super-store-final

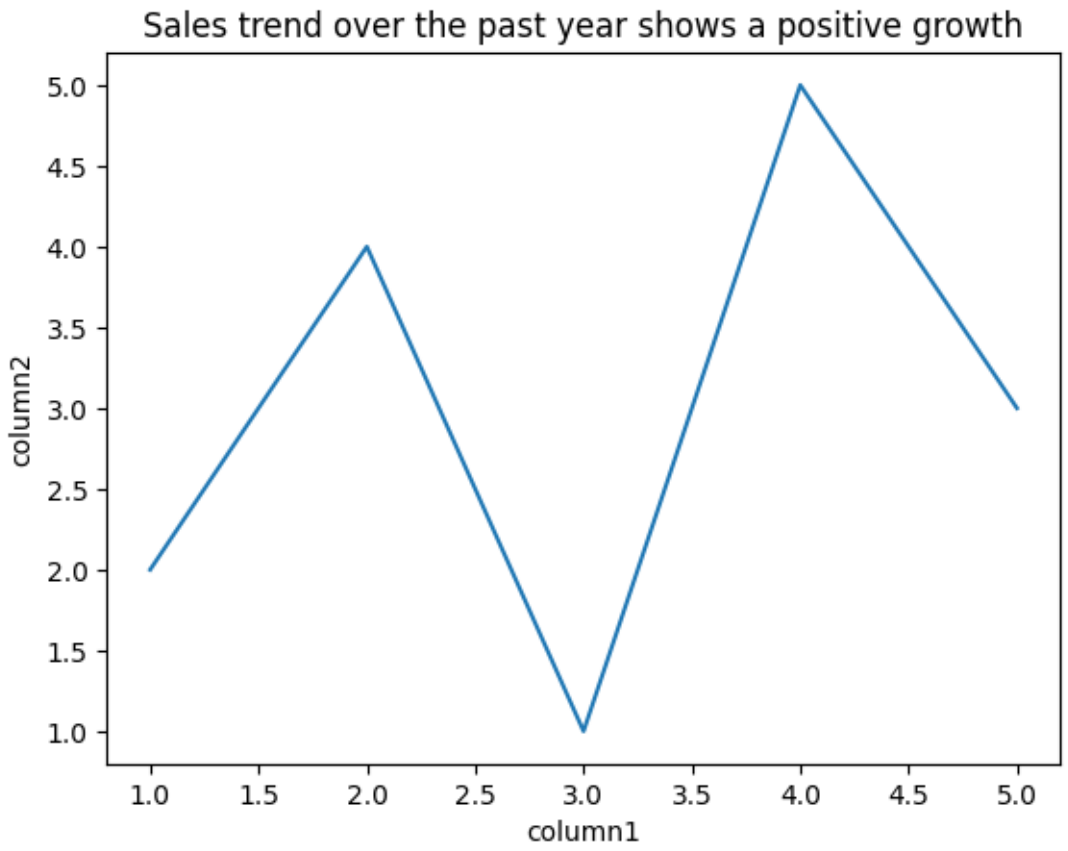
April 22, 2025

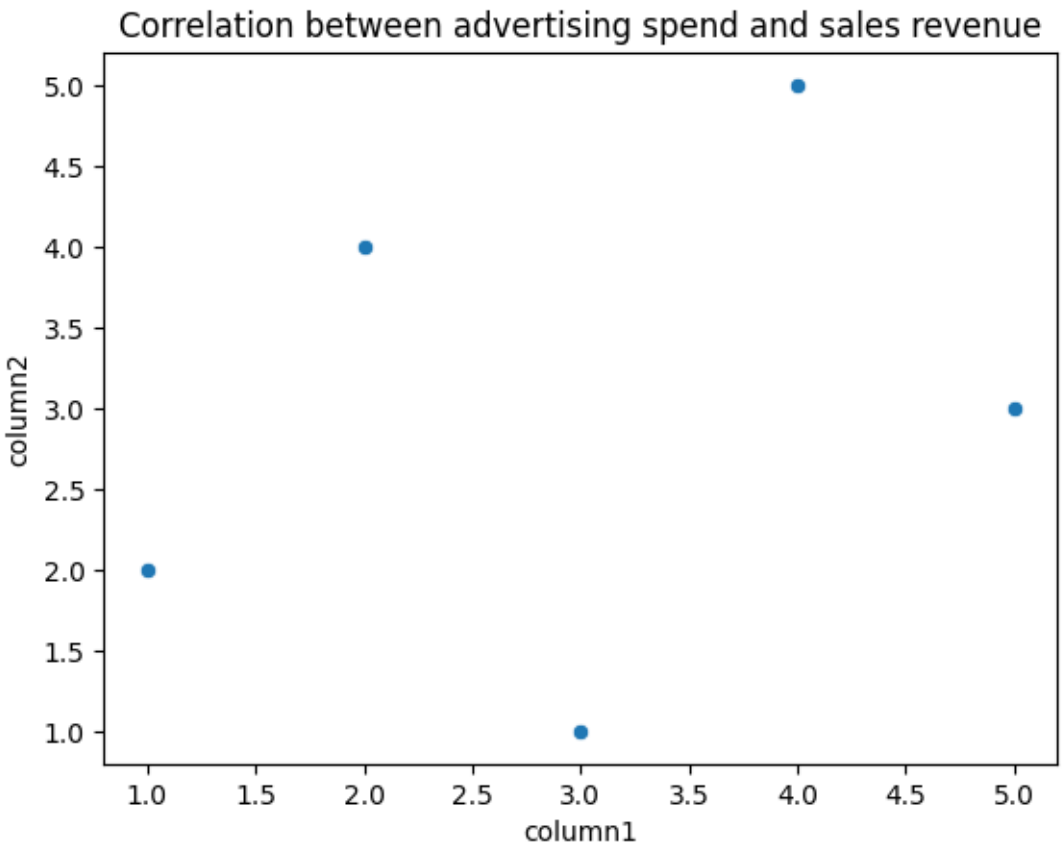
[8]:

