PRODUCT SALES ANALYSIS

Date	28-10-2023
Team ID	715
Project Name	Product Sales Analysis

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1. Introduction:

The project uses IBM Cognos to analyze sales data to identify top-selling products, peak sales periods, and customer preferences. The aim is to improve inventory management and marketing strategies, reduce overstocking, and reduce customer dissatisfaction. The structured approach includes data collection, visualization design, and actionable insights. This data is crucial for businesses in the retail and e-commerce industry to understand and optimize sales performance. By analyzing top-selling products, peak sales periods, and customer preferences, businesses can shape inventory management strategies, drive more effective marketing efforts make informed decisions, allocate resources efficiently, and stay ahead of the competition.

2. Problem Statement:

The objectives of this project are to identify top-selling products, pinpoint peak sales periods, analyze customer preferences, optimize inventory management, and enhance marketing strategies to improve business performance. The project involves analyzing sales data using IBM Cognos, identifying top-selling products, peak sales periods, and customer preferences, and designing relevant visualizations.

3. Design and Innovation Strategies:

The products are P1, P2, P3 and P4.

The excel file contains about 8 numerical parameters:

- Q1- Total unit sales of product 1
- Q2- Total unit sales of product 2
- Q3- Total unit sales of product 3
- Q4- Total unit sales of product 4
- S1- Total revenue from product 1
- S2- Total revenue from product 2
- S3- Total revenue from product 3
- S4- Total revenue from product 4

3.1. Data Visualization:

```
plot_bar_chart(data_reduced, ['Q-P1', 'Q-P2', 'Q-P3', 'Q-P4'],'Total Unit Sales', 'Year', 'sum')

plot_bar_chart(data_reduced, ['Q-P1', 'Q-P2', 'Q-P3', 'Q-P4'],'Mean Unit Sales', 'Year', 'mean')
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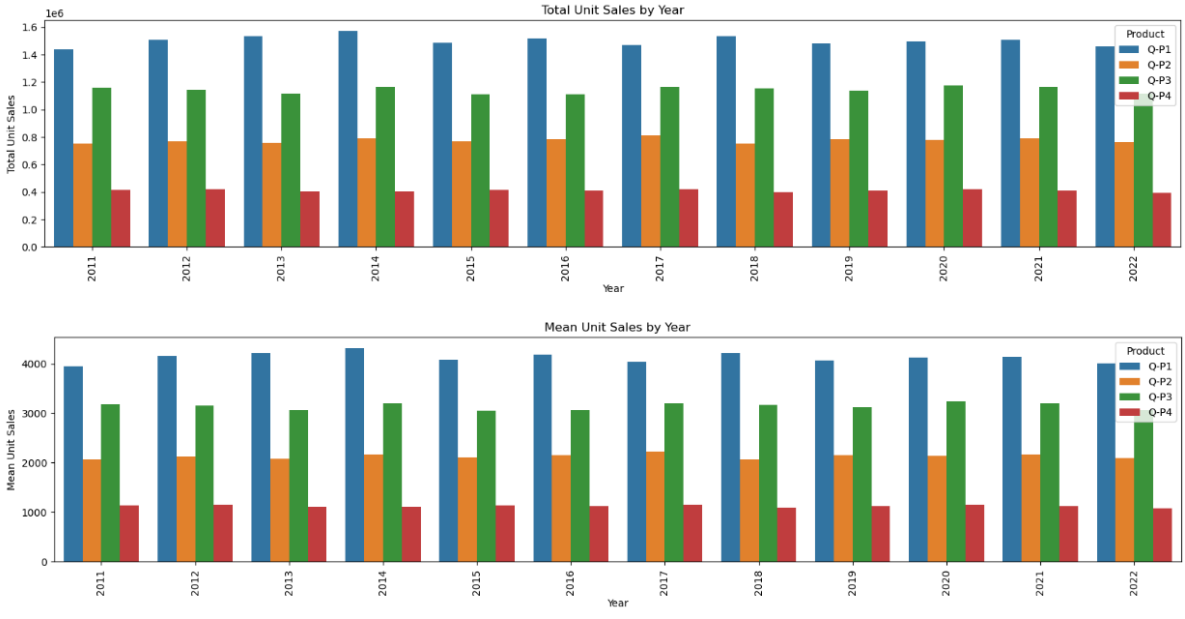

'Graph our TOTAL & MEAN revenue of sales for each product using a historgram."

