

- **Data Exploration:**

Tools Used: Python IDLE Shell.

Libraries Used: Pandas, NumPy, matplotlib, seaborn.

Process: Loaded the dataset using pandas read_csv() function. Explored the dataset structure using shape. Explored dimensions, and data types using info() and head() functions. Analyzed the distribution and summary statistics of numerical variables using describe() function.

- **Data Cleaning:**

Tools Used: Python IDLE Shell.

Libraries Used: Pandas, NumPy, matplotlib, seaborn.

Process: This data set has no missing values or null values. Removed duplicate rows using drop_duplicates() function. Changed 'Postal Code' data type from integer to string to avoid leading zero error. Changed 'Quantity' data type from integer to float.

- **Descriptive Statistics:**

Tools Used: Python IDLE Shell.

Libraries Used: Pandas, NumPy, matplotlib, seaborn.

Process: Calculated total sales, total quantity, total profit, total discount and average order value. Visualized distribution of sales, quantity, profit and discount.

- **Customer Segmentation:**

Tools Used: Python IDLE Shell.

Libraries Used: Pandas, NumPy, matplotlib, seaborn.

Process: Segmented customers based on attributes such as segment, region, or category. Analyzed customer segments based on purchasing behaviour, profitability, and other relevant factors

- **Time Analysis:**

The dataset 'Superstore Sales' does not include a date column, which means that time series analysis is not possible. It was also impossible to proceed with tasks such as examining sales trends over different time periods (e.g., daily, monthly, yearly).

- **Product Analysis:**

Tools Used: Python IDLE Shell.

Libraries Used: Pandas, NumPy, matplotlib, seaborn.

Process: Analyzed product categories and sub-categories to identify popular products, sales trends, and profitability. Explored opportunities for product diversification or optimization based on sales perform.

- **Visualization:**

Tools Used: Python IDLE Shell.

Libraries Used: Pandas, NumPy, matplotlib, seaborn.

Process: Created visualizations such as scatter plots, bar charts, heatmaps, and pair plots to communicate key insights effectively. Customized visualizations to enhance readability and clarity using matplotlib and seaborn.