

Power BI Sales Performance Dashboard

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Project Overview

This Power BI dashboard provides a comprehensive analysis of sales data, focusing on key performance metrics, profit trends, and top-performing products. It is designed to help stakeholders make data-driven decisions by offering visual insights into the company’s financial performance and customer behavior.

Key Objectives

- Analyze total sales, profit, and quantity sold.
- Identify top 10 products based on profit.
- Highlight the top 10 customers by sales revenue.
- Understand trends across regions and customer segments.
- Provide actionable insights for business growth.

Dashboard Sections

Section	Description
Profit by Category	Bar chart visualizing which product categories contribute the most to overall profit.
Monthly Revenue	Line chart showing revenue trends across months for seasonal performance tracking.
Top 10 Products by Revenue	Treemap highlighting the top revenue-generating products (e.g., Milk, Novel, etc.).
Seasonal Patterns per Category	Heatmap indicating how each category performs during different months.

Tools Used

- Excel – Data cleaning, formatting
- Power BI – Dashboard development, DAX

- SQL – Data querying and transformation
- Python (optional) – Data preprocessing or advanced analytics

SQL Section

SQL Tools Used: PostgreSQL

-- Total Revenue

```
SELECT SUM(Sales) AS Total_Revenue FROM Sales_Data;
```

-- Total Profit

```
SELECT SUM(Profit) AS Total_Profit FROM Sales_Data;
```

-- Top 5 Products by Sales

```
SELECT Product_Name, SUM(Sales) AS Total_Sales
FROM Sales_Data
GROUP BY Product_Name
ORDER BY Total_Sales DESC
LIMIT 5;
```

-- Monthly Revenue Trend

```
SELECT DATE_FORMAT(Order_Date, '%Y-%m') AS Month, SUM(Sales) AS Monthly_Sales
FROM Sales_Data
GROUP BY Month
ORDER BY Month;
```

Profit Margin by Category

```
SELECT
  Category,
  SUM(Profit) AS Total_Profit,
  SUM(Revenue) AS Total_Revenue,
  ROUND(SUM(Profit)::NUMERIC / NULLIF(SUM(Revenue), 0) * 100, 2) AS Profit_Margin_Percent
FROM retail_data
GROUP BY Category
ORDER BY Profit_Margin_Percent ASC;
```

Top Profit-Draining Products

```
SELECT
  Category,
  Product,
  SUM(Profit) AS Total_Profit
FROM retail_data
GROUP BY Category, Product
ORDER BY Total_Profit ASC
LIMIT 10;
```

Monthly Revenue (for Tableau/Trend)

```
SELECT
  EXTRACT(MONTH FROM Date) AS Month,
  SUM(Revenue) AS Total_Revenue
FROM retail_data
```

GROUP BY Month
ORDER BY Month;

Seasonal Category Trends

```
SELECT  
    EXTRACT(MONTH FROM Date) AS Month,  
    Category,  
    SUM(Revenue) AS Revenue  
FROM retail_data  
GROUP BY Month, Category  
ORDER BY Month, Revenue DESC;
```

Python Section

Libraries used:

```
import pandas as pd  
import matplotlib.pyplot as plt  
import seaborn as sns
```

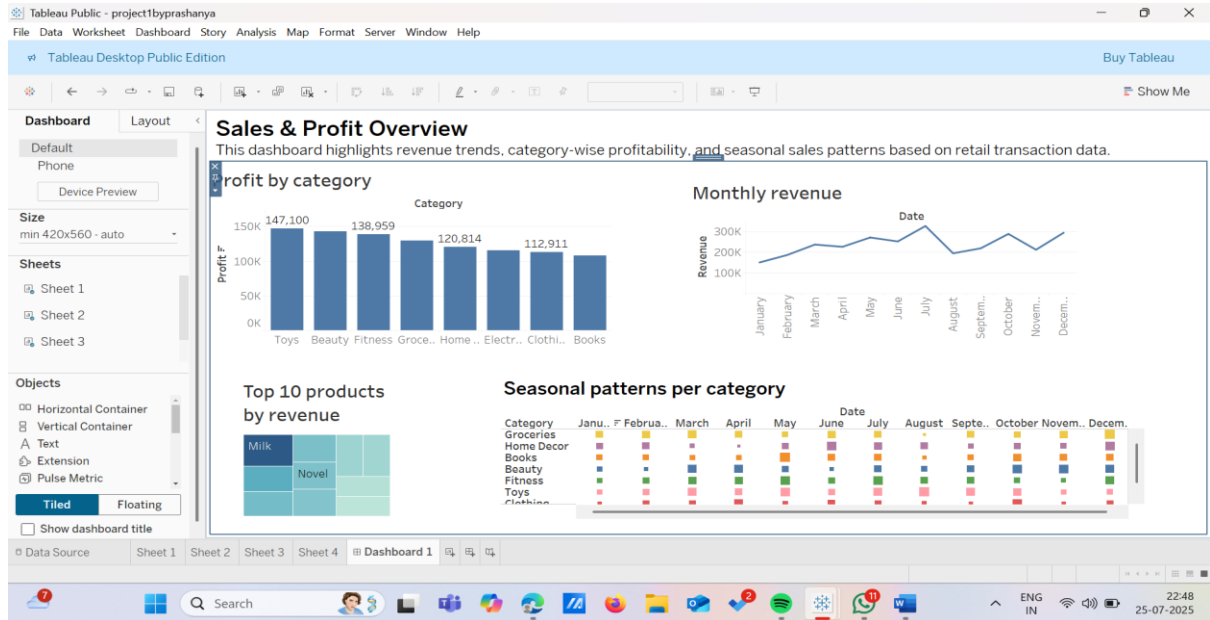
Sample code:

```
# Load data  
df = pd.read_csv("sales_data.csv")  
  
# Clean Data  
df.dropna(inplace=True)  
  
# Total Revenue  
total_revenue = df["Sales"].sum()  
  
# Monthly Sales Trend  
df['Order_Date'] = pd.to_datetime(df['Order_Date'])  
df['Month'] = df['Order_Date'].dt.to_period('M')  
monthly_sales = df.groupby('Month')['Sales'].sum()  
  
# Plot  
monthly_sales.plot(kind='bar', figsize=(12, 6), title="Monthly Sales Trend")  
plt.ylabel("Sales")  
plt.xlabel("Month")  
plt.show()
```

Insights Gained

- The majority of sales were contributed by a few top-performing products.
- Certain customers consistently contribute a large portion of revenue.
- There are regional variations in sales and profit that can be targeted for marketing.
- Customer segments with higher purchase frequency can be prioritized for retention campaigns.

Dashboard Preview



How to View the Report

To explore the dashboard:

1. Clone the repo
2. Open the .twbx file using Tableau Desktop
3. Interact with filters and visuals to gain insights