**– For powerful data cleaning and transformation within Power BI.

Conclusion & Learnings

This project not only strengthened my technical skills in **SQL, Power BI, Power Query, and DAX**, but also gave me hands-on experience in building a complete analytics solution from scratch. Here are the key takeaways:

- Learned how to connect and integrate **Microsoft SQL Server** with **Power BI** for seamless data flow.
- Understood the practical application of **Power Query** for cleaning and shaping real-world data.
- Mastered the use of **DAX** to create dynamic measures and calculations that drive insight.
- Gained experience in designing dashboards with user-friendly interfaces, enabling decision-makers to interact with data intuitively.
- Developed the ability to extract business insights from raw data and communicate them visually.

Overall, this project improved my data storytelling, visualization, and end-to-end BI development skills—preparing me to contribute meaningfully to real-world data-driven decision environments.