

Internship Final Report

Intermediate Level

Student Name: Mahasweta Talik

University: Kalinga Institute of Industrial Technology

Major: Computer science

Internship Duration: August 1st, 2025 - August 31st, 2025

Internship Company: ShadowFox

Domain: AI/ML

Mentor: Kalai Maha

Coordinator: Mr. Aakash

Objectives

The primary goals I set for this project were:

1. To understand and apply core data analytics techniques using Python.
2. To explore sales and profit trends across product categories, regions, and time periods.
3. To derive actionable insights that can support business decisions in retail environments.

Tasks and Responsibilities

During this self-guided internship project, I conducted a comprehensive analysis of retail store data. My key responsibilities included:

- **Data Acquisition and Cleaning:**

Imported and cleaned the “Sample Superstore” dataset using Pandas. Handled missing values, standardized date formats, and created new time-based features.

- **Exploratory Data Analysis (EDA):**

Performed descriptive analysis to understand sales distribution, profit margins, and discount impacts. Used grouping and aggregation to uncover trends.

- **Visualization and Insight Generation:**

Created bar charts, line graphs, and heatmaps using Matplotlib and Seaborn to visualize monthly sales, regional performance, and category-wise profitability.

- **Business Interpretation:**

Identified high-performing product categories and under-performing regions. Analyzed the effect of discounts on profit and suggested pricing optimizations

Learning Outcomes

This project provided a strong foundation in data analytics and business intelligence. Key takeaways include:

- **Technical Proficiency:**

Gained hands-on experience with Python libraries such as Pandas, NumPy, Matplotlib, and Seaborn.

- **Analytical Thinking:**

Learned to interpret complex datasets and translate raw numbers into meaningful business insights.

- **Visualization Skills:**

Developed the ability to present data clearly and effectively using visual storytelling.

- **Self-Discipline and Initiative:**

Strengthened my ability to manage a solo project, troubleshoot issues, and seek guidance when needed.

Challenges and Solutions

1. **Data Complexity and Noise:**

Faced difficulty in interpreting overlapping trends. I resolved this by segmenting the data by region and category for clearer analysis.

2. Visualization Clarity:

Initial plots were cluttered and hard to read. I refined them using color palettes, annotations, and layout adjustments for better storytelling.

Conclusion

This project was a valuable step in my journey toward becoming a data analyst. It helped me bridge academic learning with practical application and gave me confidence to tackle real-world business problems using Python. I now feel more prepared to contribute to data-driven decision-making in professional settings.

Acknowledgments

I extend sincere thanks to my academic coordinator Mr. Aakash for his encouragement, and to the online learning community and AI tools that supported my exploration. This experience has deepened my interest in analytics and reinforced my commitment to continuous learning.