```
plot_bar_chart(data_reduced, ['S-P1', 'S-P2', 'S-P3', 'S-P4'], 'Total Revenue', 'Year', 'sum')

plot_bar_chart(data_reduced, ['S-P1', 'S-P2', 'S-P3', 'S-P4'], 'Mean Revenue', 'Year', 'mean')
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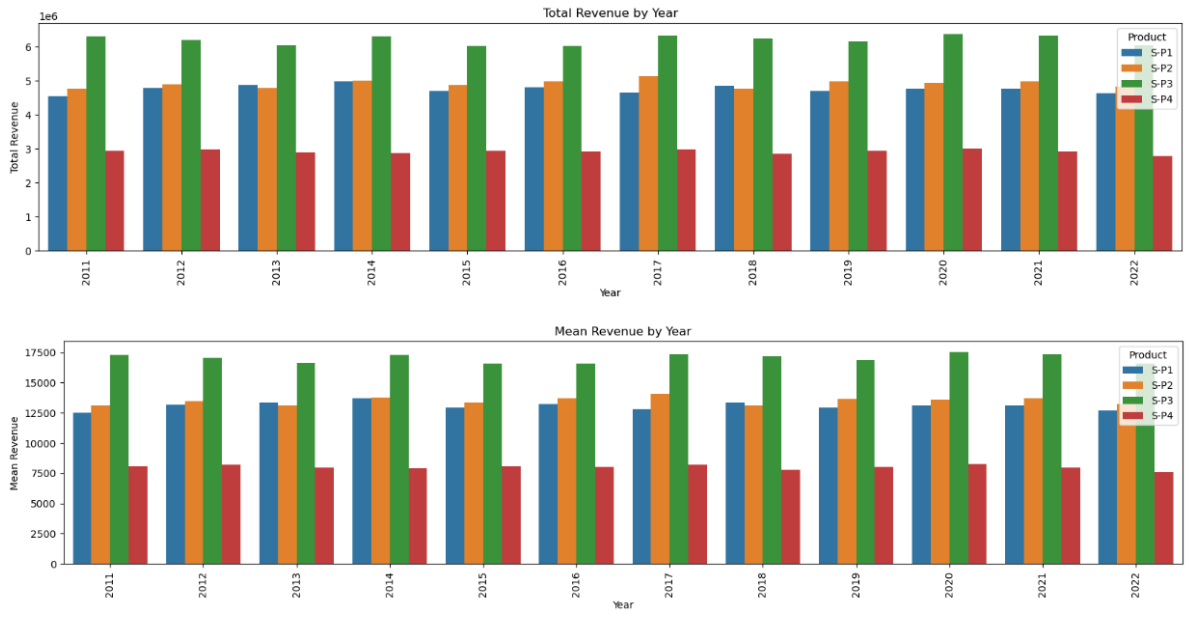
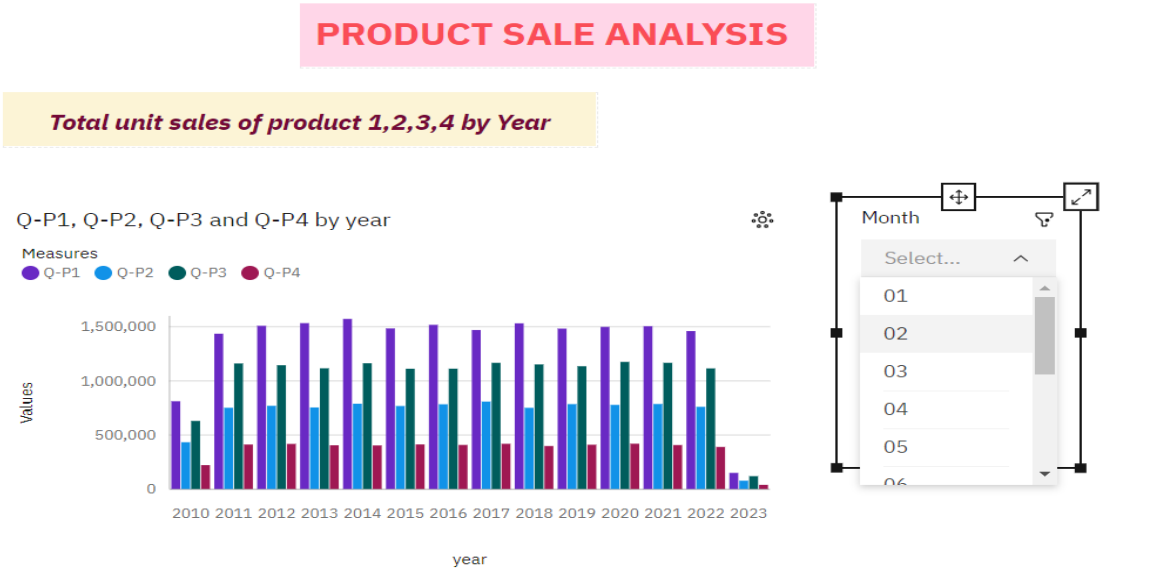
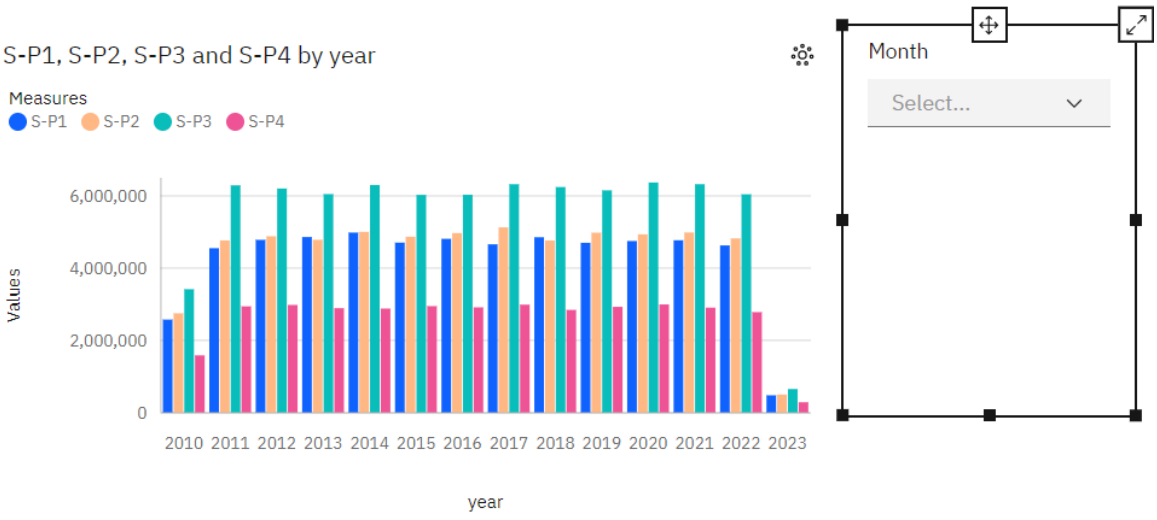
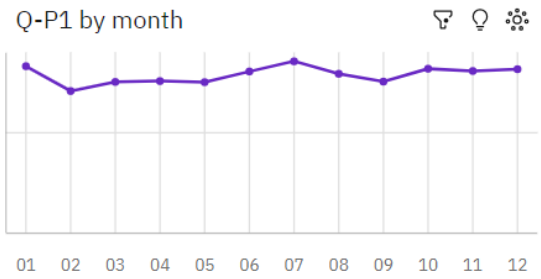


