E-Commerce Sales Analysis for Data-Driven Decision Making

Task 2 > Subtask 1

📙 Subtask 1: Analyze Monthly and Yearly Sales Trends

Understanding **monthly and yearly sales trends** is crucial for identifying seasonal patterns, peak sales periods, and long-term business growth. E-commerce companies like **Flipkart, Amazon India, and Meesho** use sales trend analysis to plan inventory, marketing campaigns, and pricing strategies.

By analyzing trends over time, you can:

- Identify peak sales months and low-performing periods.
- Understand the impact of seasonal events (Diwali sales, festive offers, etc.).
- Predict future sales patterns based on past trends.
- Provide insights into how revenue has grown or declined over time.

This analysis helps businesses make **data-driven decisions** on when to **increase inventory, launch discounts, or optimize marketing efforts**.

Subtask 1: Analyze Monthly and Yearly Sales Trends
🔧 How You Can Perform This Task?

1 Aggregate Sales Data by Month and Year
- Extract the **Order Date** column and convert it into a standard date format.
- Group the data by **month and year** to calculate total revenue for each period.
- Identify the **best-performing and worst-performing months** based on sales.

2 Visualize Monthly Sales Trends
- Create a **line chart** to visualize how revenue changes across different months.
- Identify **seasonal patterns**, such as spikes during festive periods like **Diwali, Christmas, or New Year sales**.
- Look for declining trends and periods of slow sales.

3 Analyze Yearly Sales Performance
- Summarize total revenue for each year to track **overall business growth**.
- Compare yearly sales to check for consistent growth or stagnation.
- Identify if there are **downtrends due to external factors** like economic downturns or policy changes.

4 Compare Peak and Low Sales Periods
- Identify **which months contribute the most revenue** and why.
- Check if certain months have **higher returns or cancellations** affecting sales.
- Suggest strategies for **boosting sales during low-performing months** (e.g., special discounts or promotions).

5 Document Key Findings
- Summarize key insights on how sales fluctuate monthly and yearly.
- Highlight significant trends, such as growth rate, best-performing seasons, and areas of improvement.
- Prepare visual graphs to support the findings.

Tasks

- [ ] Extracted and formatted the **Order Date** column.
- [ ] Grouped sales data **by month and year** to analyze trends.
- [ ] Created **visual representations** (line charts, bar charts) of sales trends.
- [ ] Identified peak and low-performing sales months.
- [ ] Documented key insights on seasonal trends and yearly growth.

Overall Progress   0%

- ⓘ Project Overview
- **1** Step 1: Understanding Business Requirements and Data Overview
- **2** Step 2: Sales Trend Analysis
  - [ ] Subtask 1: Analyze Monthly and Yearly Sales Trends
  - [ ] Subtask 2: Identify Best-Selling Products and Categories
  - [ ] Subtask 3: Geographic Sales Performance
  - [ ] Subtask 4: Submission
- **3** Step 3: Customer Segmentation Using RFM Analysis
- **4** Step 4: Sales Forecasting Using Time Series Analysis
- **5** Step 5: Business Insights & Recommendations

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