

A person in a dark suit is shown from the chest up, holding a glowing sphere of data visualizations. The sphere is filled with various charts and graphs, including a large pie chart at the top right showing 'Total 52.3 M' with segments for UK (blue), Japan (yellow), and Russia (red). Other charts include a bar chart labeled 'Sales Pipeline', a horizontal bar chart labeled 'Company Annual Sales', a pie chart labeled 'Portfolio Diversification', and a network graph at the bottom. The background is dark and moody.

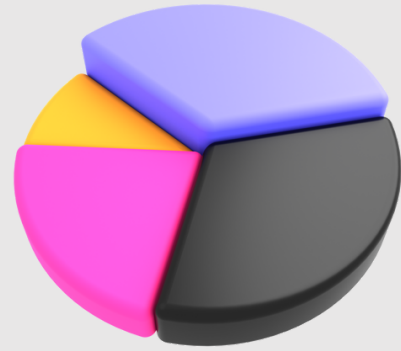
DATA VISUALIZATION

REZA SHOKRZAD

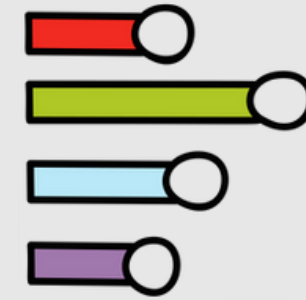


MAIN DIAGRAMS