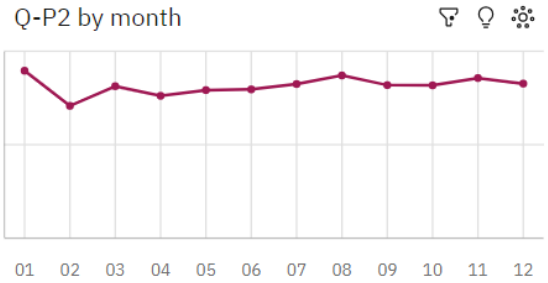
3.2. Data Visualization with IBM Cognos:

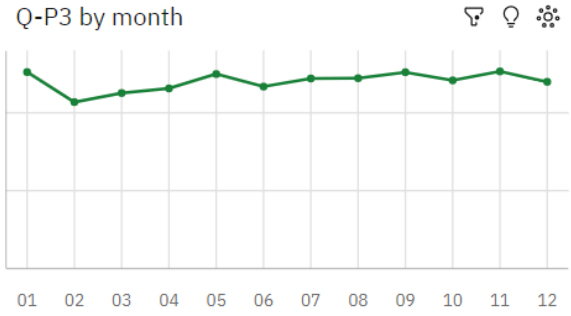


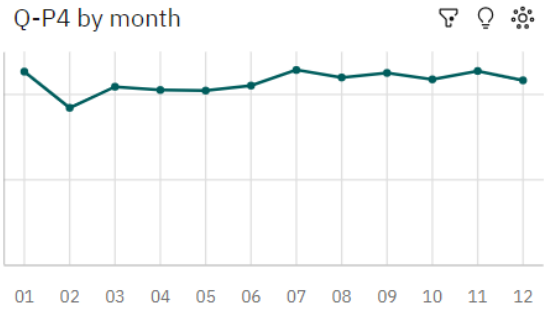


Monthly Unit Sales of Product 1,2,3 and 4

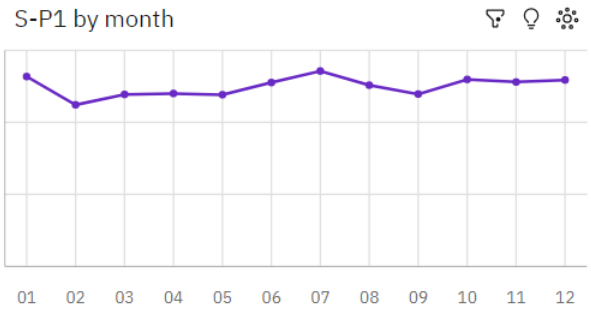


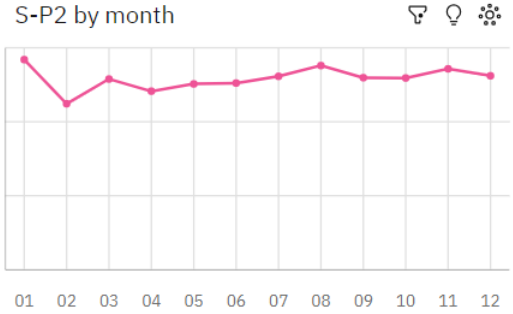


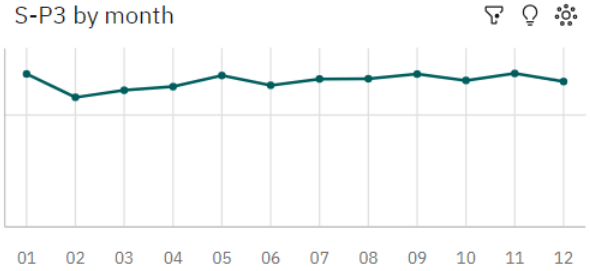


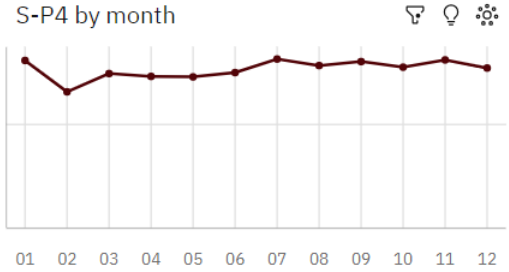


Monthly Revenue of Product 1,2,3 and 4

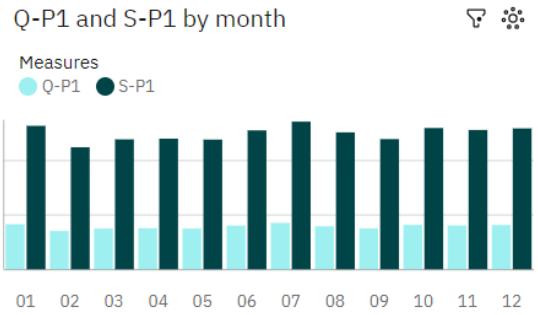


