

# Customer Shopping Behavior Analysis

Understanding 3,900 purchases to drive smarter business decisions

Prepared by: Muddassir Mushtaq Mulla



# Project Scope & Approach



## Goal

Understand shopping patterns, preferences, and spending drivers



## Dataset

3,900 purchases across 18 data points



## Tools

Python, PostgreSQL, Power BI



# Dataset Overview

## Customer Information

- Age, Gender, Location
- Subscription Status

## Purchase Details

- Item, Category, Size, Color
- Purchase Amount
- Shipping Type

## Shopping Behavior

- Discount Applied
- Previous Purchases
- Frequency of Purchases
- Review Rating

## Data Quality

37 missing review ratings, slight feature overlap addressed

# Data Preparation Process

## Data Loading

Loaded with Pandas, inspected structure and statistics

## Cleaning

Filled 37 missing ratings using median per category

## Standardization

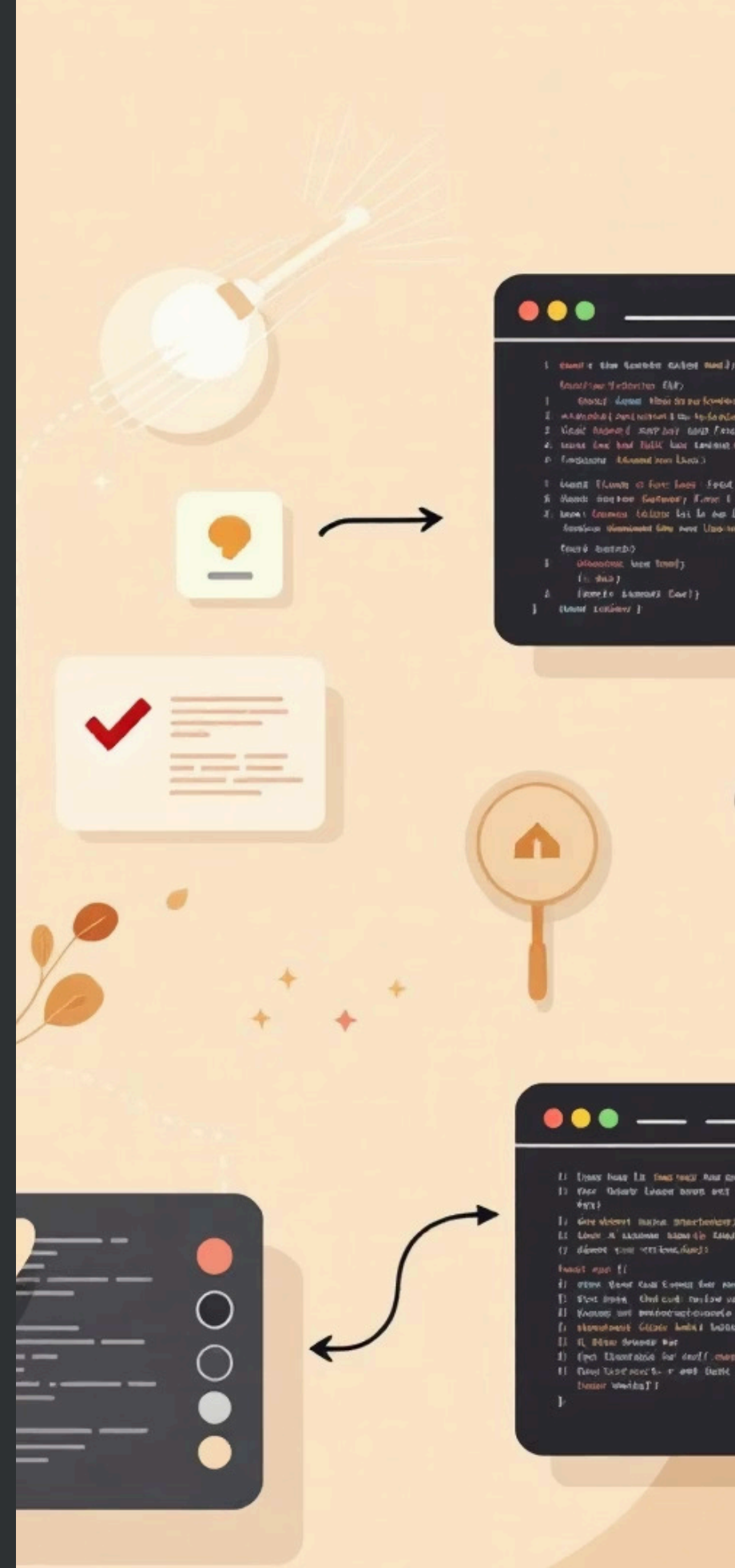
Converted to snake\_case, formatted categorical text