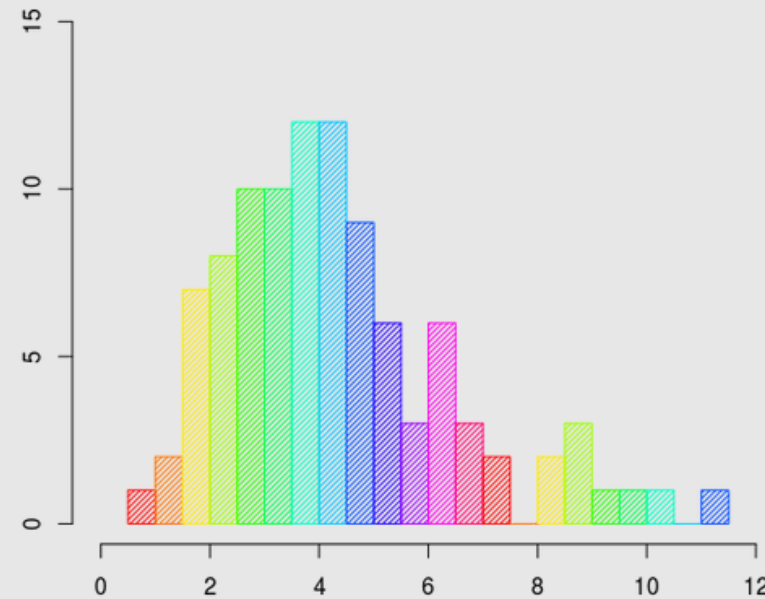
- Pie Chart



- Bar Chart



- Histogram



- Line Chart



- Scatter Plot



- Box Plot

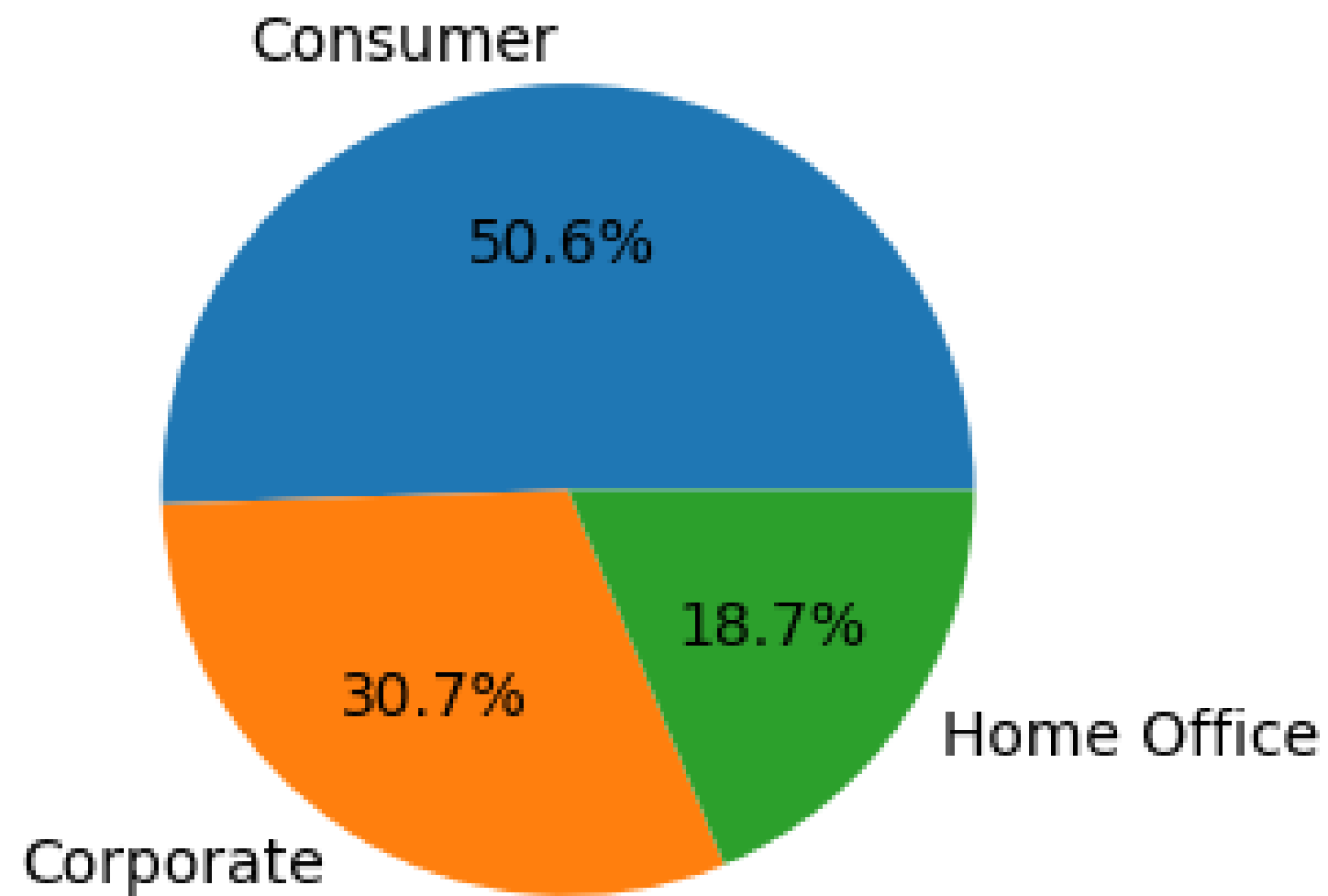


PIE CHART

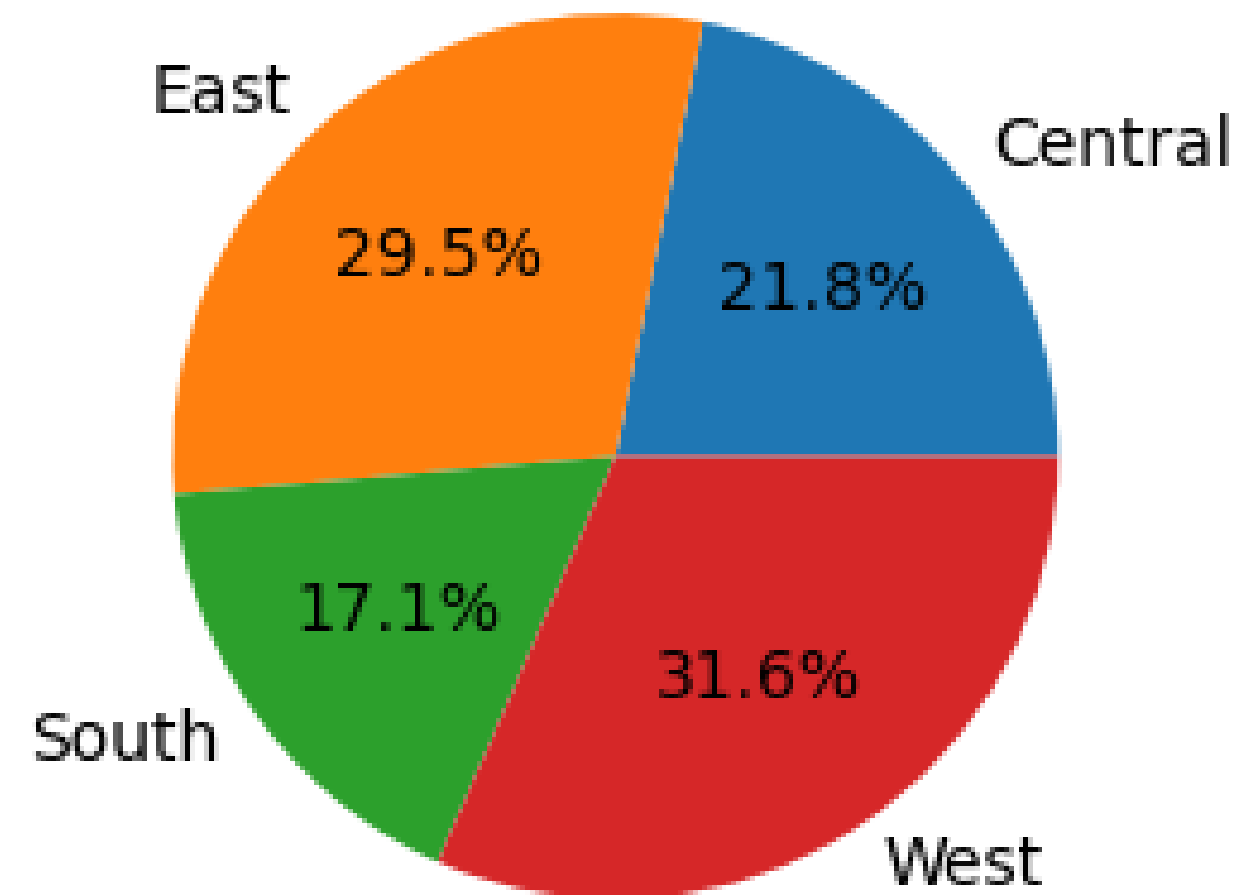
- **Function:** Ideal for showing proportions of the whole.
- **Variables:** Uses one categorical variable and one numerical variable.
- **Structure:** Each slice corresponds to a category; size of the slice represents its proportion relative to total.
- **Comparison:** Best for comparing parts of the whole (e.g., proportion of total sales per product).
- **Category Limit:** Most effective when the number of categories is small.