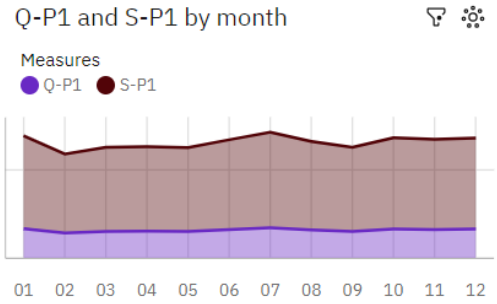


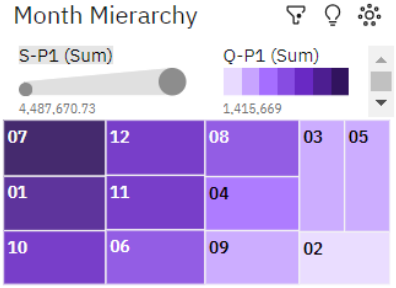


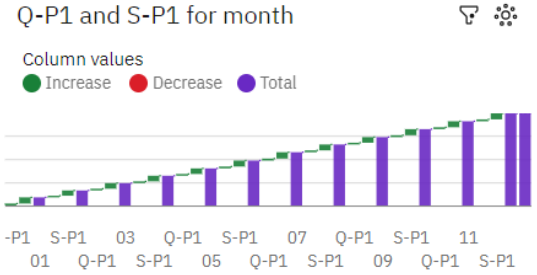


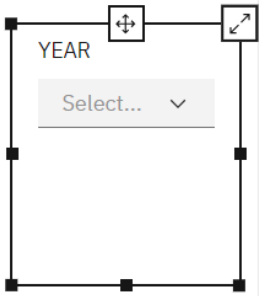
Monthly Revenue and Unit Sales of Product 1



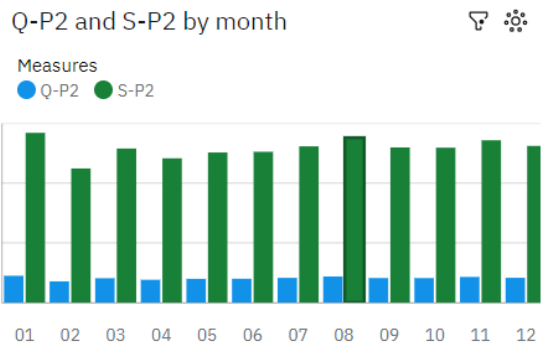


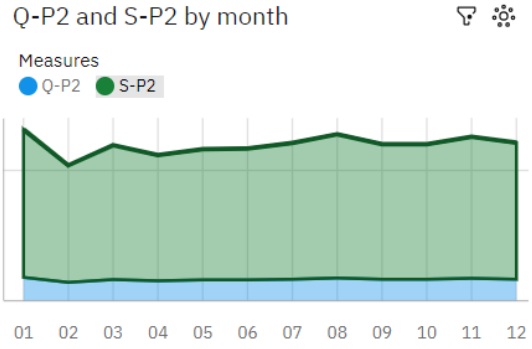


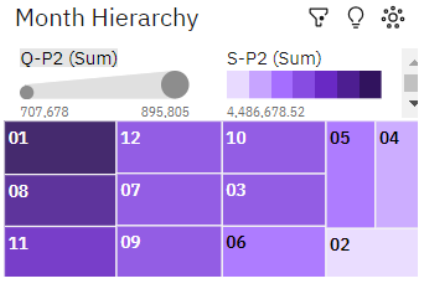


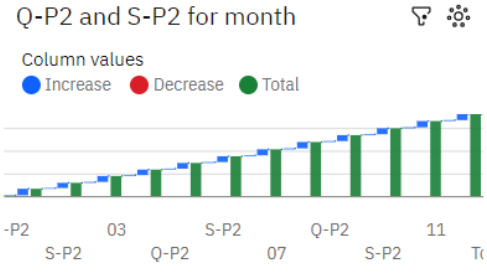


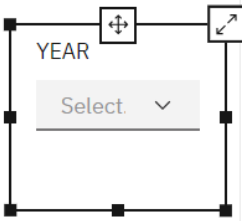
Monthly Revenue and Unit Sales of Product 2



