Product and Sales Analysis Dashboard

Project Overview

This project involves creating a dynamic **Product and Sales Analysis Dashboard** that provides an insightful overview of product and sales performance. The dashboard visualizes key metrics such as total sales, orders, and product performance, and includes detailed category breakdowns to help business users make informed decisions.

Business Question

The goal of this project was to provide an insightful overview of product and sales data through a dynamic dashboard, with key performance indicators (KPIs) and detailed visualisations. The aim was to answer critical business questions such as:

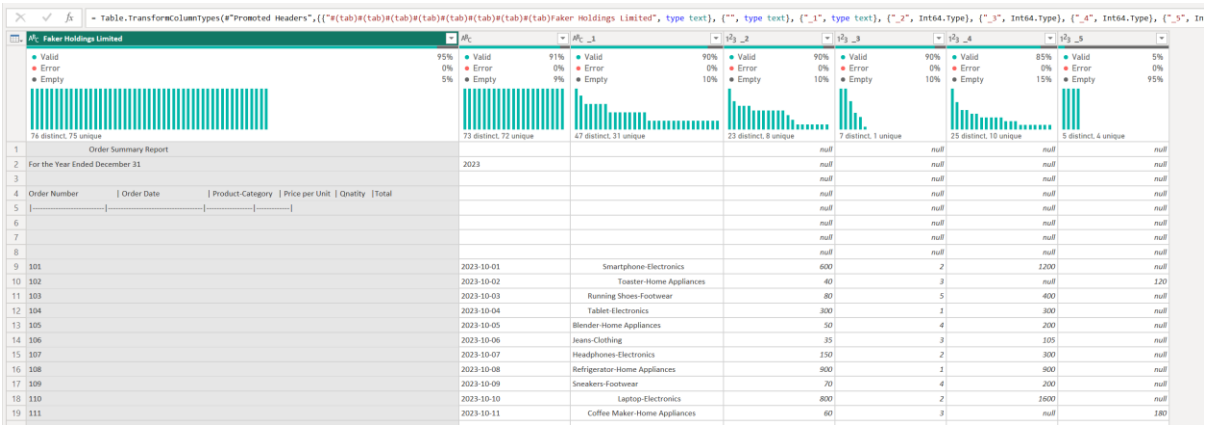
- What are the total sales and orders for the given period?
- How do different product categories perform in terms of sales and quantity?
- What are the trends in sales over time?

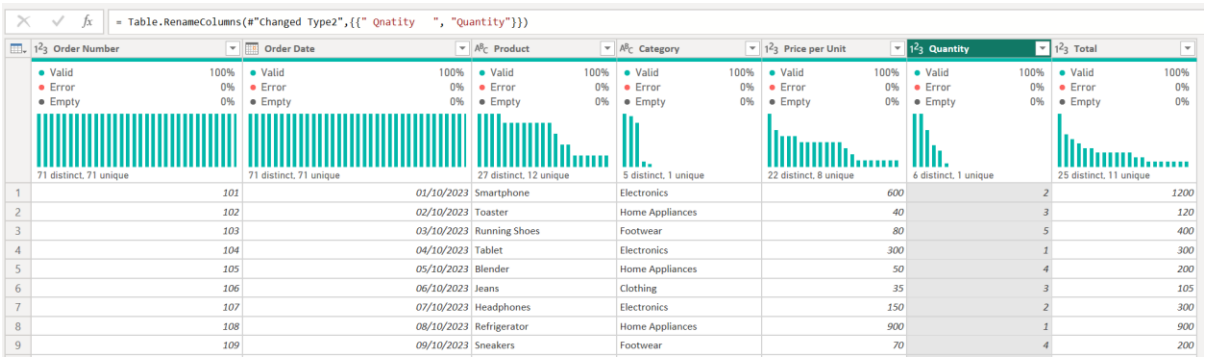
Tools Used:

- **Power BI**: Used to clean, transform, and visualise the data.
- **Power Query Editor**: For data cleaning and transformation.
- **DAX (Data Analysis Expressions)**: Applied in creating dynamic KPIs and calculations.

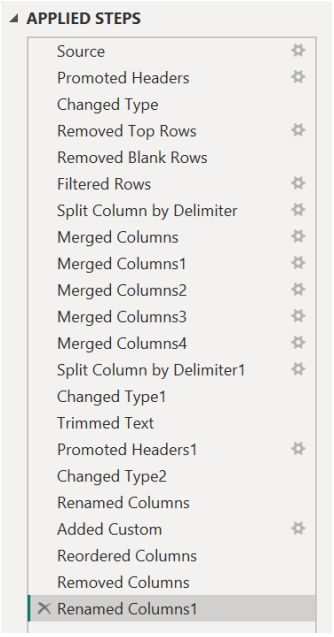
Data Cleaning and Transformation

Power Query Editor





- **Removing unnecessary rows**: The top 3 rows were removed, as they did not contain relevant data.
- **Removing blank rows**: Ensured the dataset only contains meaningful data by eliminating any blank rows.
- **Filtering for relevant data:** Kept rows that had an order number, ensuring we focused only on actual sales data.
- **Splitting and merging columns**:
    - Split columns based on delimiters (| and -), ensuring that each data point was correctly categorized.
    - Merged columns back together to position header names correctly.