PIE CHART

Sales Distribution by Segment



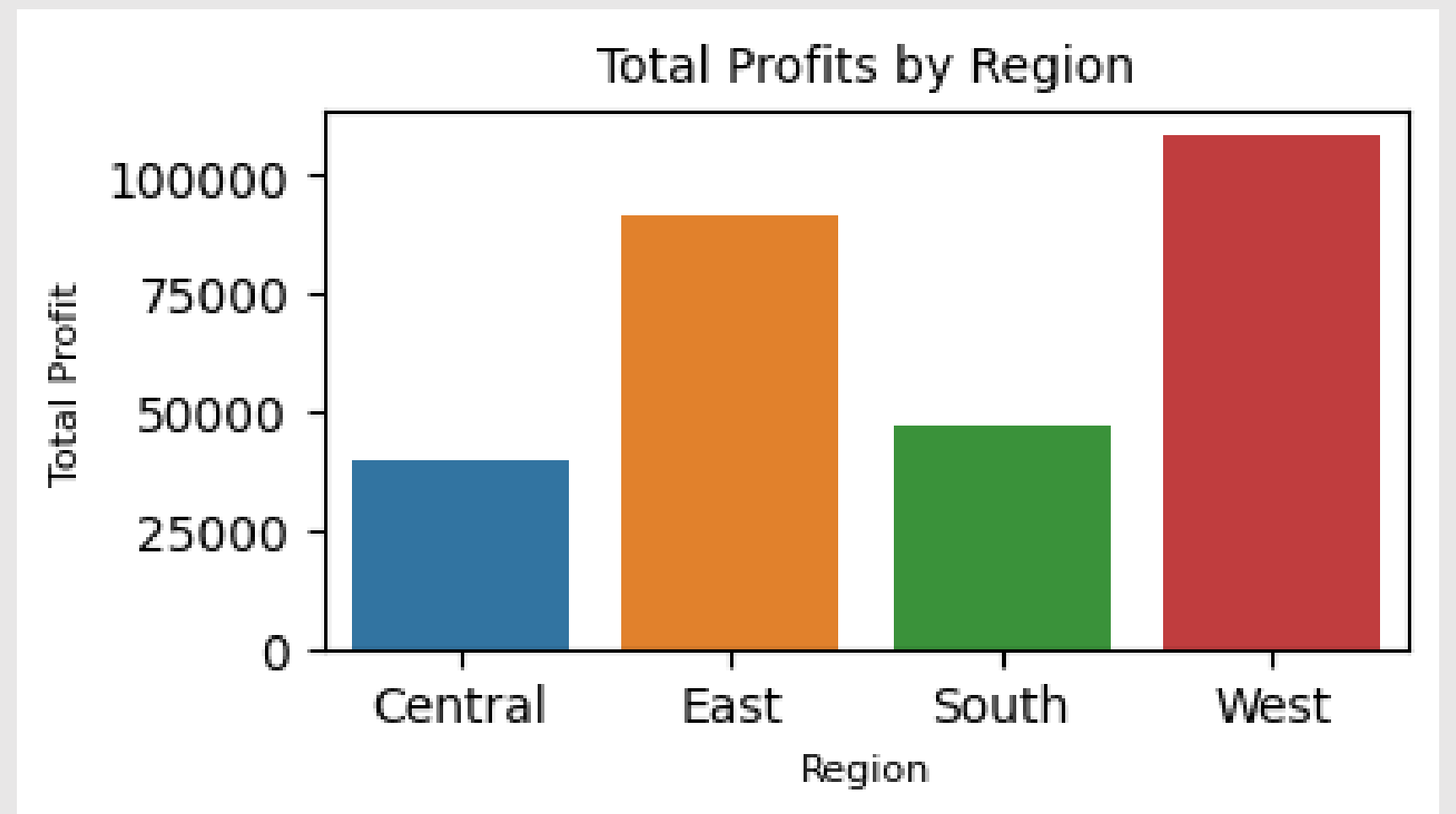
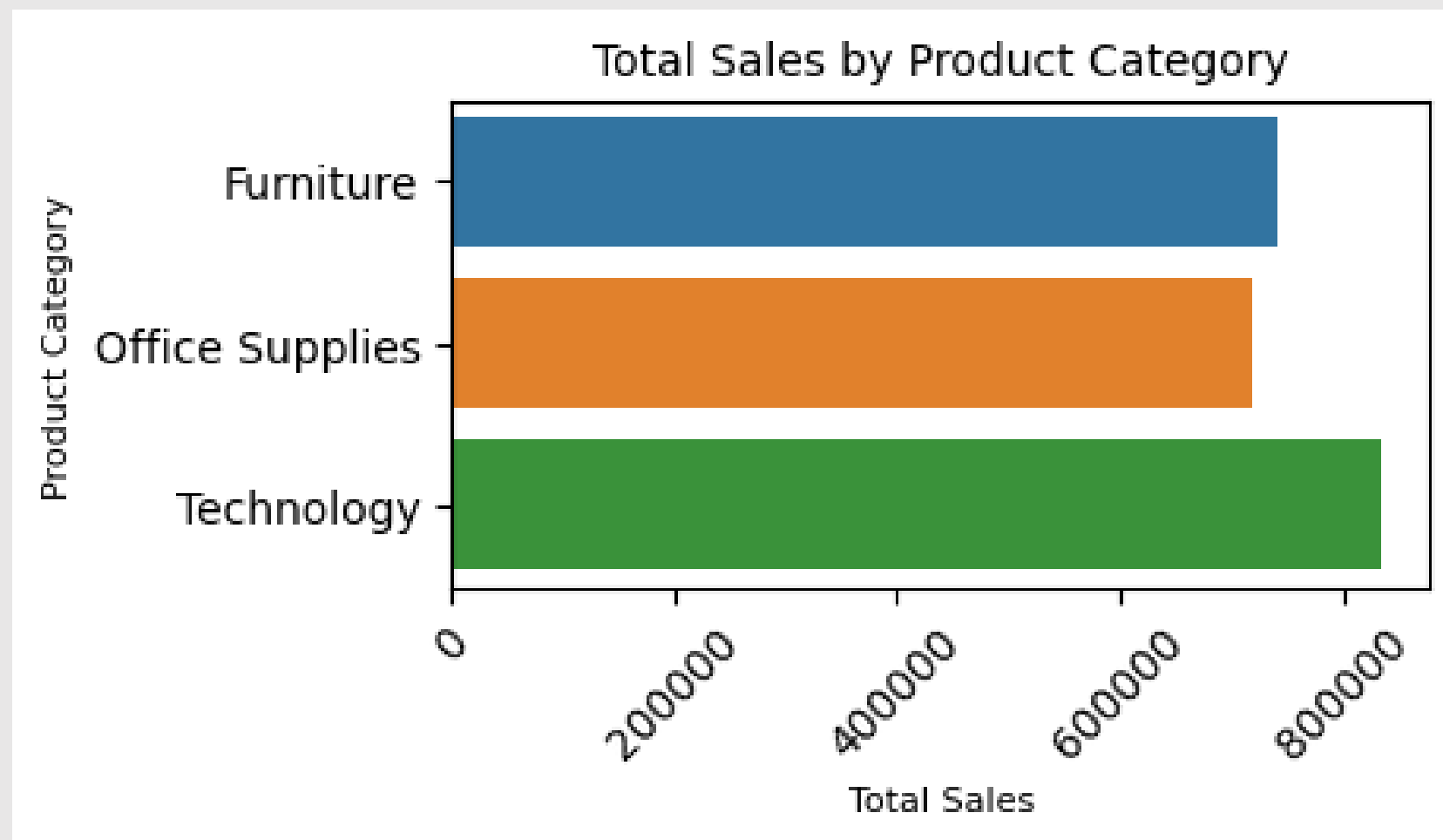
Sales Distribution by Region



