

Retail Inventory & Revenue Analysis (Walmart Dataset)

Project Overview

This project focuses on analyzing Walmart retail sales and inventory data to identify revenue patterns, inventory inefficiencies, and business optimization opportunities.

The analysis helps uncover:

- Revenue concentration risks
- Inventory mismanagement issues
- Stockouts and overstock problems
- Demand vs inventory mismatches

The goal is to provide data-driven insights to improve inventory planning, reduce losses, and increase profitability.

Objectives

- Analyze revenue by product, category, and store
 - Identify top-performing and low-performing products
 - Detect stockout and overstock risks
 - Analyze monthly revenue trends
 - Measure correlation between demand and inventory
 - Identify slow-moving products
 - Provide business recommendations
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Technologies Used

- Python
 - Pandas
 - NumPy
 - Matplotlib
 - Seaborn
 - Jupyter Notebook
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Project Workflow

1. Data Loading
 2. Data Cleaning
 3. Exploratory Data Analysis (EDA)
 4. Revenue Analysis
 5. Inventory Risk Analysis
 6. Correlation Analysis
 7. Visualization
 8. Business Insights & Recommendations
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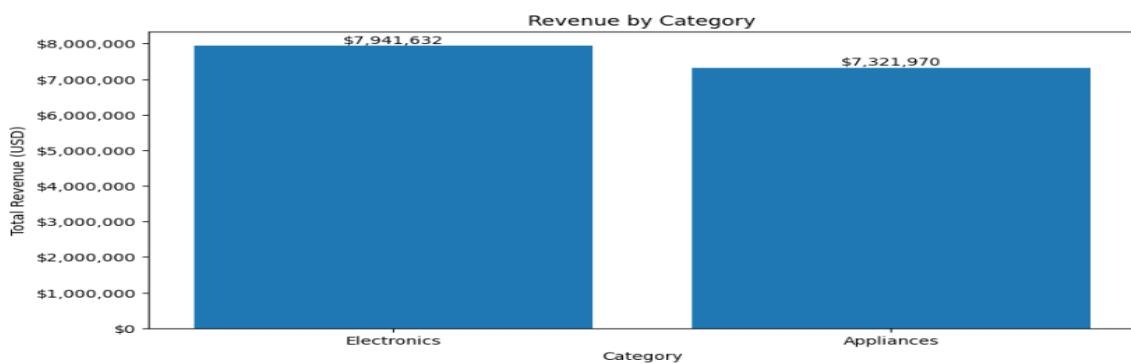
Key Insights

- Top 10 products contribute ~42% of total revenue
 - High dependency on limited products and stores
 - 30–40% products at risk of stockouts
 - 25–35% stores have overstock
 - Poor correlation between demand and inventory
 - Estimated \$750,000+ revenue loss due to stockouts
 - Large capital tied in slow-moving products
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Sample Visualizations