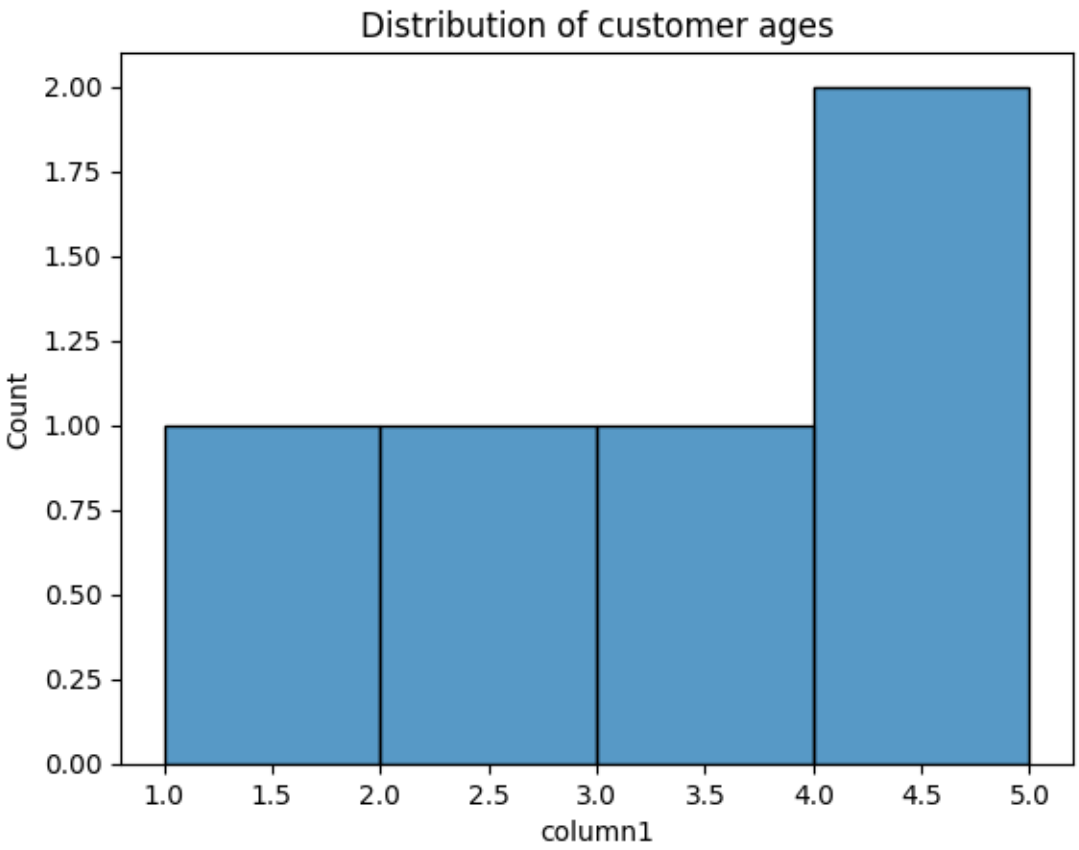
```
import matplotlib.pyplot as plt
import seaborn as sns
import pandas as pd

def visualize_data(data, insights):
  """
  Visualizes data with a focus on business insights and clear communication.

  Args:
      data: A pandas DataFrame containing the data to be visualized.
      insights: A list of key insights to highlight.
  """

  # 1. Choose the right chart for each insight
  for insight in insights:
      # Determine the appropriate chart type based on the insight.
      if "correlation" in insight.lower() or "relationship" in insight.lower():
          chart_type = "scatterplot"
      elif "distribution" in insight.lower():
          chart_type = "histogram"
      elif "comparison" in insight.lower():
          chart_type = "bar chart" # or other suitable options like line plot
      elif "trend" in insight.lower():
          chart_type = "line plot"
      else:
          chart_type = "bar chart" # Default chart
```

