Data Analytics with Cognos

PRODUCT SALES ANALYSIS

PHASE 4

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AGENDA

- Data Overview
- Top-selling Products
- Sales Trends
- Customer Preferences
- Insights from Visualization
- Dashboard

DATA OVERVIEW

- Before diving into visualizations, it's important to understand the structure of the dataset. Here are the available columns:
- InvoiceNo: The invoice number of each transaction.
- StockCode: The product code.
- Description: A description of the product.
- Quantity: The quantity of units sold in each transaction.
- InvoiceDate: The date of the transaction.
- UnitPrice: The price of each unit sold.
- CustomerID: The customer's unique ID.
- Country: The country where the transaction occurred.

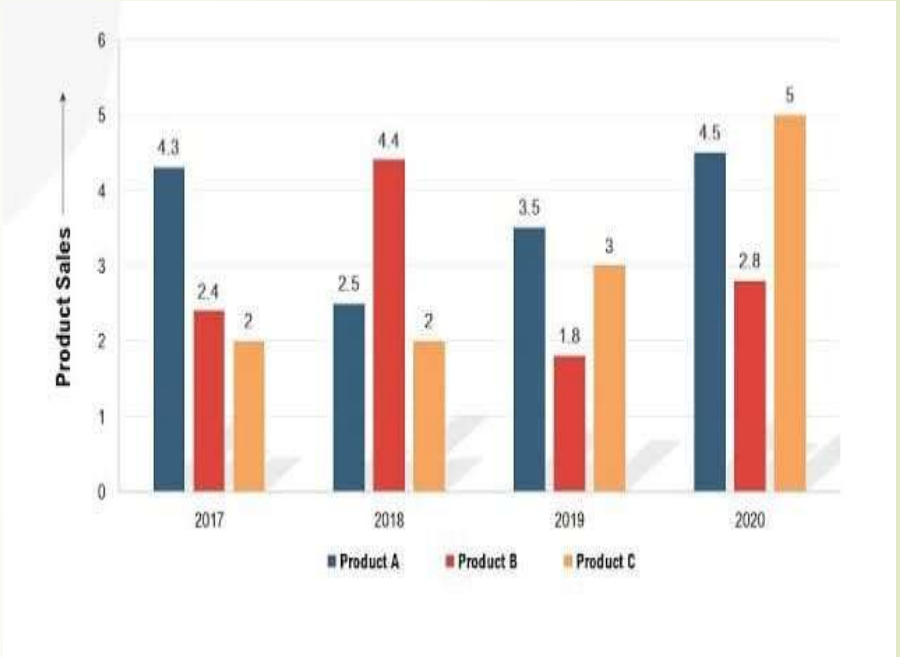
TOP-SELLING PRODUCTS

Sort the dataset by the total quantity sold for each product

Sorted_data= data.groupby('StockCode')['Quantity'].sum().reset_index().sort_values(by='Quantity', ascending=False)

Display the top 10 products by total quantity soldtop_selling_products = sorted_data.head(10)

