

# Customer Shopping Behavior Analysis

Uncovering actionable insights from 3,900 transactions to drive strategic business decisions



# Dataset at a Glance

3,900

Purchase  
Records

Complete transaction  
history

18

Data Fields  
  
Comprehensive  
customer view

37

Missing Values  
  
Handled in Review  
Rating column



# Key Data Dimensions



## Customer Profile

Age, gender, location, subscription status



## Purchase Details

Product, category, amount, season, size, color



## Behavior Metrics

Discounts, promo codes, purchase frequency, ratings

# Python Data Preparation

01

## Data Loading & Exploration

Imported dataset, checked structure,  
summary statistics

02

## Missing Data Handling

Imputed missing ratings using category  
median

03

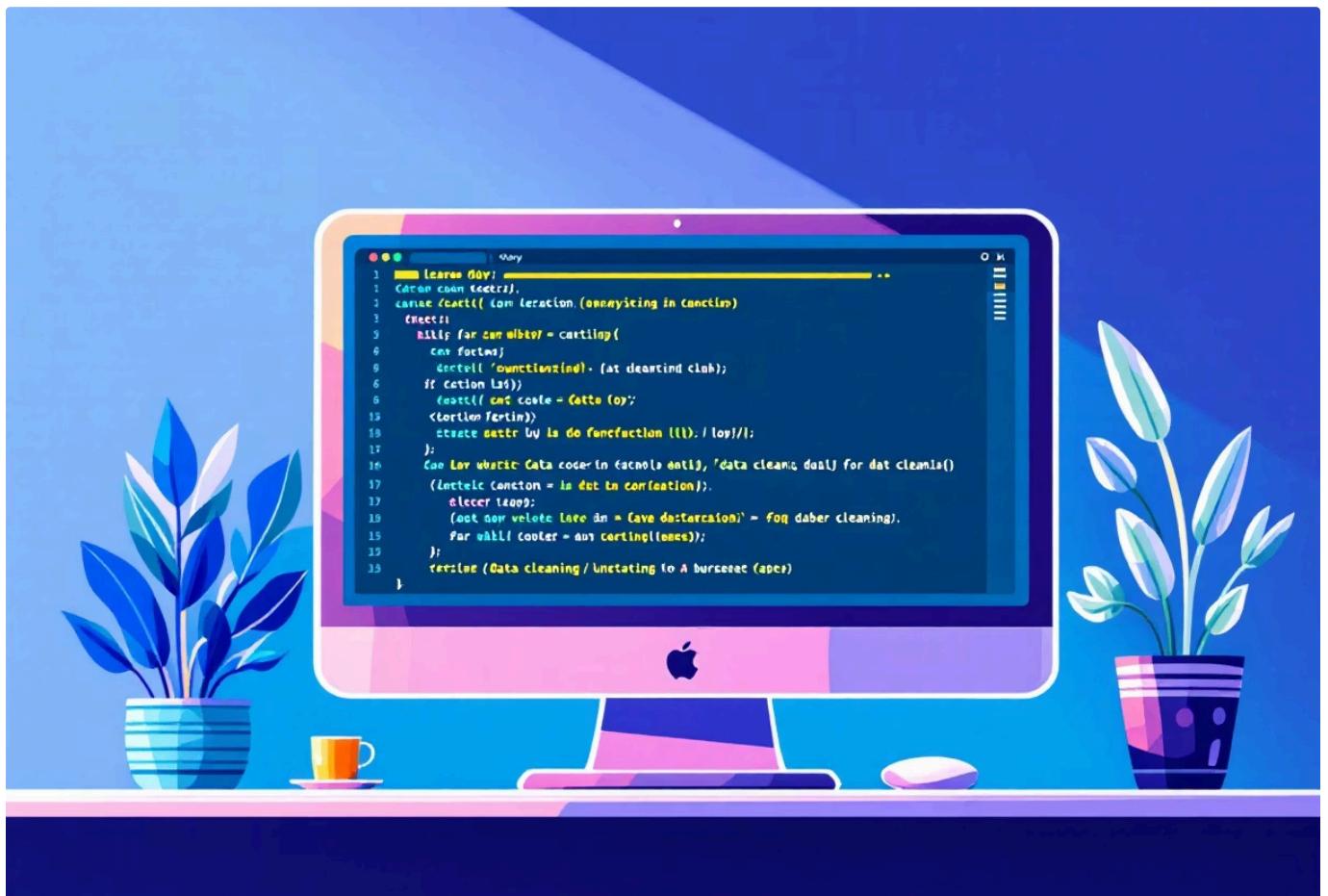
## Feature Engineering

Created age groups, purchase  
frequency calculations

04

## Database Integration

Loaded cleaned data into PostgreSQL



# SQL Analysis: Key Questions

1

## Revenue by Gender

Compare total revenue across customer demographics

2

## High-Spending Discount Users

Identify customers using discounts above average spend

3

## Top Products by Rating

Find products with highest average review ratings

4

## Shipping Impact

Compare purchase amounts between shipping types

# Additional SQL Insights

- **Subscriber vs. Non-Subscriber Spend**

Average spend and total revenue comparison

- **Discount-Dependent Products**

Products with highest percentage of discounted purchases

- **Customer Segmentation**

Classify into New, Returning, and Loyal segments

- **Repeat Buyers & Subscriptions**

Correlation between purchases and subscription likelihood

- **Revenue by Age Group**

Total revenue contribution analysis

# Business Recommendations



## Boost Subscriptions

Promote exclusive benefits to increase subscriber base and recurring revenue



## Review Discount Policy

Balance sales boosts with margin control through strategic discounting



## Customer Loyalty Programs

Reward repeat buyers to accelerate progression into loyal segment



## Targeted Marketing

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

# Power BI Dashboard



## Interactive Insights

Visual storytelling through dynamic charts, filters, and drill-down capabilities

- Real-time revenue tracking
- Customer segment analysis
- Product performance metrics
- Seasonal trend visualization