



# Customer Shopping Behavior Analysis

Uncovering insights from transactional data to guide strategic business decisions.

# Project Overview



## Transactional Data

3,900 purchases analyzed.



## Product Categories

Insights into spending patterns.



## Customer Segments

Understanding preferences & subscriptions.



# Dataset Summary

- **Rows: 3,900**
- **Columns: 18**
- **Key Features:**
  - Customer demographics
  - Purchase details
  - Shopping behavior



Missing Data: 37 values in Review Rating.

# Exploratory Data Analysis (Python)

01

## Data Loading & Exploration

Imported dataset, checked structure and summary statistics.

02

## Missing Data Handling

Imputed missing Review Ratings using median.

03

## Column Standardization

Renamed columns to snake\_case for readability.

04

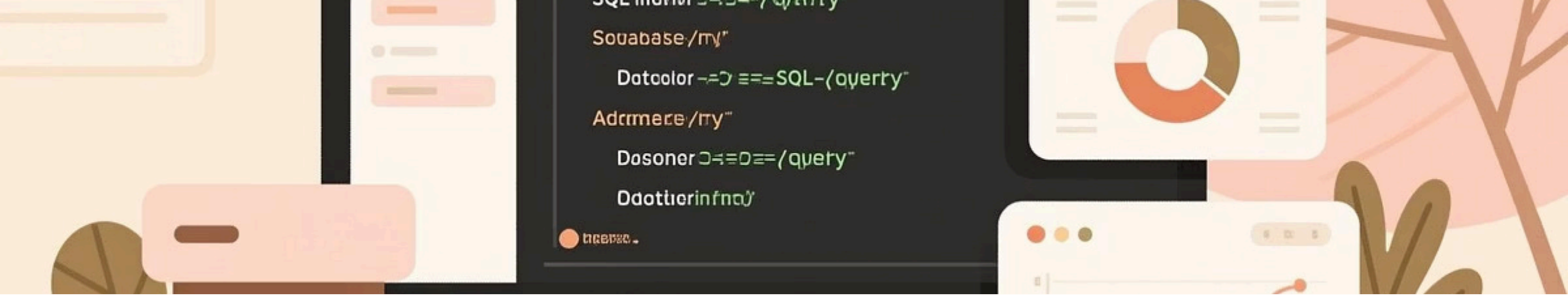
## Feature Engineering

Created age\_group and purchase\_frequency\_days.

05

## Database Integration

Loaded cleaned data into PostgreSQL for SQL analysis.



# Data Analysis (SQL)

1

## Revenue by Gender

Male: \$157,890, Female: \$75,191

2

## High-Spending Discount Users

Identified customers above average spend.

3

## Top 5 Products by Rating

Gloves (3.86), Sandals (3.84), Boots (3.82), Hat (3.80), Skirt (3.78)

4

## Shipping Type Comparison

Express avg: \$60.48, Standard avg: \$58.46

# SQL Insights: Subscriptions & Discounts

## Subscribers vs. Non-Subscribers

Subscribers: 1053 customers, avg spend \$59.49, total revenue \$62,645.

Non-Subscribers: 2847 customers, avg spend \$59.87, total revenue \$170,436.

## Discount-Dependent Products

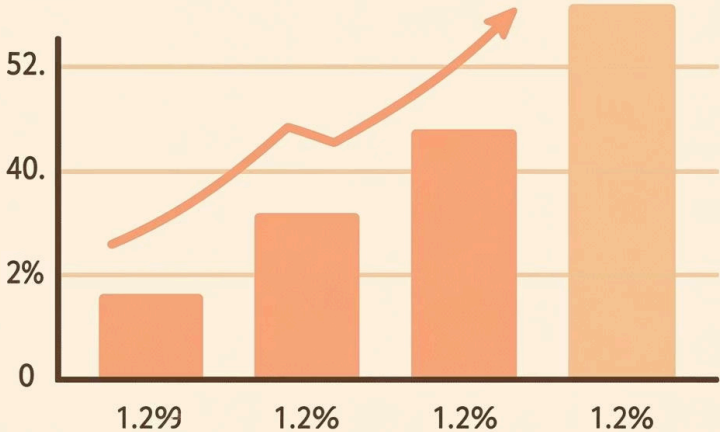
Hat (50%), Sneakers (49.66%), Coat (49.07%), Sweater (48.17%), Pants (47.37%).

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None.

0%



# Customer Segmentation



# Product Performance by Category

1	Accessories	Jewelry	171
1	Clothing	Blouse	171
1	Footwear	Sandals	160
1	Outerwear	Jacket	163



# Repeat Buyers & Revenue by Age

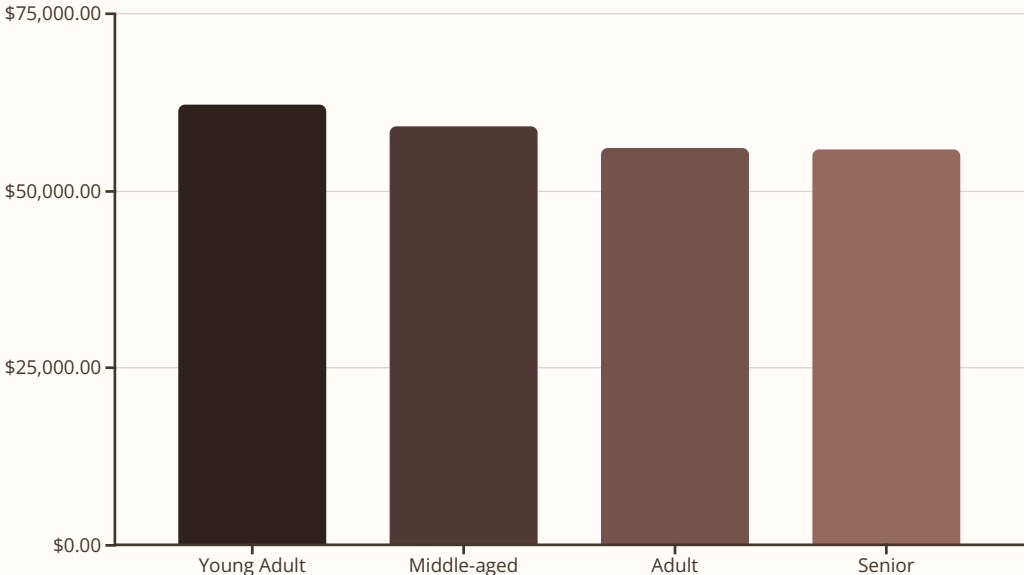


**Subscribed Repeat Buyers**

Customers with >5 purchases are more likely to subscribe.



**Non-Subscribed Repeat Buyers**



# Business Recommendations

## → **Boost Subscriptions**

Promote exclusive benefits for subscribers.

## → **Customer Loyalty Programs**

Reward repeat buyers to foster loyalty.

## → **Review Discount Policy**

Balance sales boosts with margin control.

## → **Product Positioning**

Highlight top-rated and best-selling products.

## → **Targeted Marketing**

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