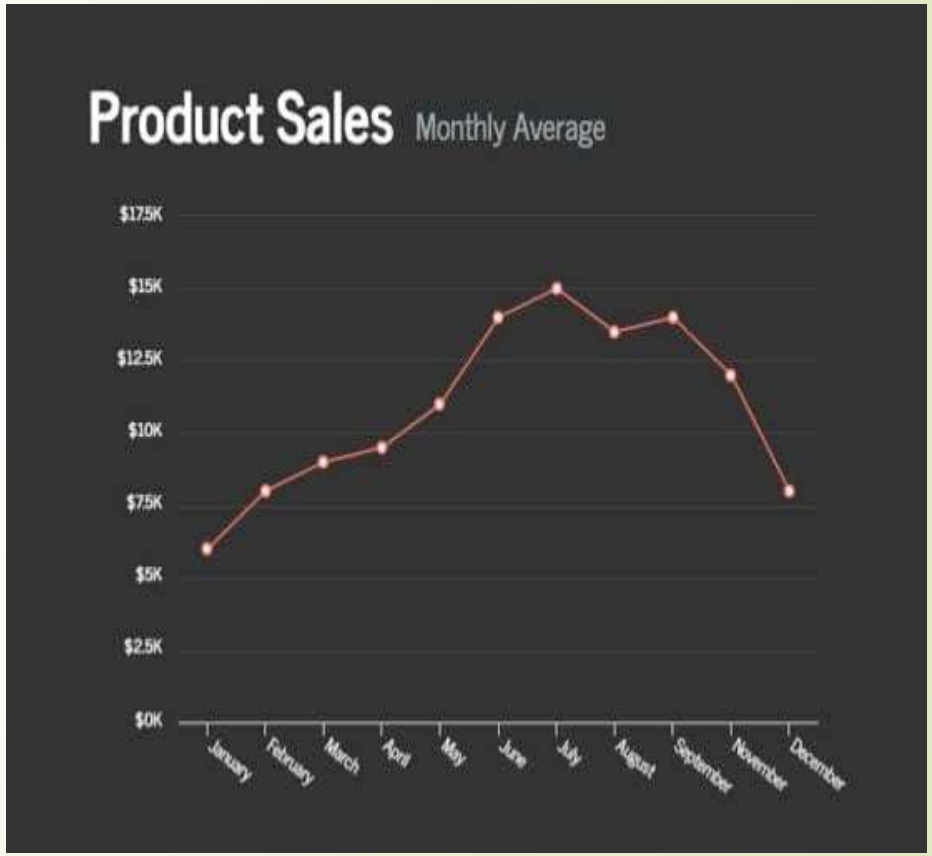
OUTPUT



SALES TRENDS

OUTPUT

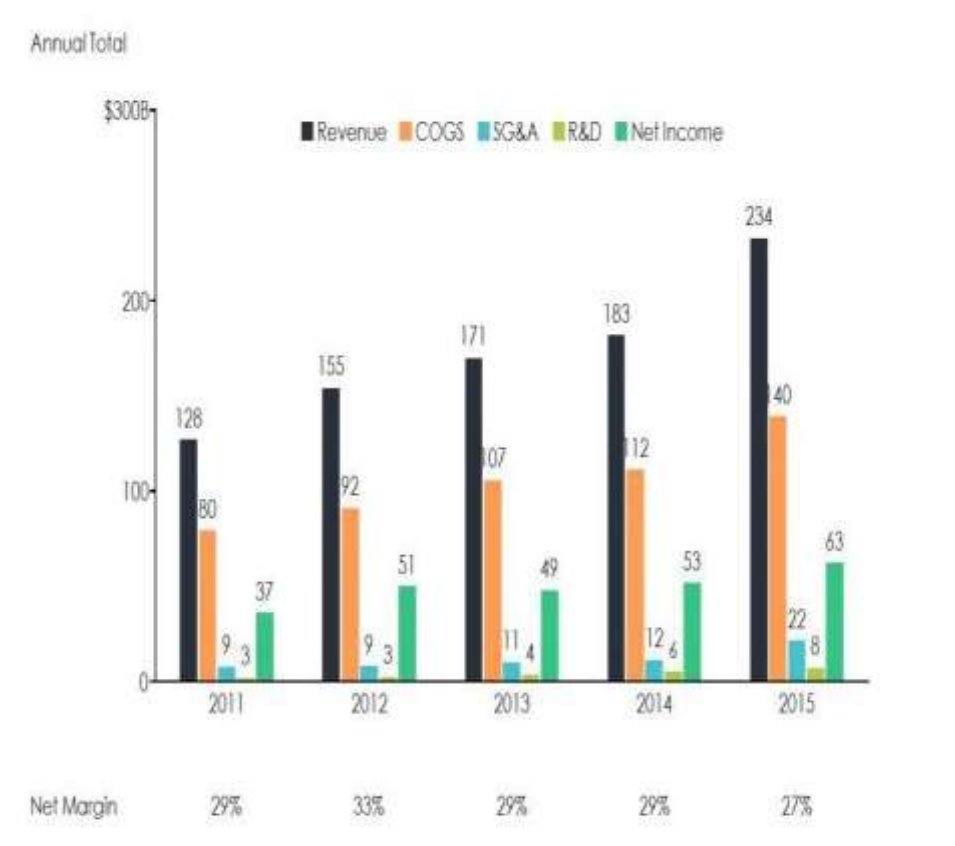
```
# Convert the 'InvoiceDate' column to a datetime

 objectdata['InvoiceDate'] = pd.to_datetime(data['InvoiceDate’])

# Create a new column called 'MonthYear' representing the month and year of each transactiondata

['MonthYear'] = data['InvoiceDate'].dt.strftime('%Y-%m’)

# Group the dataset by 'MonthYear' and calculate the total quantity sold for each month

sales_trends = data.groupby('MonthYear')['Quantity'].sum().reset_index()
```



CUSTOMER PREFERENCES

OUTPUT

```
# Group the dataset by 'CustomerID' and 'StockCode' and calculate the total quantity sold for each customer and

productcustomer_preferences = data.groupby(['CustomerID', 'StockCode'])['Quantity'].sum().reset_index()

# Display the top 5 products purchased by each customer

top_products_by_customer = customer_preferences.groupby('CustomerID')['Quantity'].nlargest(5).reset_index().sort_values(by='Quantity', ascending=False)
```



INSIGHTS FROM VISUALIZATION

From the bar chart of top-selling products, we can identify the most popular products in the dataset.From the line chart of sales trends, we can observe peaks in sales during specific months or years, indicating potential promotional periods or holiday shopping seasons.

From the bar chart of customer preferences, we can infer that some customers are more inclined to purchase certain products over others, suggesting potential strategies for targeted marketing.

DASHBOARD DESIGN

By combining the bar chart, line chart, and table visualizations into an interactive dashboard, we can present a comprehensive analysis of the dataset, making it easy for stakeholders to understand and utilize the insights derived from the visualizations.

THANK YOU