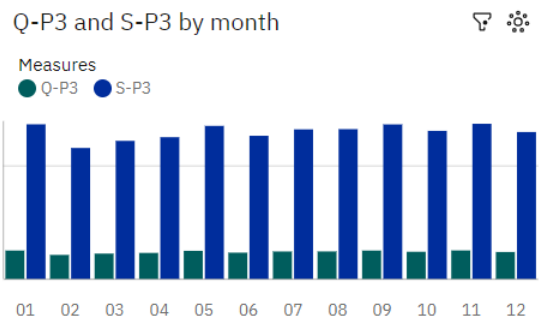


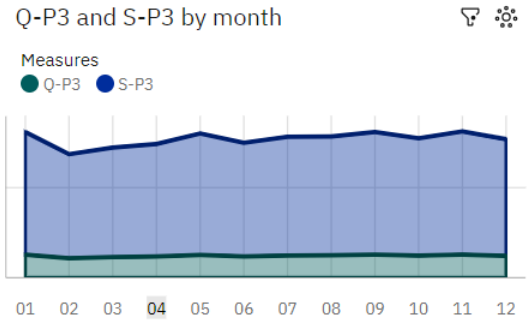


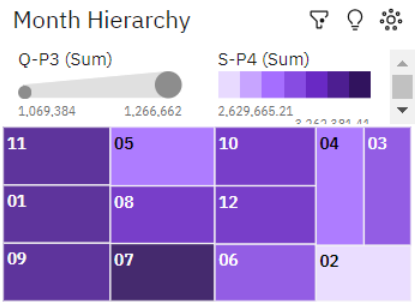


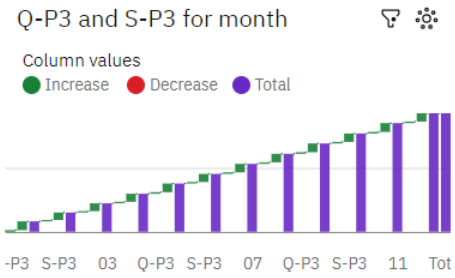


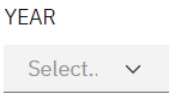
Monthly Revenue and Unit Sales of Product 3



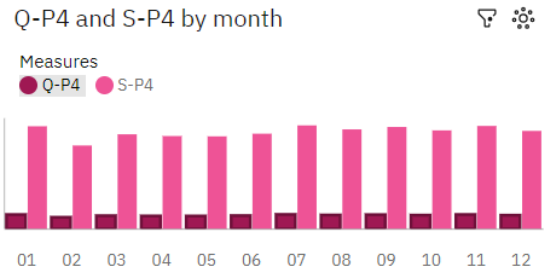


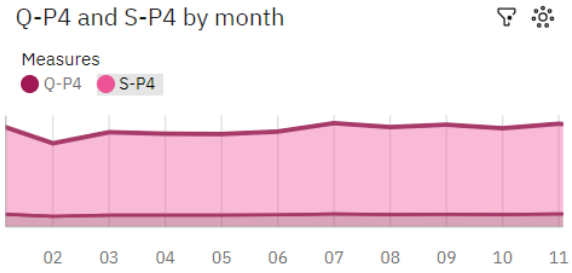


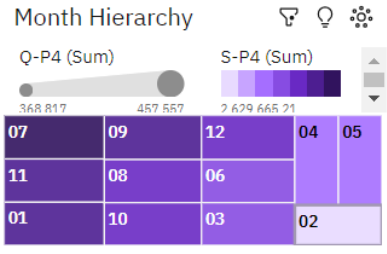


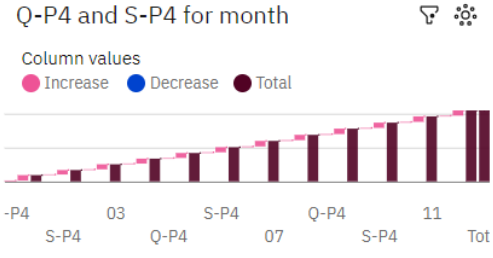


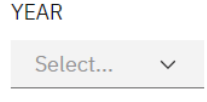
Monthly Revenue and Unit Sales of Product 4



