

# Project Description

This project aims to transform historical sales data into actionable strategic insights, to support senior management in a fully optimized practice of product distribution, and thus pricing, stock, and marketing management development, and to achieve maximization of independent operational activities.

- **Members:**

Saif Al-Din Abdel Nasser Hassan Ahmed	Data Collection & Cleaning
Abdalrhman Mohamed Khairy Abdullah	Data Analysis & KPI Development
Sarah Ahmed Elsayed Mohamed	Dashboard Design & Visualization
Mai Hassan Muhammad Judeh	Dashboard Design & Visualization

- **Team Leader:**

**Abdalrhman Mohamed Khairy Abdullah,**

Responsible for project coordination, task assignment, and final review.

- **Objectives:**

1. **Financial Performance Measurement:** To accurately determine the total revenue, average revenue per order and revenue contribution across different product categories, regions, and customer segments, thus clearly highlight areas of financial strength and weakness areas.
2. **Inventory Optimization:** To develop a robust **Sales Forecast** for the next quarter by analyzing historical demand trends, with the aim of determining reorder priorities by identifying high-demand and high-value products that should be stocked adequately and minimizing revenue loss due to **stock outs** of high-demand items.
3. **Product Portfolio Assessment:** To identify the **top-performing and worst-performing products** based on both sales volume, This includes performing **Market Basket Analysis** to discover products frequently purchased together, informing cross-selling strategies.
4. **Geographic Expansion Strategy:** To analyze sales across different **regions and states**, identifying areas with the fastest growth or the highest **Average Order Value (AOV)** to guide potential market expansion or resource allocation.

- **Tools:**

1. Python (pandas, Matplotlib, NumPy)
2. Power BI

● **Milestones:**

Milestone	Description	Deadline
Data Collection & Cleaning	Gather raw data and clean missing and duplicate values.	20/10/2025
Data Analysis & KPI Definition	Perform data exploration and define performance KPIs.	27/10/2025
Dashboard Design & Visualization	Build and test the interactive Power BI dashboard.	09/11/2025
Final Report & Presentation	Submit final report and present key findings.	12/11/2025

● **KPIS:**

Area	KPI Description	Target
Data Cleaning & Processing	100% of missing or duplicate data handled	100%
Analysis & Insights	Percentage of analytical questions answered	≥ 90%
Visualization & Reporting	Dashboard load time	< 3 seconds
Visualization & Reporting	Usability – % of users who can navigate without help	≥ 80%
Final Documentation & Presentation	Final report completeness	90%
Final Documentation & Presentation	Minimum actionable recommendations provided	≥ 3

**Expected Outcomes**

- **Interactive Sales Dashboard:** A comprehensive, visual dashboard for real-time monitoring of key sales and profitability KPIs.
- **Actionable Profitability Roadmap:** Clear identification of top-performing products/regions and specific strategies to discontinue underperforming items.

- **Accurate Demand Forecast:** A predictive model to forecast future sales and optimize inventory levels, minimizing stock outs and surplus costs.
- **Targeted Customer Segments:** Define the most profitable customer segments to guide marketing personalization and maximize campaign effectiveness.