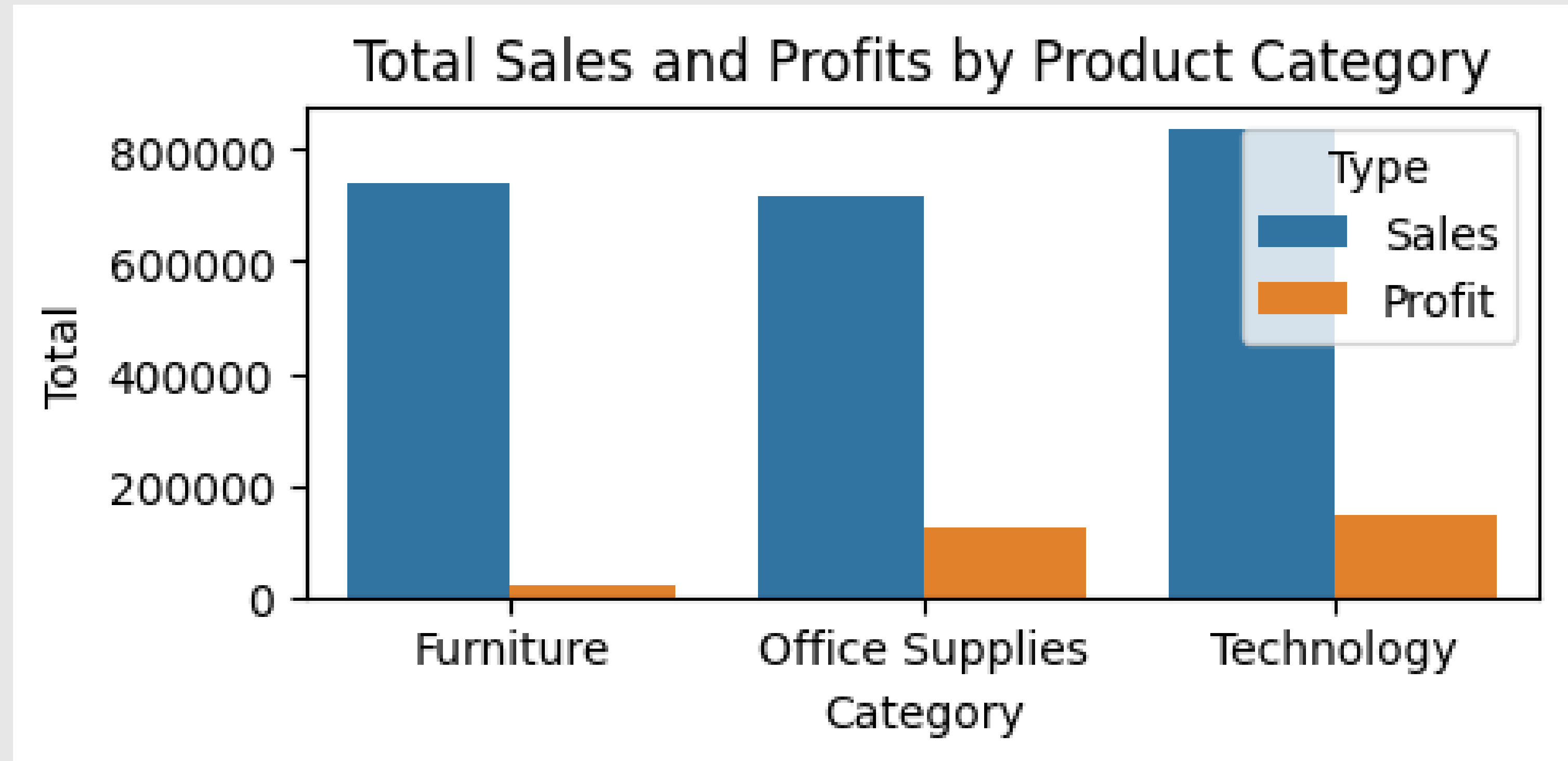
BAR CHART

- **Function:** Ideal for comparing categories of data.
- **Axes:** X-axis represents categories; Y-axis represents numerical values.
- **Variables:** Can use one or more categorical variables.
- **Comparison:** Good for comparing numerical variables across categories (e.g., sales per product).
- **Time-Series:** Useful for showing changes over time for different categories (if X-axis is time).

