SYNOPSIS

PROJECT: INVENTORY MANAGEMENT SYSTEM

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PROJECT OVERVIEW

- This project focuses on analyzing key performance indicators (KPIs) related to inventory management for a business. The goal is to provide insights into stock levels, reorder needs, sales trends, and overall inventory performance by calculating essential KPIs using Python, Power BI, and SQL.

DATASET

- A sample inventory dataset is used, which includes columns such as:
- - Item ID
- - Item Name
- - Category
- - Quantity Available
- - Quantity Sold
- - Reorder Level
- - Lead Time (Days)
- - Supplier Name
- - Unit Price
- - Last Restocked Date

PROBLEM STATEMENT

- The project aims to address the following key performance indicators (KPIs):
- 1. Total Inventory Value
- 2. Reorder Status: Identify items that need to be reordered.
- 3. Monthly Sales Trends: Track sales volume over time.
- 4. Stock Levels by Category: Analyze stock distribution across categories.
- 5. Supplier Performance: Track supplier-wise stock and orders.
- 6. Average Reorder Lead Time: Calculate average time taken to restock.
- 7. Stockout Rate: Measure frequency of stockouts.
- 8. Inventory Turnover Ratio: Assess inventory turnover frequency.

CHARTS

- ✓ The following types of visualizations will be used to analyze and present data:
- ✓ 1. Sales Trends by Month (Line Chart): Show monthly sales volume.
- ✓ 2. Stock Levels by Category (Bar Chart): Display stock levels by item category.
- ✓ 3. Reorder Status (Gauge): Highlight items needing reorder.
- ✓ 4. Supplier Analysis (Pie Chart): Display item distribution by supplier.
- ✓ 5. Inventory Value Over Time (Line Chart): Track inventory value trends.

METHODOLOGY

- 1. Data Collection & Processing: Data is collected from the inventory system using SQL, cleaned and transformed for analysis in Python and Excel.
- 2. Excel Analysis: Basic data exploration, KPIs calculations, and preliminary analysis.
- 3. Power BI Dashboard: Interactive visualizations created in Power BI to present key insights.

TECHNOLOGIES USED

- - Python: For Data Analysis and Calculations.
- - MS Excel: For Data Cleaning and Preprocessing.
- - Power BI: For Interactive Dashboards and Reports.

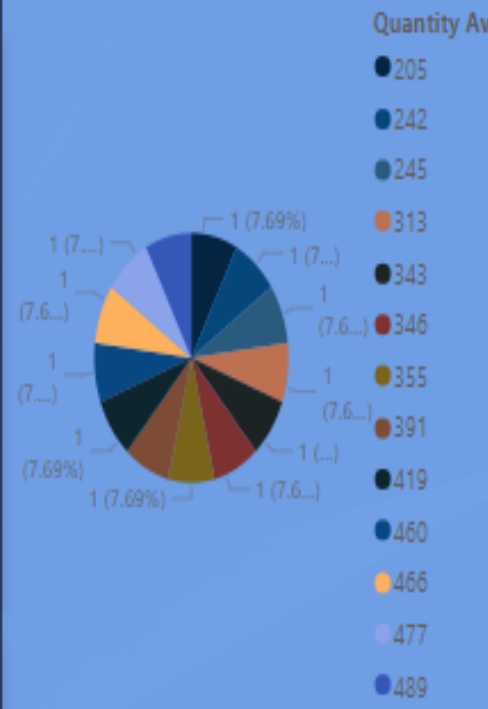
Inventory Management System

Category, Year, Quarter, Month, Day, Supplier Name

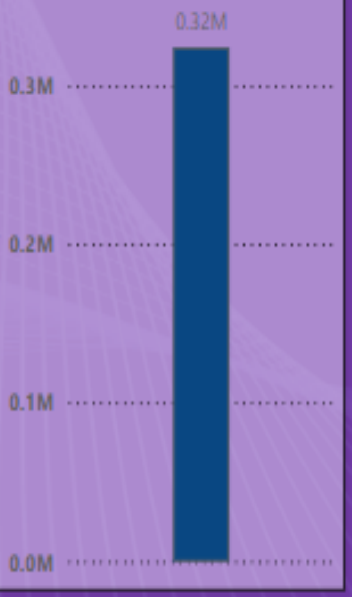
- Books
- Clothing
- Electronics
- Home & Kitchen
- Sports

323.79K
Total Inventory Value

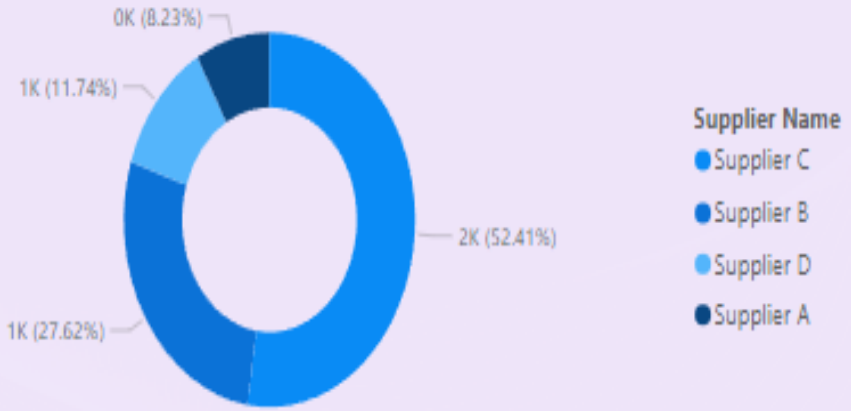
Count of Category by Quantity Avail



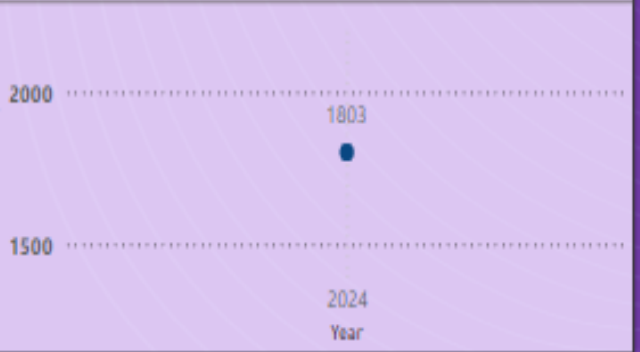
um of Inventory Value



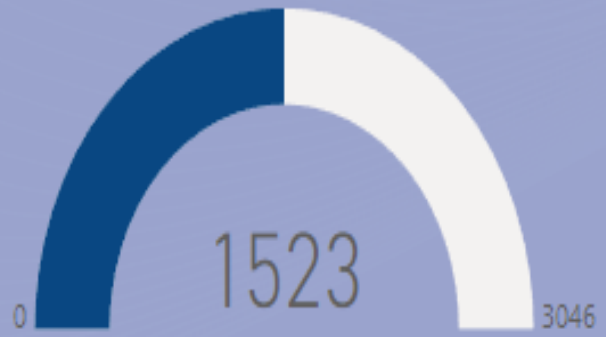
Sum of Quantity Available by Supplier Name



um of Quantity Sold by Year



Sum of Reorder Level



THANK YOU