



Exploratory Data Analysis on Retail Sales Data

Internship Project – Oasis Infobyte

Your Name : Anisha More

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

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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

Observed buying patterns

Identified repeat customers

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