



# 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

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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

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# 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