Customer Shopping Behavior Analysis

Uncovering insights for strategic business decisions.

Project Overview

Transactional Data

3,900 purchases analyzed across categories.

Uncover Insights

Spending patterns, segments, preferences, subscriptions.

Guide Decisions

Inform strategic business choices.

Dataset Summary

Rows: 3,900

Columns: 18

Key Features:

- Customer demographics (Age, Gender, Location, Subscription)
- Purchase details (Item, Category, Amount, Season, Size, Color)
- Shopping behavior (Discount, Promo, Previous, Frequency, Review, Shipping)

Missing Data:

37 values in Review Rating column.

Exploratory Data Analysis (Python)

01

Data Loading & Exploration

Pandas for import, df.info(), .describe() for summary.

02

Missing Data Handling

Imputed Review Rating with median per category.

03

Column Standardization

Renamed to snake_case for readability.

04

Feature Engineering

Created age_group, purchase_frequency_days.

05

Data Consistency

Dropped redundant promo_code_used.
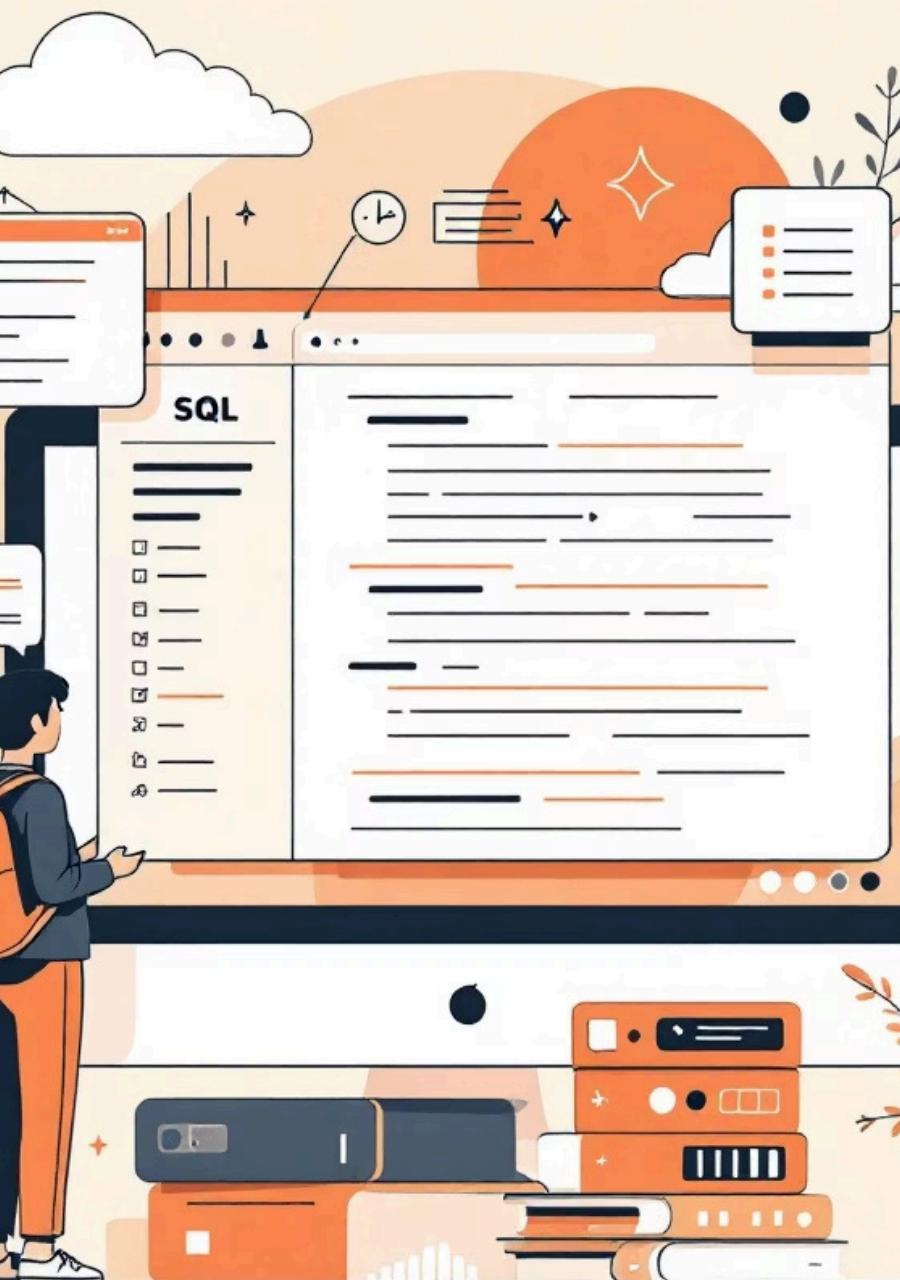
06

Database Integration

Loaded cleaned data to PostgreSQL.

Data Analysis (SQL)
Key Business Questions

1

Revenue by Gender

Male vs. Female customer revenue.

2

High-Spending Discount Users

Customers using discounts, spending above average.

3

