E-Commerce Sales Data Analysis Using Python

Project Overview

This project focuses on analyzing an E-commerce Superstore dataset using Python to extract meaningful business insights. The analysis helps in understanding sales performance, profit trends, customer segments, and regional growth patterns.

Dataset Description

The dataset used in this project is the Sample Superstore dataset in CSV format. It contains order-level sales data including order dates, product categories, regions, sales, profit, and discount details.

Tools & Technologies Used

Python, Pandas, NumPy, Matplotlib, Seaborn, and Jupyter Notebook were used to perform data cleaning, analysis, and visualization.

Objectives of the Analysis

To analyze overall sales and profit performance, identify high and low performing products, study regional and customer segment trends, evaluate the impact of discounts, and perform time-based sales analysis.

Business Problems Solved

- Identified top-performing and low-performing categories and sub-categories.
- Analyzed region-wise and segment-wise sales performance.
- Studied the impact of discounts on profit margins.
- Analyzed sales trends over time.
- Generated insights to support business decision-making.

Key Insights

The analysis revealed that certain categories generate high sales but low profit due to heavy discounts. Some regions consistently outperform others, and higher discounts negatively affect overall profitability.

Conclusion

This project demonstrates how Python can be used to analyze real-world business data and generate insights. It strengthened skills in data cleaning, exploratory data analysis, and business interpretation.

Acknowledgement

This project was completed with guidance and learning support from the YouTube channel THE iSCALE.