



SCHOOL OF COMPUTER SCIENCES

ACADEMIC SESSION: 2025/2026

CMT426 BUSINESS INTELLIGENCE AND ANALYTICS

INDIVIDUAL LAB REPORT 1

LECTURER'S NAME : TS. DR. RAMONA RAMLI

Student Name	Matric Number
Nor Shafiqah Atirah binti Mohd Zaidi	164211

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1. Dashboard and charts visualizations:

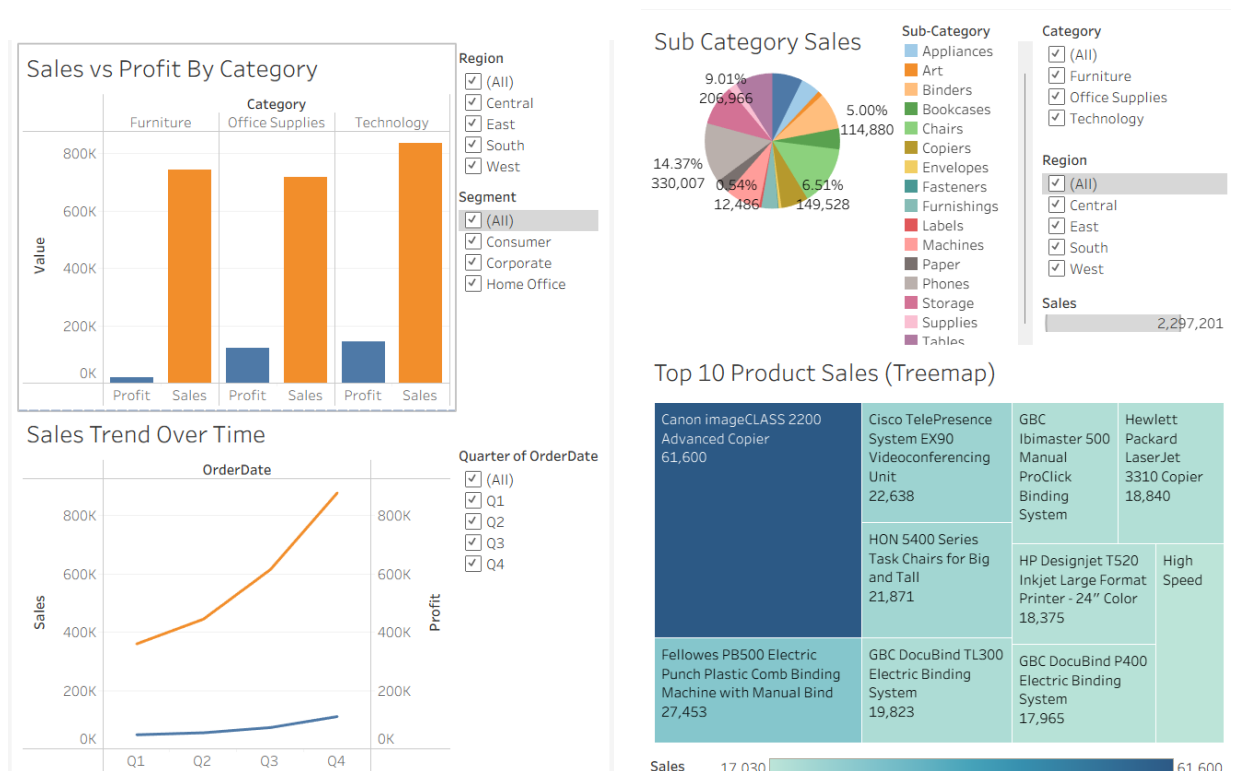


Figure 1.1 : Screenshot of dashboard visualization.

2. Description of business problem visualized:

Dashboard is built based on the Superstore.xls dataset, and its main purpose is to analyze key issues in the area of sales, profitability, and product demand for certain categories of products and time periods. Companies often have difficulties understanding which categories or sub-categories of their products bring in the most income and profits and which specific items help them achieve the desired results. Analysis of the relationship between Sales and Profit per Category enables to understand whether high sales bring profitability, thus helping to control expenses and prices.

The visualization of the trend in Sales Over Time allows to detect any patterns and even forecast the future development of the company based on sales numbers. In addition, the visualization of the Sub-Category Sales using a pie chart, and the Top 10 Products Sales in the form of a Treemap highlight the best-selling products. Overall, the visualizations transform raw data into meaningful insights that support data-driven decision making, improve profitability, and optimize product strategy.

3. Types of charts used:

a) Bar Chart

A bar chart was used to compare sales and profit among the categories. By showing side-by-side bars, the graph makes it possible to make comparisons between the measures in relation to each other within the same category. This makes it easier to see which categories have high sales or profits.

b) Dual-Line Chart

A dual-line graph was used to compare trends of sales and profit in the company during different quarters. Using two axes helps show how sales and profits behave, whether one measure grows steadily while the other fluctuates over time. This makes it possible to see how revenue relates to profitability during the quarters under consideration.

c) Pie Chart

The pie chart shows the relative proportion of the total sales that is made up of each sub-category. This type of chart makes it easy to get the information on the contribution of each of the sub-categories into the total sales.

d) Treemap

The treemap was used to show the top ten products sold by the company. This graph displays hierarchical data well, which allows comparison of different products. The size of the rectangles shows the sales figures, making it easy to find the products contributing the most into total sales.

4. Key findings and business recommendations:

Key Findings :

- The performance of sales across various categories is not the same, as there are some product categories that have a considerably higher proportion in terms of total sales than other categories.
- Greater sales do not necessarily mean greater profits, which means that cost management and pricing are not consistent across all categories.
- There are a few products that contribute substantially to total sales, indicating an extremely high concentration of revenue from top-selling products.

Business Recommendations :

- Focus more on good performing categories, and improve underperforming categories so that they can add value to the bottom line.
- Evaluate pricing and cost management to make sure sales performance translates into better profits.
- Concentrate on high-seller products by managing inventories and promotions effectively.