- **Trimming whitespace**: Both product-related columns were trimmed to remove any unwanted spaces, ensuring accurate categorization.
- **Promoting headers**: The top row was promoted to become the header, ensuring proper column naming.
- **Correcting typos**: Fixed any errors in column headers (such as typos) to ensure consistency and clarity.
- **Created custom column**: Discovered Sneakers and Running Shoes were not always categorised as Footwear. Created a new column to fix this.

Running Shoes	Footwear
Sneakers	Footwear
Sneakers	Clothing
Sneakers	Clothing
Running Shoes	Clothing
Sneakers	Clothing
Running Shoes	Clothing
Sneakers	Clothing
Running Shoes	Clothing

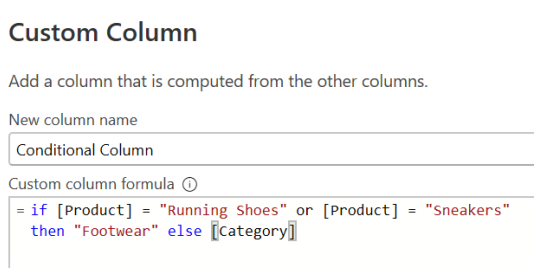


Table View in Power BI

- **Formatting currency**: Converted relevant columns like Price per Unit and Total Sales to currency format for easier interpretation.

Data Analysis and Visualisation

Key Performance Indicators (KPIs):
To summarise the data and give the business actionable insights briefly, I created 6 KPI cards:

1. **Total Sales**: Displays the total value of sales.
2. **Total Orders**: Provides the number of orders placed.
3. **Unique Products**: Shows the number of distinct products.
4. **Average Order Quantity**: Calculates the average quantity of items per order.
5. **Average Price per Unit**: Highlights the average price across all products.
6. **Unique Categories**: Displays the number of unique product categories

Visualisations:

- **Total Sales by Category**: A bar chart showing the total sales broken down by product category.
- **Total Quantity by Category**: A pie chart that visualises the number of products ordered per product category.
- **Table with Product, Total Sales, Total Quantity, and Total Orders**: A detailed table listing each product, its total sales, quantity sold, and total orders, enabling deeper analysis.
- **Total Sales by Day**: A line graph representing sales trends over time, helping to identify any sales spikes or trends.
- **Slicers for Filtering**: Added interactive slicers for:
    - **Product**: Allows users to filter data by specific product.
    - **Category**: Enables filtering by product category.
    - **Month**: Allows analysis based on different months, providing flexibility for time-based trends.

Key Insights

- **Top-Performing Categories:**
    - The **Electronics** category generated the highest sales, totalling **€13.2k**, despite only accounting for **22%** of total orders. This indicates that while fewer orders were placed, the value per order was higher.
    - In contrast, **Home Appliances** and **Clothing** categories made up a significant portion of orders (**31%** and **27%**, respectively), but their combined sales totalled only **€8.3k**, highlighting a discrepancy between order volume and sales value.
- **Product Performance:**
    - **Laptops**, **Refrigerators**, and **Tablets** were the standout products in terms of total sales, contributing a combined total of **€11k** to overall sales. These products should be a focus for continued growth in the future.
    - **Sneakers** were the leading product in terms of total quantity sold, with **22 units** sold, indicating strong demand for this item, though it did not contribute as significantly to overall sales.

- **Sales Trends:**
    - Sales fluctuate significantly, with the **highest single-day sales** reaching **€1,600**, while the **lowest** recorded was only **€80**. This variance suggests the potential for identifying specific days or events driving higher sales.
    - Since only **three months** of data is available, there is insufficient data to accurately identify seasonal trends. More data over a longer period would be needed to assess any seasonal patterns in sales behaviour.

Recommendations

- **Low-Performing Categories:**
    - The **Personal Goods** category is underperforming, with **Smart Watches** as the only product in this category. It may be beneficial to move this product into the **Electronics** category.
- **Marketing Strategy:**
    - Although all other four categories (**Electronics**, **Home Appliances**, **Clothing**, and **Footwear**) receive similar order quantities, the **Electronics** category generates significantly higher sales. Therefore, marketing efforts should be focused on the **Electronics** category to maximize sales potential, capitalising on its higher sales value per order.