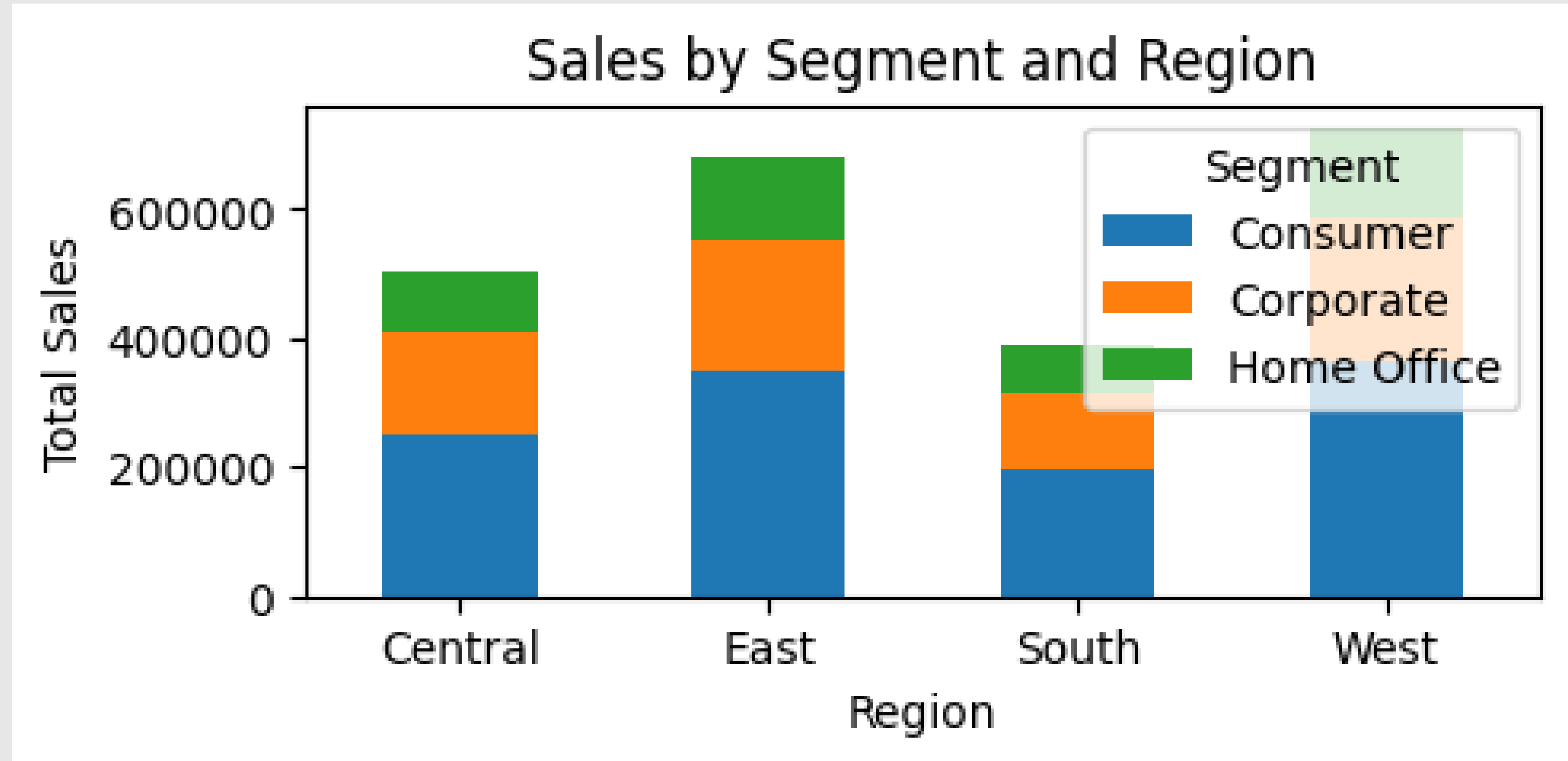
BAR CHART



CLUSTERED BAR



STACKED BAR

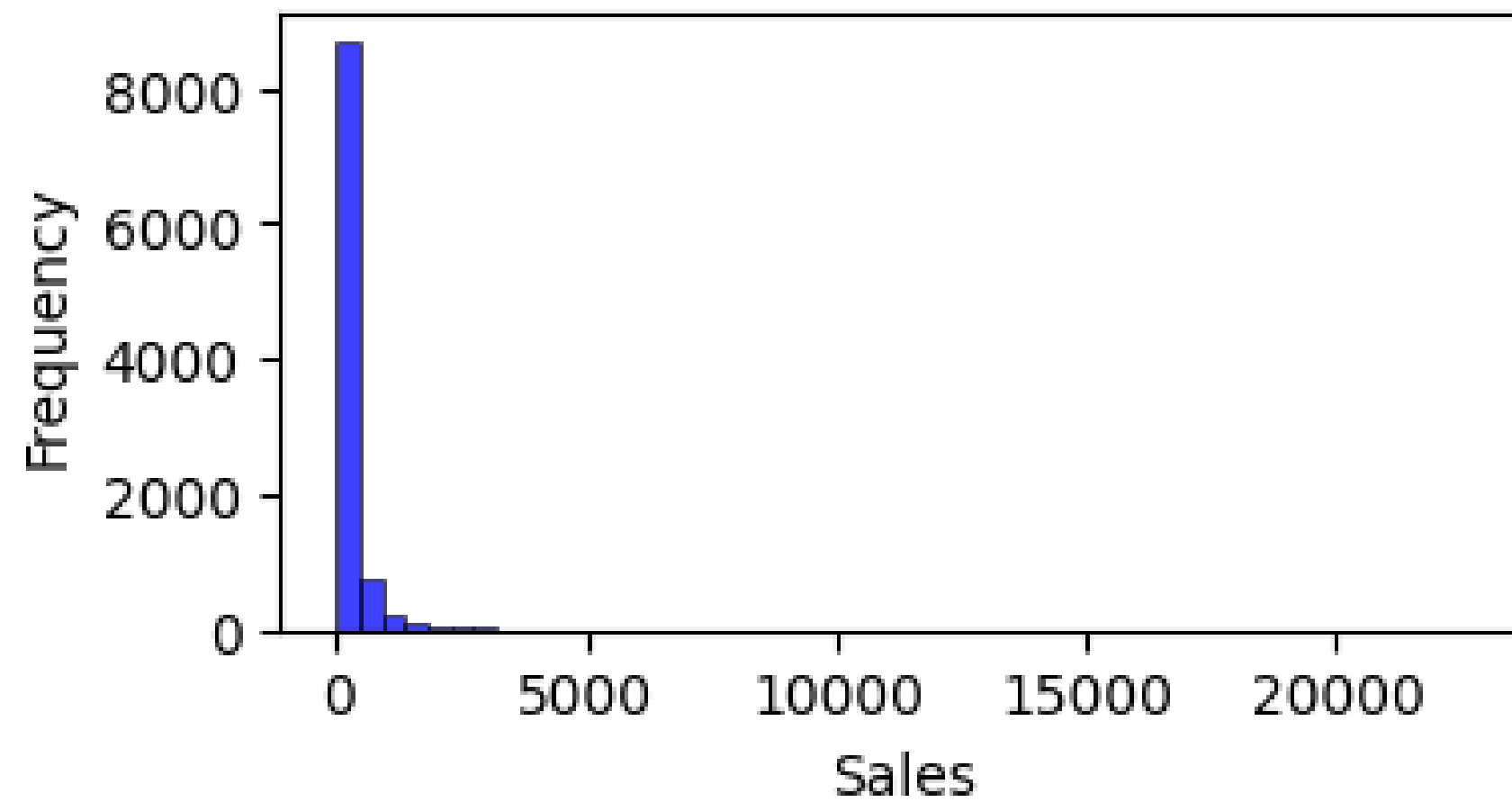


HISTOGRAM

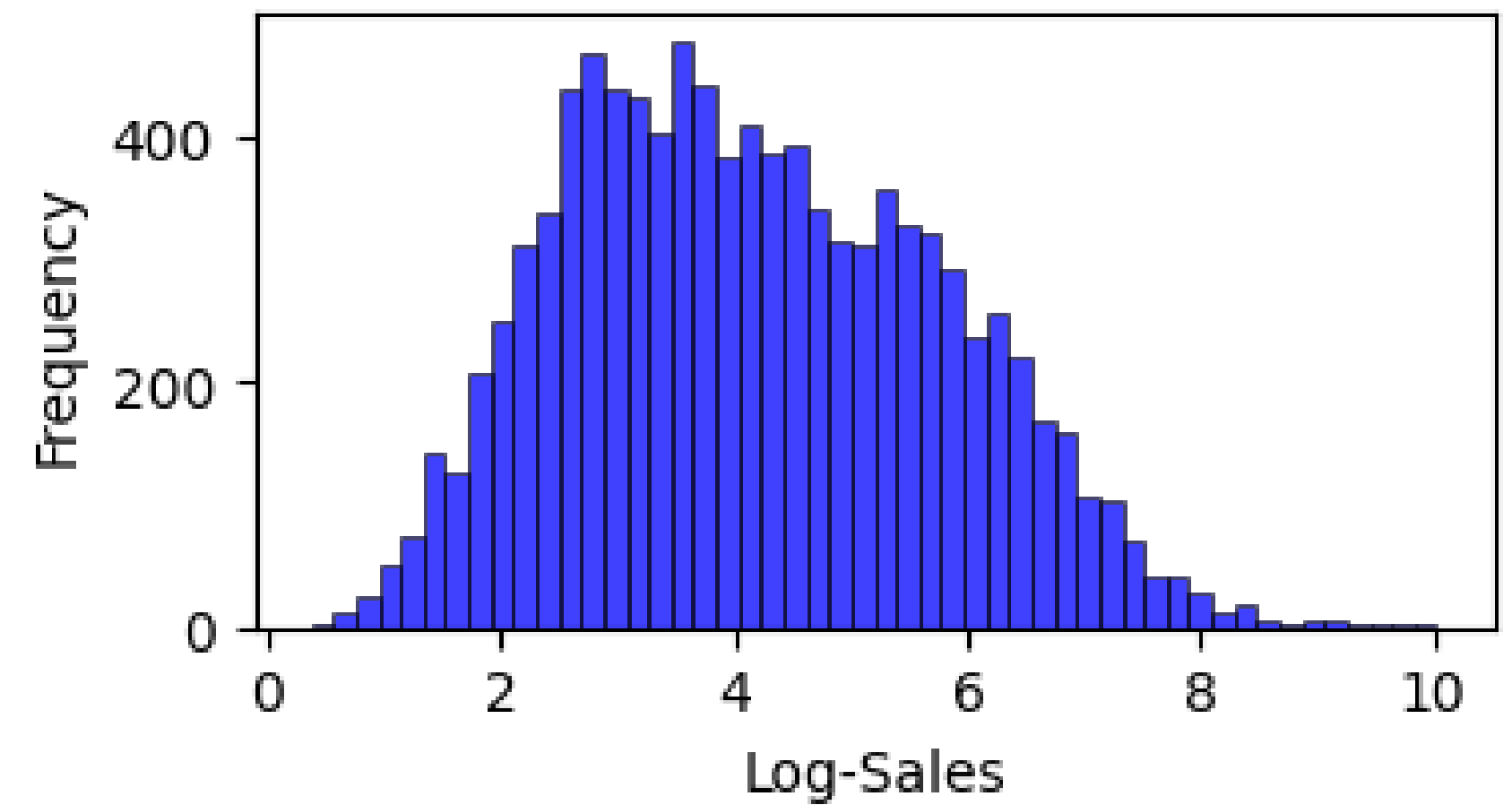
- **Use Case:** Ideal for displaying the distribution of a single numerical variable.
- **Number of Variables:** Histograms typically represent one numerical variable.
- **Type of Data:** Histograms are used with numerical data.
- **Comparison:** Histograms make it easy to understand the distribution of data, identify central tendencies, and spot any outliers or skewness.
- **Considerations:** The choice of the number of bins in a histogram can significantly affect the resulting visualization. Too few bins may oversimplify the data, while too many bins may overcomplicate the data.

