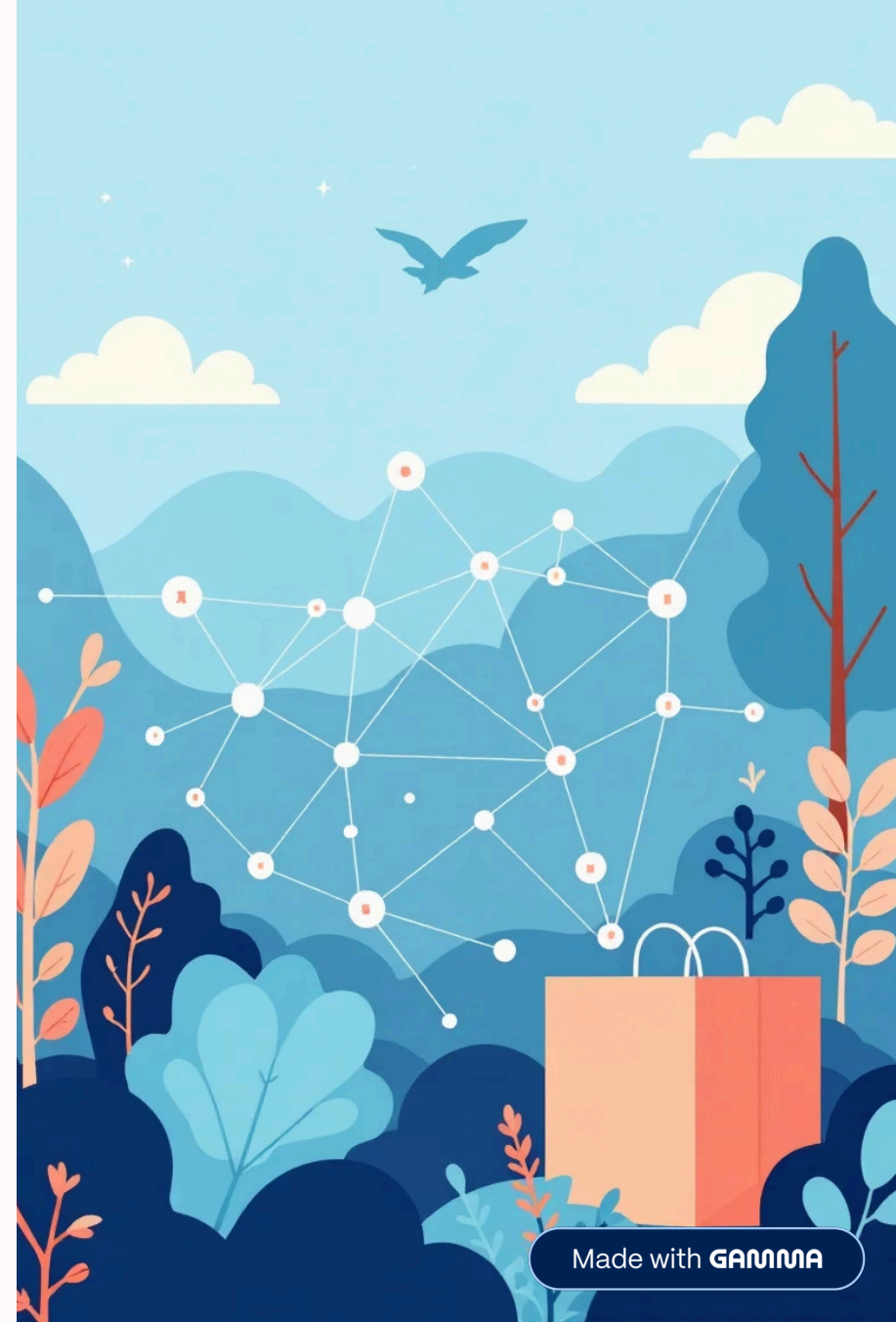# Customer Shopping Behavior Analysis

Uncovering insights from transactional data to drive strategic business decisions.

Project Overview

Goal

Analyze 3,900 purchases for spending patterns, segments, preferences, and subscriptions.

