Data Collection:

About Dataset:

This dataset provides a comprehensive overview of online sales transactions across different product categories of "LetsShopOnline" (Fictional) Store. Each row represents a single transaction with detailed information such as the order ID, date, category, product name, quantity sold, unit price, total price, region, and payment method.

Source: https://www.kaggle.com/datasets/shreyanshverma27/online-sales-dataset-popular-marketplace-data

Objective: Leverage data analysis to uncover insights that inform inventory and marketing strategies. These insights will focus on:

Top Performers: Identifying the most popular products, categories, and payment methods

Sales Trends: Analyzing sales data over time to uncover seasonal patterns and growth opportunities.

Regional Preferences: Exploring how product category popularity varies across different regions.

Payment Method Impact: Investigating the relationship between payment methods and sales volume.

This analysis will be used to:

Increase Current Sales: Know the Customer preferences to boost up the sales

Optimize Inventory: Focus inventory allocation on high-selling products and categories.

Targeted Marketing: Develop marketing campaigns tailored to specific regions, product categories, and payment method preferences.

By completing these analyses, we can gain a data-driven understanding of customer behavior and optimize our strategies for both inventory management and marketing.

Data Dictionary:

Order ID	Unique identifier for each sales order.
Date	Date of the sales transaction
Category	Broad category of the product sold (e.g., Electronics, Home Appliances, Clothing, Books, Beauty Products, Sports).
Product Name	Specific name or model of the product sold.
Quantity	Number of units of the product sold in the transaction.
Unit Price	Price of one unit of the product.
Total Price	Total revenue generated from the sales transaction (Quantity * Unit Price).
Region	Geographic region where the transaction occurred (e.g., North America, Europe, Asia).
Payment Method	Method used for payment (e.g., Credit Card, PayPal, Debit Card).

Data Cleaning:

- Duplicate check: Completed, no duplicates found
- DataTypes of Features check: Completed
- Text Data Inconsistensies check: Completed; no cleaning is required
- Created additional features(quarter,month) as required for analysis.
- Created Plots & Charts as required.

# Data Analysis & Recommendations:

**Overall Insights(For the year 2024 - from January to August):**

Sales Volume & Revenue: Sales Volume: 518 with Revenue $80,567.85, Overall Asia is top in sales volume compared to rest but North Americal is having highest revenue.

Sales Trends: Sales Volume And Revenue keep decreasing over time since April 2024:

Time	Sales Volumne	Revenue
Jan	68	$14,548
Feb	77	$10,803
Mar	82	$12,849
Apr	65	$12,452
May	60	$8,455
Jun	61	$7,385
Jul	53	$6,797
Aug	52	$7,278

Regional Sales & Revenue:

Asia:

Europe:
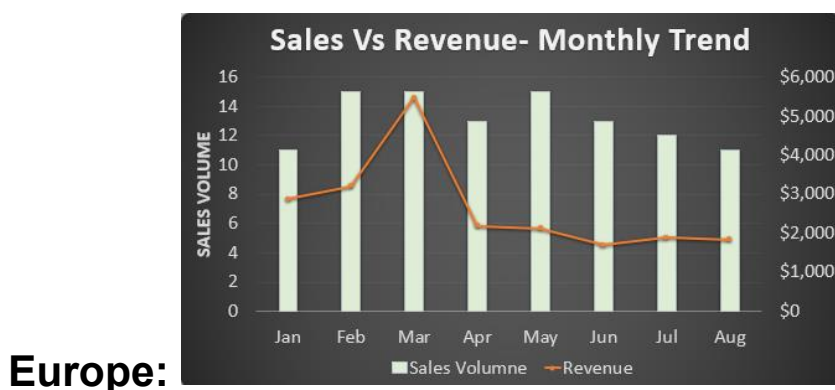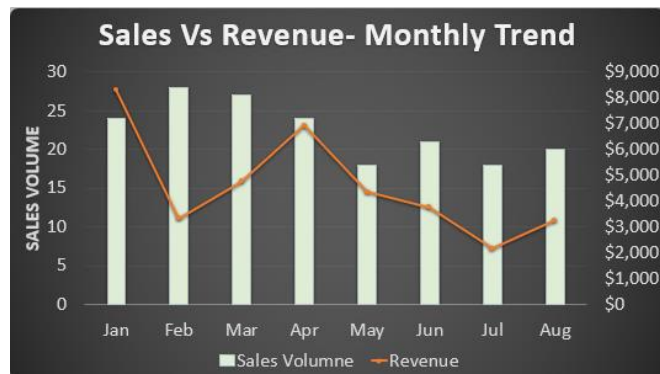
North America:

Similar trend is going on for each region

- The data shows a concerning downward trend in sales volume and revenue since April. Management has to investigate the reasons behind the decline.
    - Implement targeted promotions or discounts to boost sales, especially for clothing (top category) during the back-to-school season (July-August).

Top Performers: Clothing is the Top category and Credit Card method for Payment, Hanes ComfortSoft T-Shirt product are having high sales Volume

Product Category	Sales Volume
Clothing	145
Books	114
Sports	88
Electronics	66
Home Appliances	59
Beauty Products	46

Top 5 Products
Hanes ComfortSoft T-Shirt
The Catcher in the Rye by J.D. Salinger
Spalding NBA Street Basketball
Gap Essential Crewneck T-Shirt
Yeti Rambler Tumbler
Nike Air Force 1

Payment Method	Sales Volume
Credit Card	268
Debit Card	145
PayPal	105

Regional Performers & Payment Method Impact:

Payment Method	Sales Volume	Revenue
Credit Card	268	$51,170.86
Debit Card	145	$8,128.93
PayPal	105	$21,268.06

Region	Payment Method	Product Category	Sales Volume	Sum of Total Revenue
Asia	Credit Card	Sports	88	14326.52
	Debit Card	Clothing	145	8128.93
Europe	PayPal	Home Appliances	59	18646.16
		Beauty Products	46	2621.9
North America	Credit Card	Books	114	1861.93
		Electronics	66	34982.41

If we observe the data, Europe and North America transactions are only using one way of payment method also Debit cards have the highest sales volume, but PayPal have a higher total revenue.., so

- o Investigate why and consider offering incentives for using credit cards (e.g., reward points).
- o Explore partnerships with specific payment methods to encourage their usage
- o Also, Tailor marketing campaigns and product offerings to this region's preferences.
- o Increase stock levels based on preferences
- Develop localized marketing campaigns based on regional preferences. Highlight clothing and sports items for Asia and electronics and books for North America. Consider using regional social media platforms or website translations.

Interactive Dashboard to explore further:

Interactive dashboard is created in **EDA+Dashboard.xlsx**