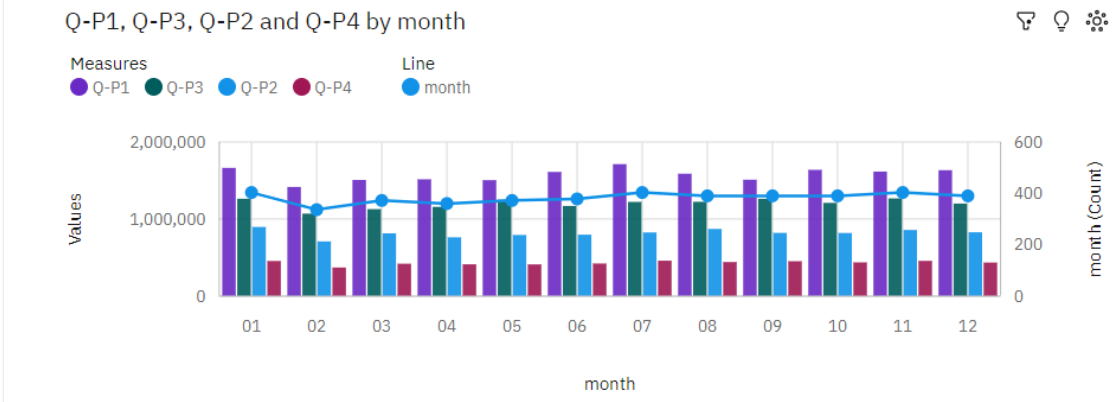


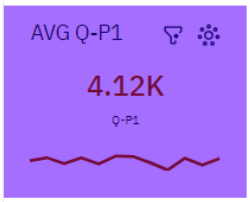


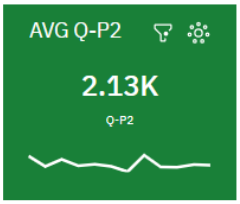


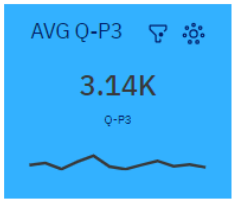


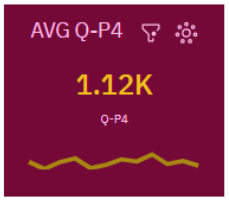
Unit Sales of Product 1,2,3 and 4 by Month

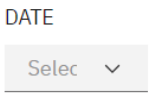




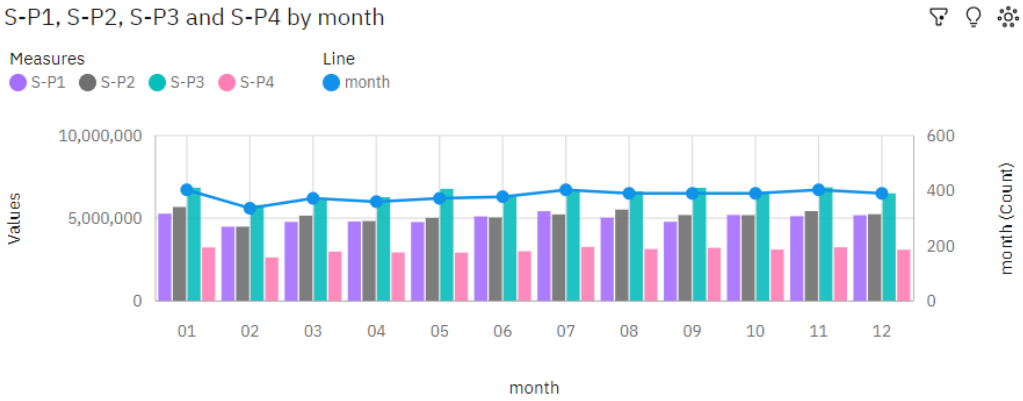


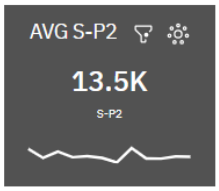


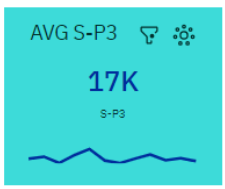


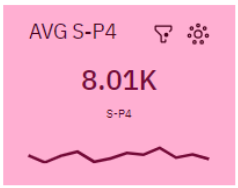


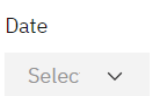
Revenue from product 1,2,3 and 4 by Month











Using IBM Cognos visualization, we can identify the top-selling products and customer preferences.

Identifying top-selling products is crucial for retail or e-commerce businesses, as it optimizes inventory management, marketing strategies, and overall operations. Monitoring these products ensures effective customer demand meeting, avoids stockouts, and allocates resources effectively. Data-driven decision-making leads to efficient inventory management, targeted marketing efforts, and increased profitability. Q-P1 is the highest-selling product.

Sales data analysis helps businesses understand customer preferences, enabling them to personalize their approach, provide products and experiences that align with their interests and needs. This leads to enhanced shopping experiences, increased satisfaction, and repeat business. Successful sales data analysis fosters long-term brand loyalty and revenue growth. S-P3 has the highest customer preference.

Conclusion:

Sales data analysis is crucial for retail and e-commerce businesses to optimize inventory management, marketing strategies, and operations. By monitoring top-selling products, businesses can meet customer demand, avoid stockouts, and allocate resources effectively. This data-driven approach leads to efficient inventory management, targeted marketing, increased profitability, and customer loyalty. Successful sales data analysis fosters meaningful customer connections, resulting in long-term brand loyalty and revenue growth.