

# Superstore Data Analysis Project

Welcome to my Superstore Data Analysis project! This repository contains a comprehensive analysis of the Superstore sales data, performed using both Microsoft Power BI and Python. The goal of this project was to uncover key insights into sales performance, profitability, and regional trends to help a business make data-driven decisions.

## Project Overview ✨

This project follows a complete data analysis workflow, from data cleaning to advanced visualization and dashboard creation. I have used a dual-tool approach to demonstrate proficiency in both business intelligence platforms and scripting languages.

## Part 1: Power BI Dashboard

I leveraged the powerful capabilities of Power BI to create an interactive and dynamic dashboard. This allows for quick, high-level insights and a user-friendly experience. The key visualizations include:

- **Total Sales and Profit by Region:** A clear comparison of performance across different geographic areas.
- **Sales Over Time:** A line chart showing sales trends, perfect for identifying seasonality and growth.
- **Category Performance:** A breakdown of sales and profit by product category and sub-category.

The dashboard provides a holistic view of the business, enabling stakeholders to filter data and explore specific metrics with ease.

## Part 2: Python Analysis 🐍

For a deeper, more customizable analysis, I used Python with the `pandas`, `matplotlib`, and `seaborn` libraries. The Python script (`superstore_visualization.py`) performs the following steps:

1. **Data Loading & Cleaning:** The script efficiently loads the raw CSV data, handles data types (especially dates), and standardizes column names.
2. **Visualization Generation:** It creates a series of professional plots to reveal detailed insights, including:
  - **Sales by Category:** A bar chart to compare sales across product categories.
  - **Sales by Sub-Category:** A detailed horizontal bar chart for a granular view of product performance.

- **Monthly Profit Over Time:** A line plot to track the trend of profitability month-over-month.
- **Regional Performance:** A side-by-side comparison of sales and profit for each region.

This scripted approach allows for reproducibility and can be easily adapted for future data updates or new analytical questions.