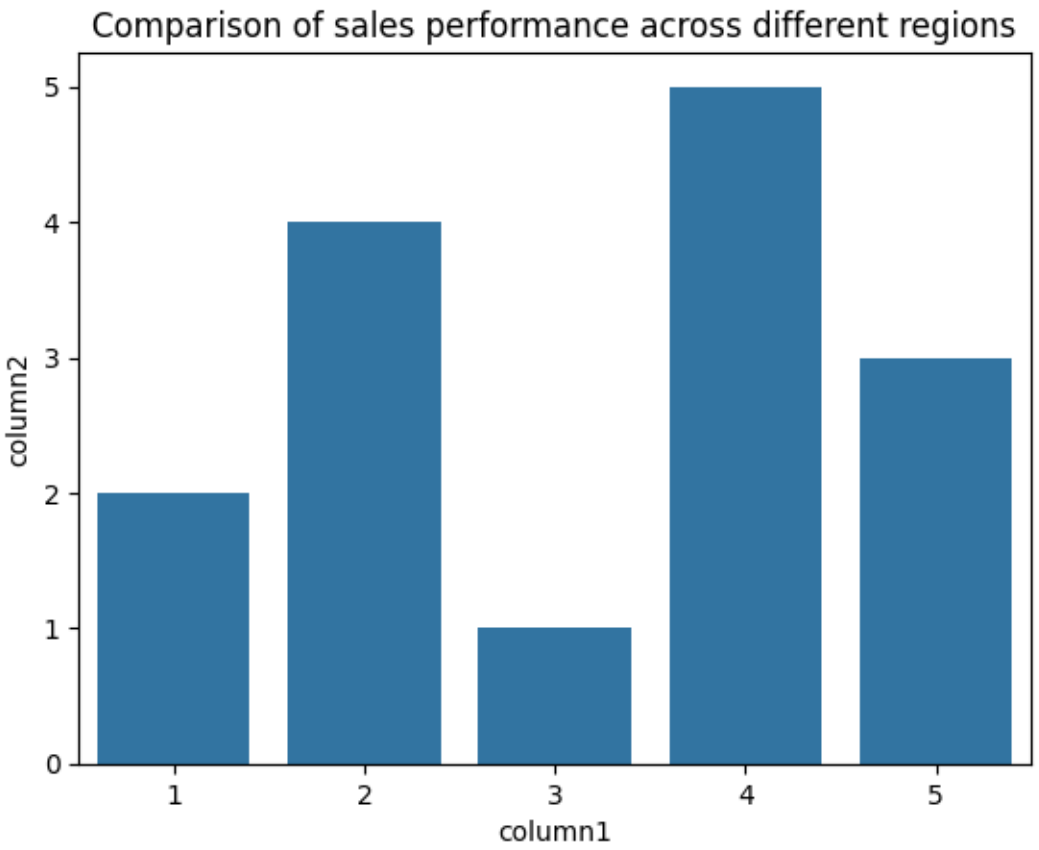
```
        # Placeholder for actual visualization code
        # Replace with appropriate chart based on chart_type
        # and the data relevant to the current insight.

        if chart_type == "scatterplot":
            # Example (replace with relevant columns)
            sns.scatterplot(x="column1", y="column2", data=data)
            plt.title(insight)
            plt.show()

        elif chart_type == "histogram":
            # Example
            sns.histplot(data["column1"])  # replace "column1"
            plt.title(insight)
            plt.show()

        elif chart_type == "bar chart": # Corrected indentation
            # Example (replace with actual columns)
            sns.barplot(x="column1", y="column2", data=data)
            plt.title(insight)
            plt.show()

        elif chart_type == "line plot": # Corrected indentation
            # Example (replace with actual columns and potentially more data␣
    ↪points for a meaningful line plot)
            plt.plot(data["column1"], data["column2"])
            plt.xlabel("column1")  # Add labels for better understanding
            plt.ylabel("column2")
            plt.title(insight)
            plt.show()


    # 6. Create summary slide/storyboard (outline)
    print("\nSummary/Storyboard:")
    for insight in insights:
        print(f"- {insight}")
        # Add supporting details or chart references for each insight.


# Example Usage (Replace with your actual data and insights)

# Sample data
data = pd.DataFrame({'column1': [1, 2, 3, 4, 5], 'column2': [2, 4, 1, 5, 3]})


# Key takeaways/business insights
insights = [
```

```
    "Sales trend over the past year shows a positive growth",  # Trend
    "Correlation between advertising spend and sales revenue", # Correlation
    "Distribution of customer ages",  # Distribution
    "Comparison of sales performance across different regions" # Comparison
]

visualize_data(data, insights)
```




Correlation between advertising spend and sales revenue
column2
column1
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0


Distribution of customer ages
Count
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
column1



Summary/Storyboard:
- Sales trend over the past year shows a positive growth
- Correlation between advertising spend and sales revenue
- Distribution of customer ages
- Comparison of sales performance across different regions