HISTOGRAM

Sales Distribution



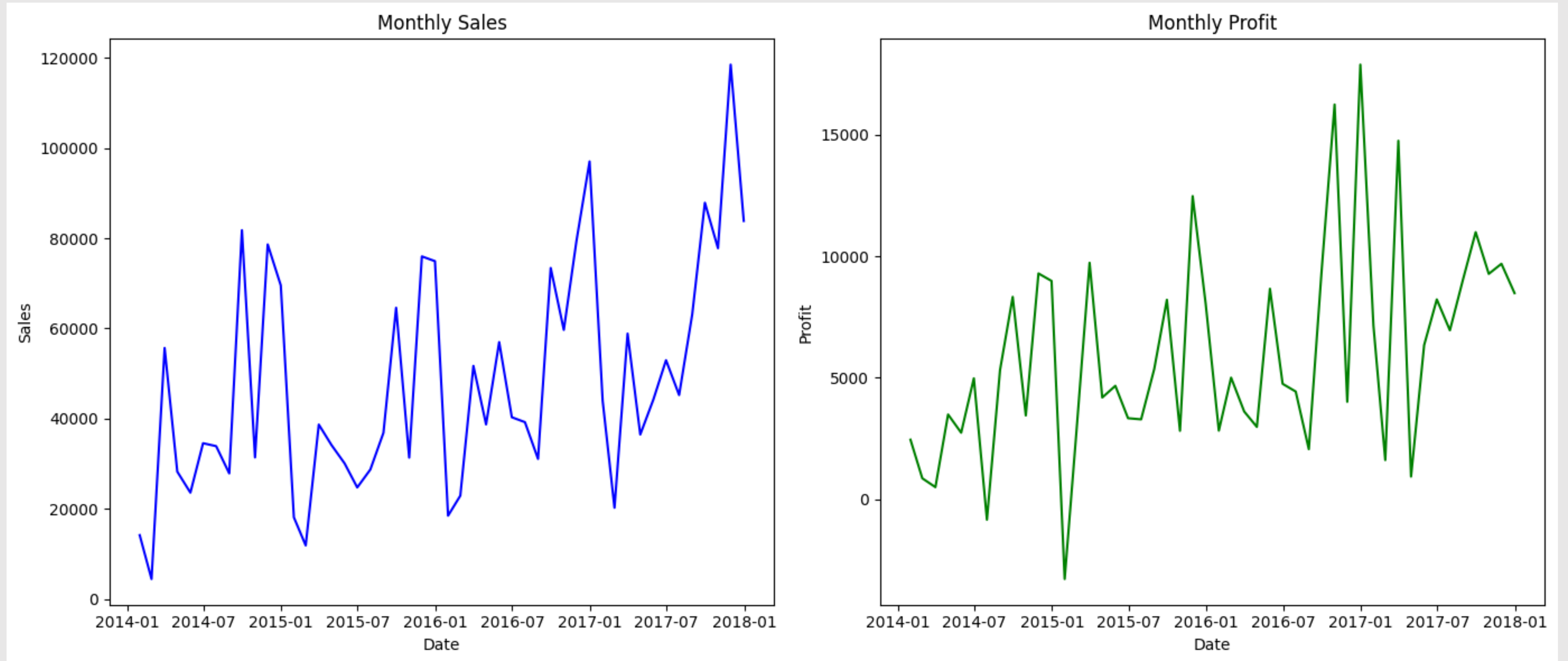
Log-Sales Distribution



LINE CHART

- **Use Case:** Line charts are best for showing trends over time or any other continuous ordered variable.
- **Number of Variables:** Line charts can represent multiple numerical variables.
- **Type of Data:** Line charts are often used with time series data but can be used with any continuously ordered data.
- **Comparison:** Line charts make it easy to compare changes over time. They are good for showing trends, patterns, and fluctuations.
- **Considerations:** Line charts can become cluttered if there are too many lines (i.e., variables).