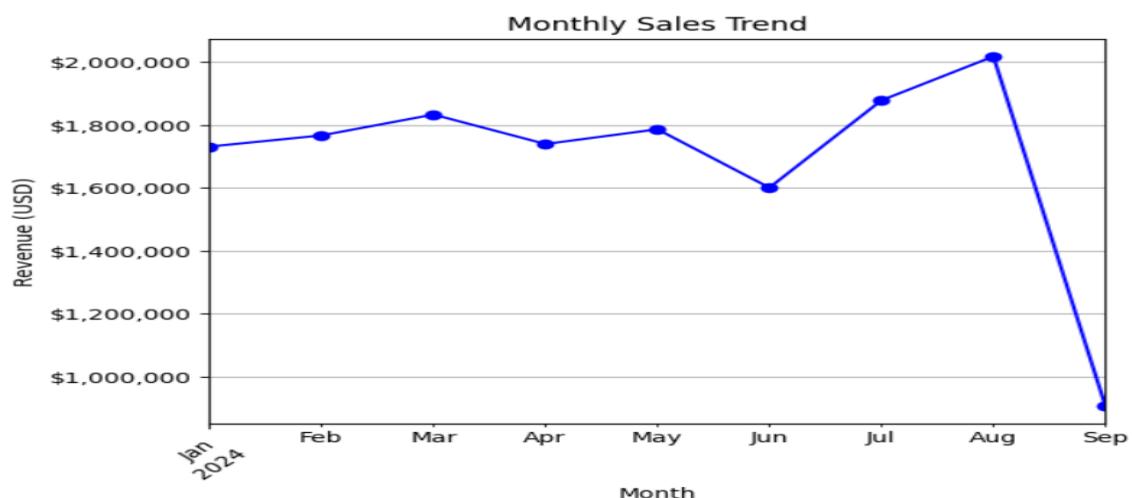
Images:-

└── revenue_by_category.png

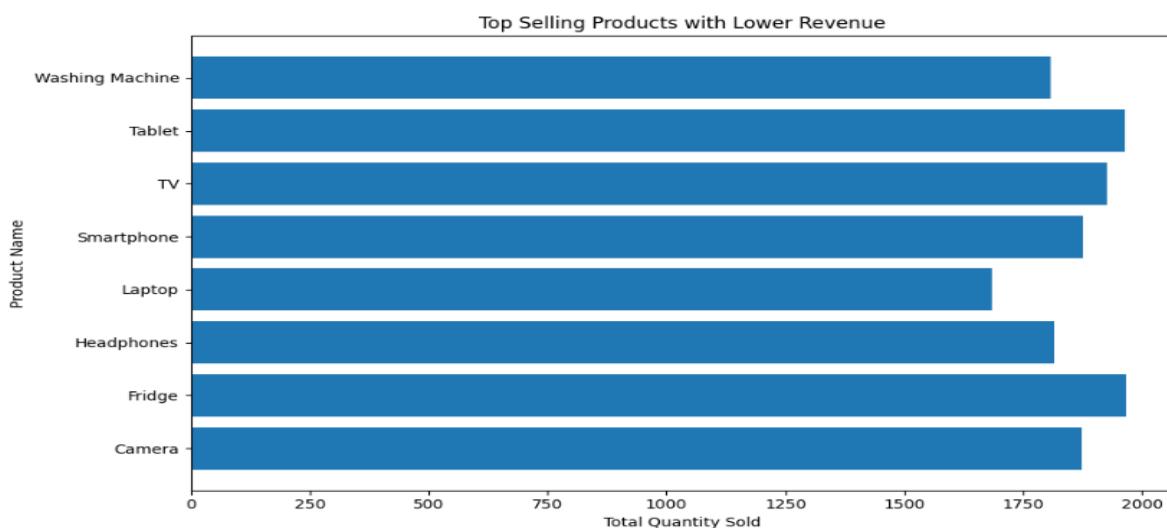


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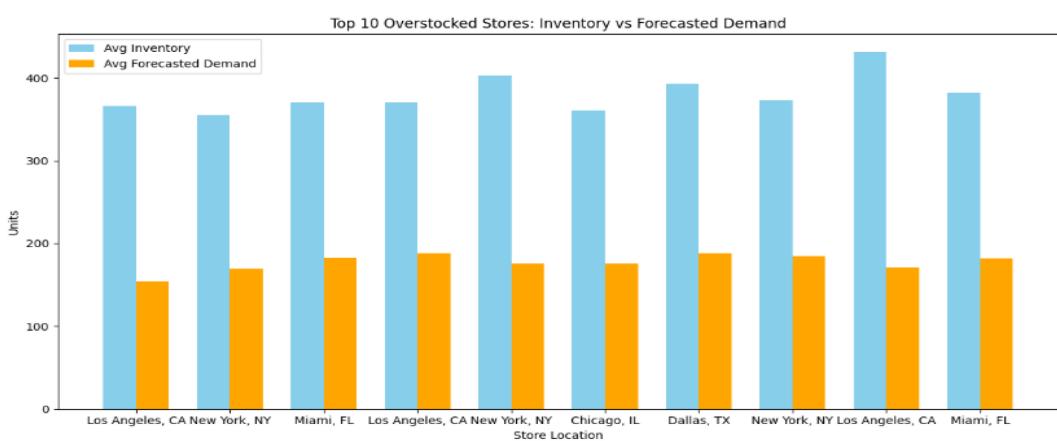
└── monthly_revenue_trend.png



└── Top Selling Products with Lower Revenue.png



└── overstock_analysis.png



Retail Inventory & Revenue Analysis (Walmart Dataset)

Store-wise Revenue, Quantity Sold, and AOV



Business Impact

This project helps businesses:

- Reduce stockouts
- Reduce overstock costs
- Improve revenue planning
- Optimize inventory management
- Improve demand forecasting

Author

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