E-Commerce Database Analysis

Project Statement & Key Questions

Project Objectives

- Analyze E-Commerce sales and profit data to uncover business insights that drive growth and identify improvement areas.

Statement Questions

1. Calculate monthly sales and identify the highest and lowest sales months.

2. Analyze sales by product category, finding the lowest and highest sales categories.

3. Conduct sales analysis by sub-category for deeper insights.

4. Analyze monthly profit and determine the month with the highest profit.

5. Analyze profit by category and sub-category.

6. Analyze sales and profit by customer segment.

7. Analyze the sales to profit ratio.

Methodology Overview

- Data cleaning: Remove missing values and duplicates.

- Feature engineering: Convert order dates and create new time-based columns.

- Aggregation: Group and summarize data by time, category, and segment.

- Visualization: Use charts to reveal trends.

- Interpretation: Generate actionable insights for business decisions.

Key Insights Example

- November had the highest sales; February the lowest.

- Technology was the top-performing category; Office Supplies had lowest sales.

- Copiers brought the highest sub-category profit; Chairs led sub-category sales.

- Consumer segment was the most profitable.

- Sales-to-profit ratios highlighted optimization opportunities in some categories.