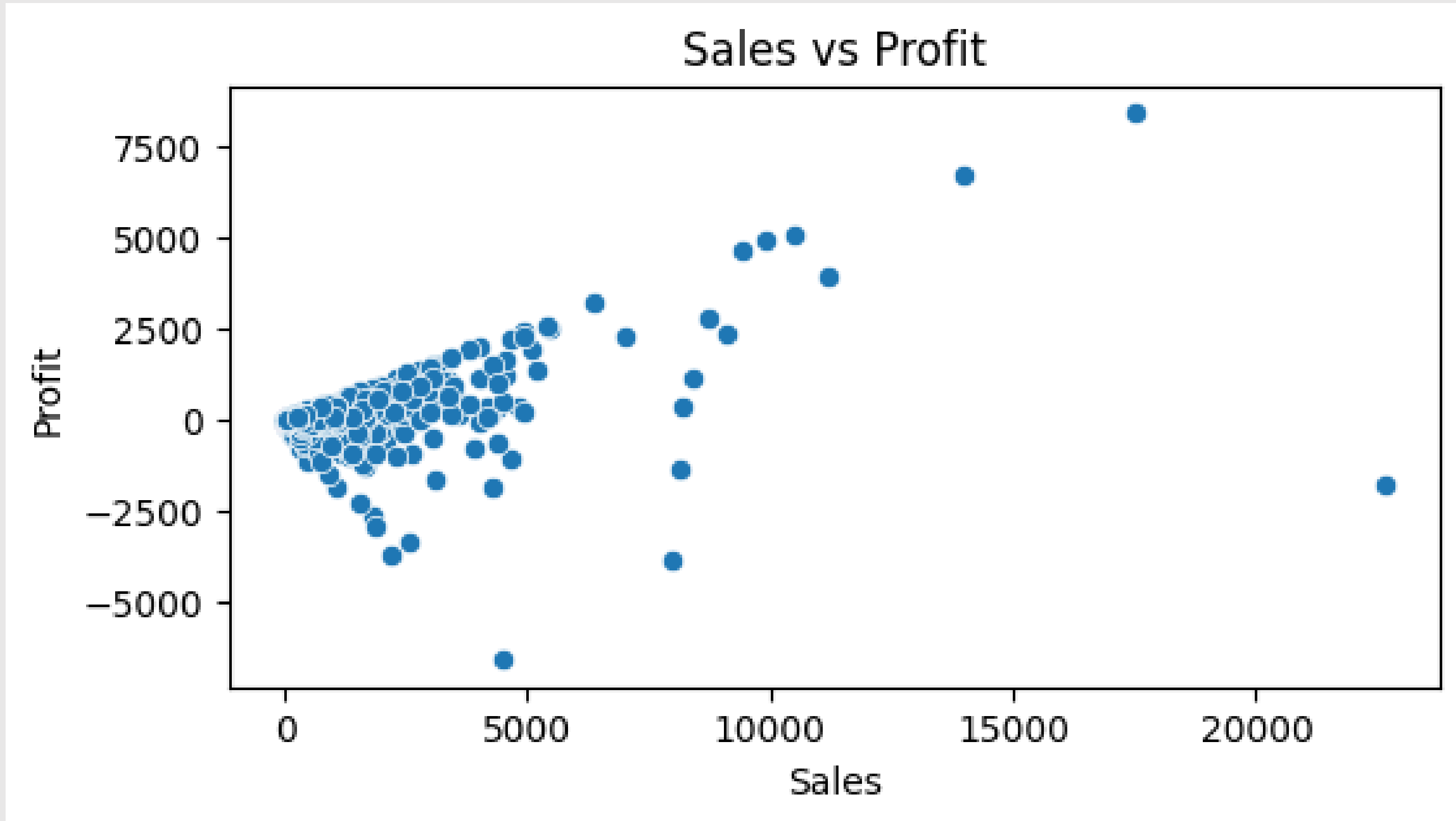
LINE CHART



SCATTER PLOT

- **Use Case:** Scatter plots are used to find relationships or correlations between two numerical variables.
- **Number of Variables:** Scatter plots represent two (or three, if color, size, or shape is used to represent another variable) numerical variables.
- **Type of Data:** Scatter plots are used with numerical data.
- **Comparison:** Scatter plots make it easy to compare two numerical variables and identify any trends, clusters, or outliers.
- **Considerations:** Scatter plots require sufficiently large and diverse datasets to be meaningful. They might not be effective if the dataset is too small or if the variables are not numerically continuous.

SCATTER PLOT



BOXPLOT

- **Use Case:** Box plots are ideal for displaying the distribution of a numerical variable across different categories.
- **Number of Variables:** Box plots can represent one or more numerical variables and one or more categorical variables.
- **Type of Data:** Box plots are used with one numerical and one categorical variable.
- **Comparison:** Box plots make it easy to compare the distribution of a numerical variable across different categories. They show the median, quartiles, and potential outliers.
- **Considerations:** Box plots provide a more detailed summary of data distribution compared to bar charts, but they can become cluttered if there are too many categories.

BOXPLOT