## Feature Engineering

Added age groups, purchase frequency, removed redundant columns

## Database Upload

Loaded clean data to PostgreSQL for business analysis



# Key Business Insights

## Revenue by Gender

Spending patterns compared across customer segments

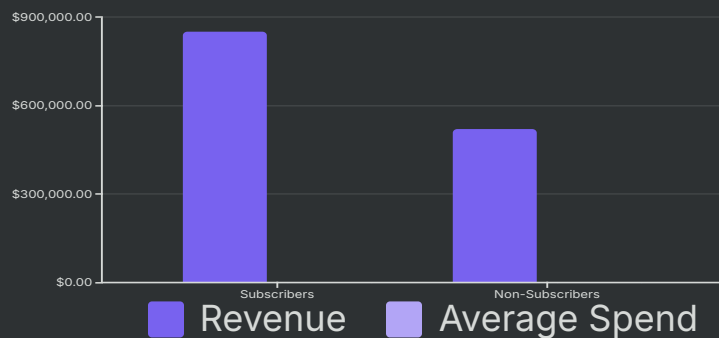
## Customer Segmentation

Classified as New, Returning, or Loyal buyers

## Top-Rated Products

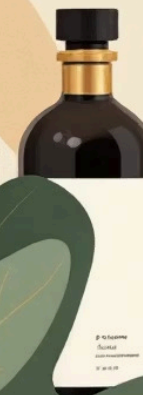
Identified highest-performing items by customer reviews

# Subscription Impact Analysis



Subscribers Drive  
Higher Value

Significant revenue uplift  
and increased average  
spend per transaction





# Shipping & Discount Patterns

1

## Shipping Type Comparison

Express shipping customers spend more per order than standard shipping users

2

## High-Spending Discount Users

Identified customers using discounts while maintaining above-average spend

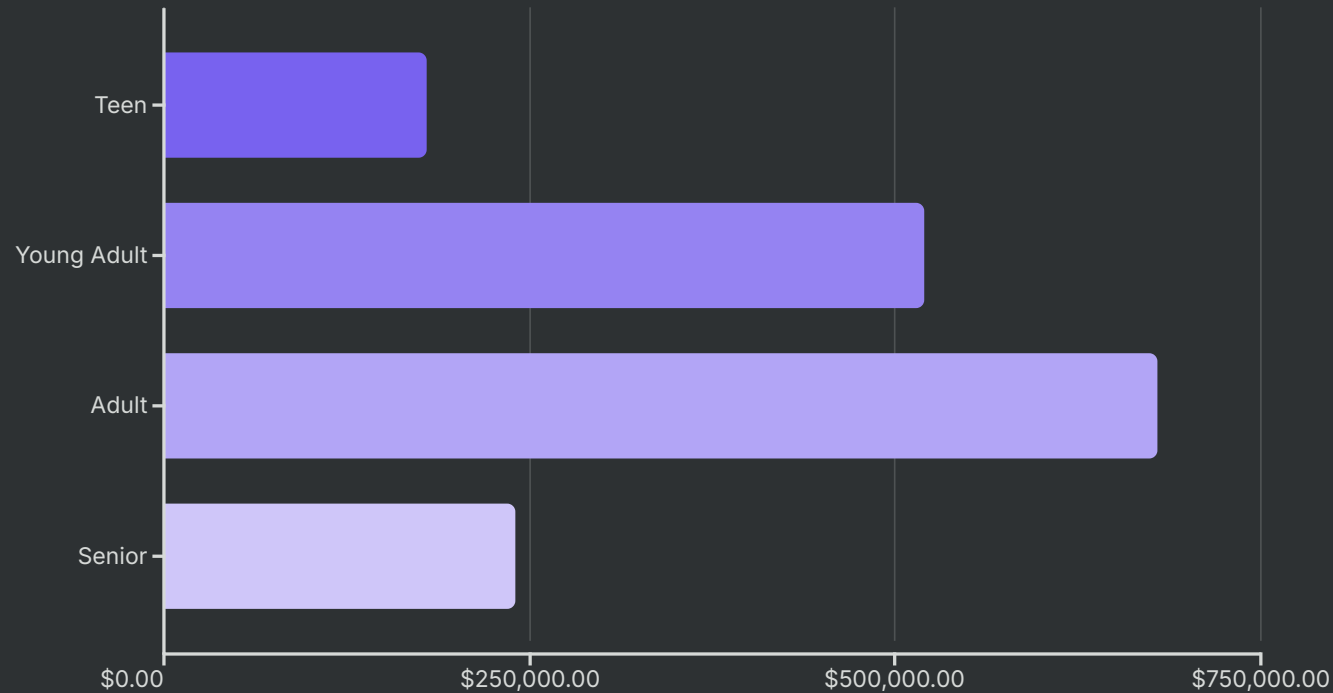
3

## Discount-Dependent Products

Certain items frequently purchased only when discounts applied



# Age Group Revenue Distribution



Adults and Young Adults represent highest-value customer segments for targeted marketing





# Business Recommendations



## Increase Subscriptions

Offer exclusive deals and free express shipping



## Build Loyalty Program

Reward repeat buyers with points and cashback



## Optimize Discounts

Review discount-dependent products, consider value pricing



## Promote Top Items

Highlight best-sellers and top-rated products



## Target High-Value Segments

Focus marketing on high-revenue age groups

# Key Takeaway

Clear understanding of customer behavior enables strategic actions to increase revenue, improve customer satisfaction, and strengthen customer loyalty.

3,900

Purchases  
Analyzed

18

Data Points

6

Actionable  
Strategies

Prepared by: Muddassir Mushtaq Mulla