Top 5 Products by Rating

Highest average review ratings.

4

Shipping Type Comparison

Average purchase amounts for Standard vs. Express.

SQL Analysis Continued

1

Subscribers vs. Non-Subscribers

Average spend and total revenue comparison.

2

Discount-Dependent Products

Top 5 products with highest discounted purchases.

3

Customer Segmentation

New, Returning, Loyal segments based on history.

4

Top 3 Products per Category

Most purchased products within each category.

# SQL Analysis Continued

1
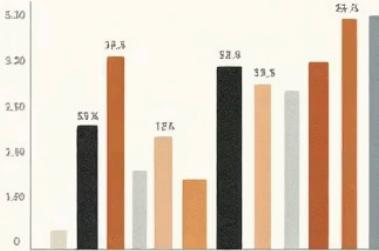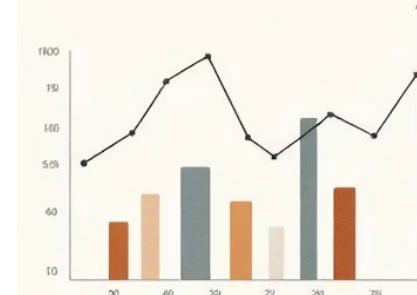
Repeat Buyers & Subscriptions

Customers with >5 purchases and subscription likelihood.
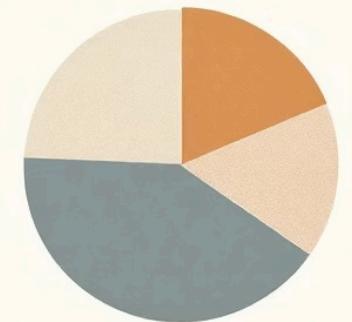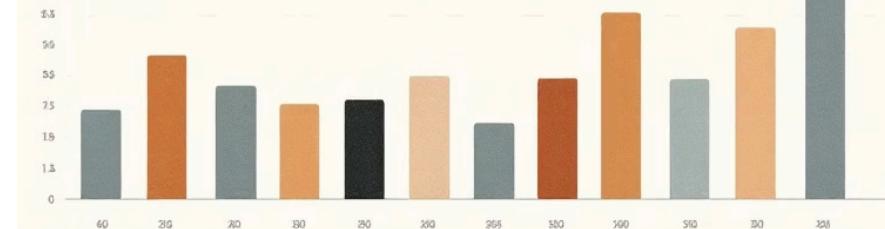
2

Revenue by Age Group

Total revenue contribution of each age group.

Dashboard in Power BI

Interactive visualization of insights.

Business Recommendations

→ **Boost Subscriptions**

Promote exclusive benefits.

→ **Customer Loyalty Programs**

Reward repeat buyers to foster loyalty.

→ **Review Discount Policy**

Balance sales with margin control.

Business Recommendations Continued

→ **Product Positioning**

Highlight top-rated and best-selling products.

→ **Targeted Marketing**

Focus on high-revenue age groups and express-shipping users.