**Sales Data Analysis Project**

**Overview**

This project involves analyzing a comprehensive sales dataset covering transactions across various product categories, customer demographics, sales locations, and payment methods. The dataset includes detailed fields such as product info, pricing, quantity, discounts, payment methods, customer age group and gender, store locations, sales representatives, total sales amounts, and profit figures.

Utilizing SQL for data extraction and transformation, combined with Power BI for interactive visualization, this project provides actionable insights to support business decision-making.

**Dataset Description**

The dataset includes the following key columns:

* **Transaction\_Id:** Unique identifier for each sale.
* **Date:** Date of transaction.
* **Country:** Country where the transaction occurred.
* **Product\_Id, Product\_Name, Category:** Product details.
* **Price\_Per\_Unit, Quantity\_Purchased:** Sales volume and pricing details.
* **Cost\_Price, Discount\_Applied**: Cost structure and discounts.
* **Payment\_Method:** Cash, Credit Card, Mobile Payment.
* **Customer\_Age\_Group, Customer\_Gender**: Buyer demographics.
* **Store\_Location, Sales\_Rep:** Store and sales representative information.
* **Total\_Amount, Profit:** Sales total and profit earned.

**Key Analysis Points**

* Sales performance by category and product.
* Trends across different customer age groups and genders.
* Impact of payment methods on sales.
* Geographic sales distribution by store location.
* Sales rep performance metrics.
* Profitability analysis including discount effects.

**Sample SQL Queries**

**-- 1. Total Sales and Profit by Product Category**

**SELECT category,**

**SUM(total\_amount) AS total\_sales,**

**SUM(profit) AS total\_profit**

**FROM sales**

**GROUP BY category**

**ORDER BY total\_sales DESC;**

**-- 2. Sales Breakdown by Payment Method and Customer Demographics**

**SELECT payment\_method,**

**customer\_age\_group,**

**customer\_gender,**

**COUNT(transaction\_id) AS total\_transactions,**

**SUM(total\_amount) AS total\_sales**

**FROM sales**

**GROUP BY payment\_method, customer\_age\_group, customer\_gender**

**ORDER BY total\_sales DESC;**

**-- 3. Top 5 Sales Representatives by Profit**

**SELECT sales\_rep,**

**SUM(profit) AS total\_profit**

**FROM sales**

**GROUP BY sales\_rep**

**ORDER BY total\_profit DESC**

**LIMIT 5;**

**-- 4. Monthly Sales Trend**

**SELECT DATE\_TRUNC('month', date) AS sales\_month,**

**SUM(total\_amount) AS monthly\_sales**

**FROM sales**

**GROUP BY sales\_month**

**ORDER BY sales\_month;**~~~

**Power BI Project Insights**

* Interactive dashboards visualizing sales trends over time.
* Category-wise and product-wise sales performance charts.
* Customer demographic segmentation with sales and profit overlays.
* Heatmaps for sales distribution across store locations.
* Performance scorecards highlighting top sales reps and products.
* Drill-down capabilities to explore discounts and payment methods impact.

**How to Use**

1. Import the data into your POSTGRES environment or Power BI Desktop.
2. Run the POSTGRES queries to extract data insights or use Power BI for visual exploration.
3. Customize and extend the dashboards for specific business questions.
4. Share and collaborate on GitHub by uploading your POSTGRES scripts and Power BI reports.

**Repository Structure**

* /Postgres/ - Contains POSTGRES query files.
* /powerbi/ - Contains Power BI project files (.pbix).
* /data/ - Raw sales.xlsx dataset.
* README.md - Project overview and instructions.

This README is designed for professional audiences on GitHub and LinkedIn, providing clear understanding of the dataset, key analysis questions, sample POSTGRES queries for data retrieval, and an overview of Power BI visualizations to be included in the project repository.