Data Collection:

Data is taken from kaggle:

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.

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:

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

Sales Volume & Revenue: Sales Volume: 518 with Revenue $80,567.85

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

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 Preferences: Asia is on top

Time	Sales Volume
Asia	**233**
Clothing	145
Sports	88
Europe	**105**
Beauty Products	46
Home Appliances	59
North America	**180**
Books	114
Electronics	66

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

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

Data Visualization:

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

Recommendations:

- 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).
- Focus marketing efforts on the top-selling category (Clothing) and top product (Hanes ComfortSoft T-Shirt).
  - Consider offering bundles or promotions that include these high-performing items.
- Credit cards have the highest sales volume, but debit cards and PayPal have a higher total revenue.
  - Investigate why and consider offering incentives for using credit cards (e.g., reward points).
  - Explore partnerships with specific payment methods to encourage their usage
- Asia is the top region for sales.
  - Tailor marketing campaigns and product offerings to this region's preferences.

Optimizing Inventory for Sales growth:

- Focus on Top Performers: Increase stock levels for clothing (top category) and the Hanes ComfortSoft T-Shirt (top product).

Targeted Marketing for Increased Sales:

- 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.
- Product Category Targeting: Tailor marketing messages to specific product categories. Promote back-to-school clothing deals or highlight features of popular electronics.