Exploratory Data Analysis on Retail Sales Data

Internship Project – Oasis Infobyte

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Problem Statement

Analyze retail sales data

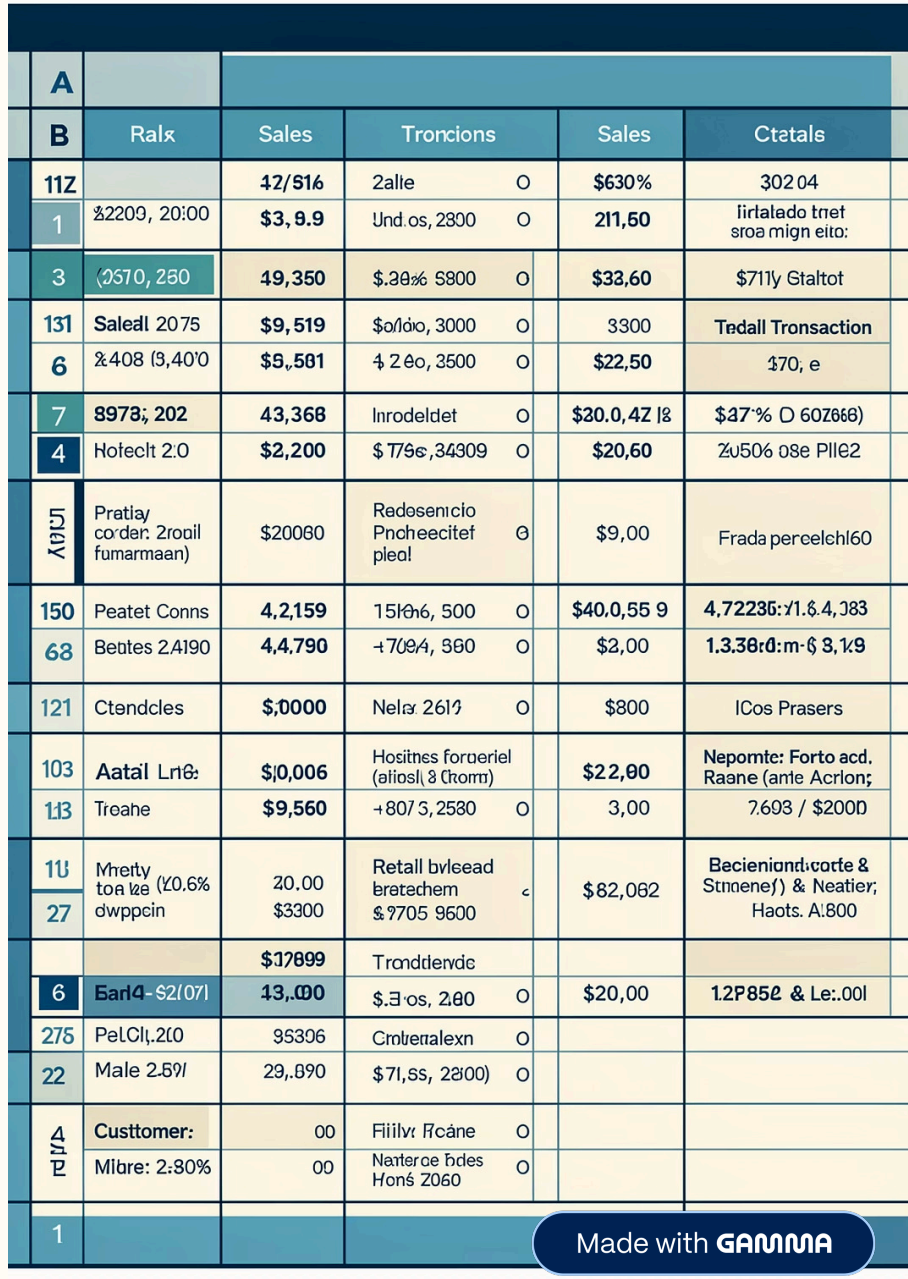
Identify sales trends and patterns

Understand customer purchasing behavior

Provide data-driven recommendations

Dataset Description

- Dataset contains retail transaction records
- Columns include: Date, Sales, Product Category, Customer, Quantity, Revenue
- Data includes time-based sales information



Data Loading & Cleaning

- Loaded dataset using Pandas
- Checked missing values
- Removed duplicates
- Converted date column to datetime format
- Verified data types

Descriptive Statistics

- Calculated mean, median, and standard deviation
- Analyzed sales distribution
- Identified overall revenue performance

Time Series Analysis

Monthly Sales Trend

Analyzed monthly sales trend

Peak Periods

Identified highest and lowest sales periods

Seasonal Patterns

Observed seasonal patterns

Product Analysis

- Identified top-selling product categories
- Compared revenue across categories
- Analyzed quantity vs revenue

Customer Analysis

- Analyzed customer purchasing behavior
- Identified repeat customers
- Observed buying patterns

Data Visualization

Line plots for sales trend

Bar charts for product comparison

Heatmaps for correlation analysis

Key Insights

Certain months show peak sales

Few product categories dominate revenue

Customer behavior impacts overall sales

Recommendations

1. Increase stock during peak months
2. Promote high-performing products
3. Offer targeted discounts
4. Focus on customer retention strategies

Conclusion

Successfully performed EDA on retail data

✓ Generated actionable business insights

✓ Improved understanding of sales patterns