Objective

Guide strategic business decisions with data-driven insights.
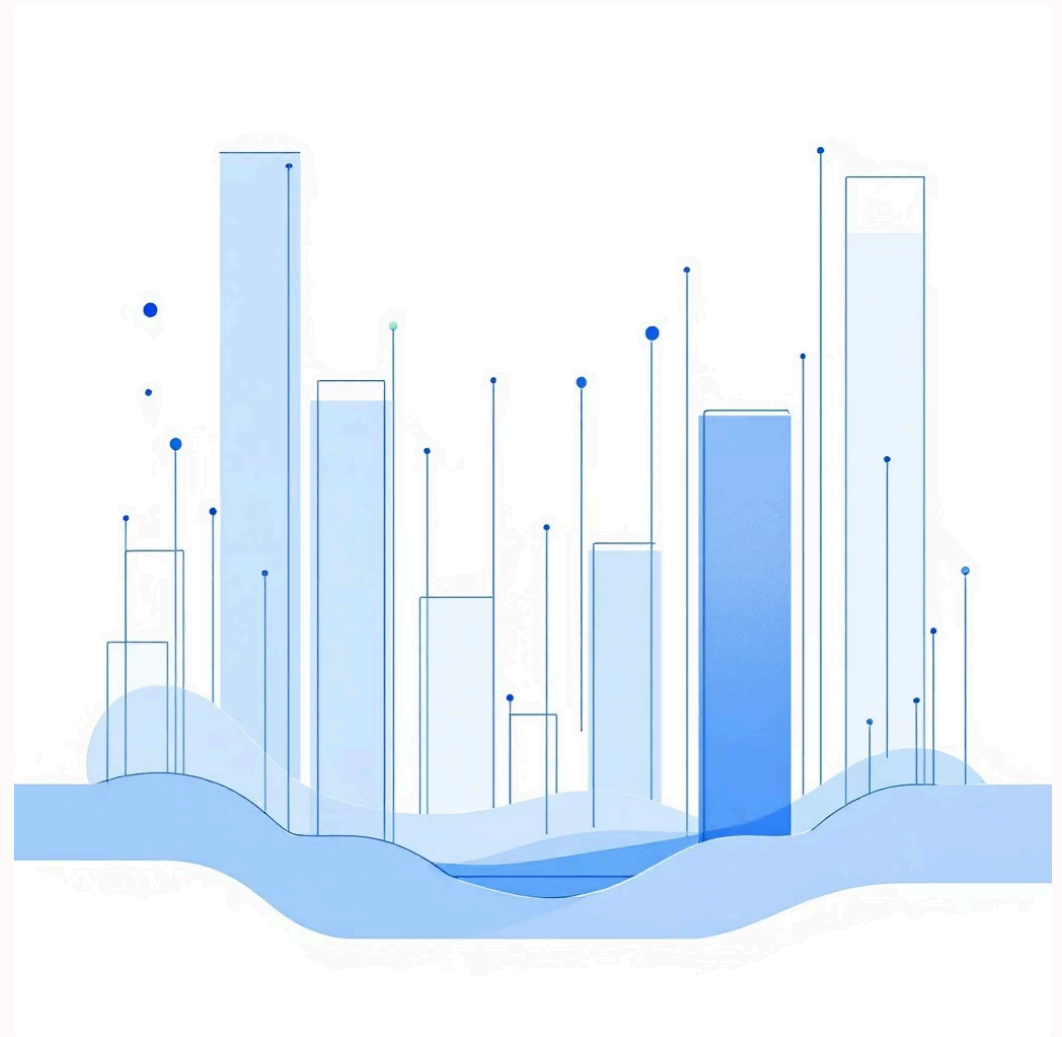
Dataset Summary

Data Points

- 3,900 Rows
- 18 Columns

Key Features

- Customer demographics
- Purchase details
- Shopping behavior

Missing Data

- 37 values in Review Rating

Exploratory Data Analysis (Python)

01
___

Data Preparation

Loading, initial exploration, and cleaning.

02
___

Missing Data Handling

Imputed Review Rating using median per category.
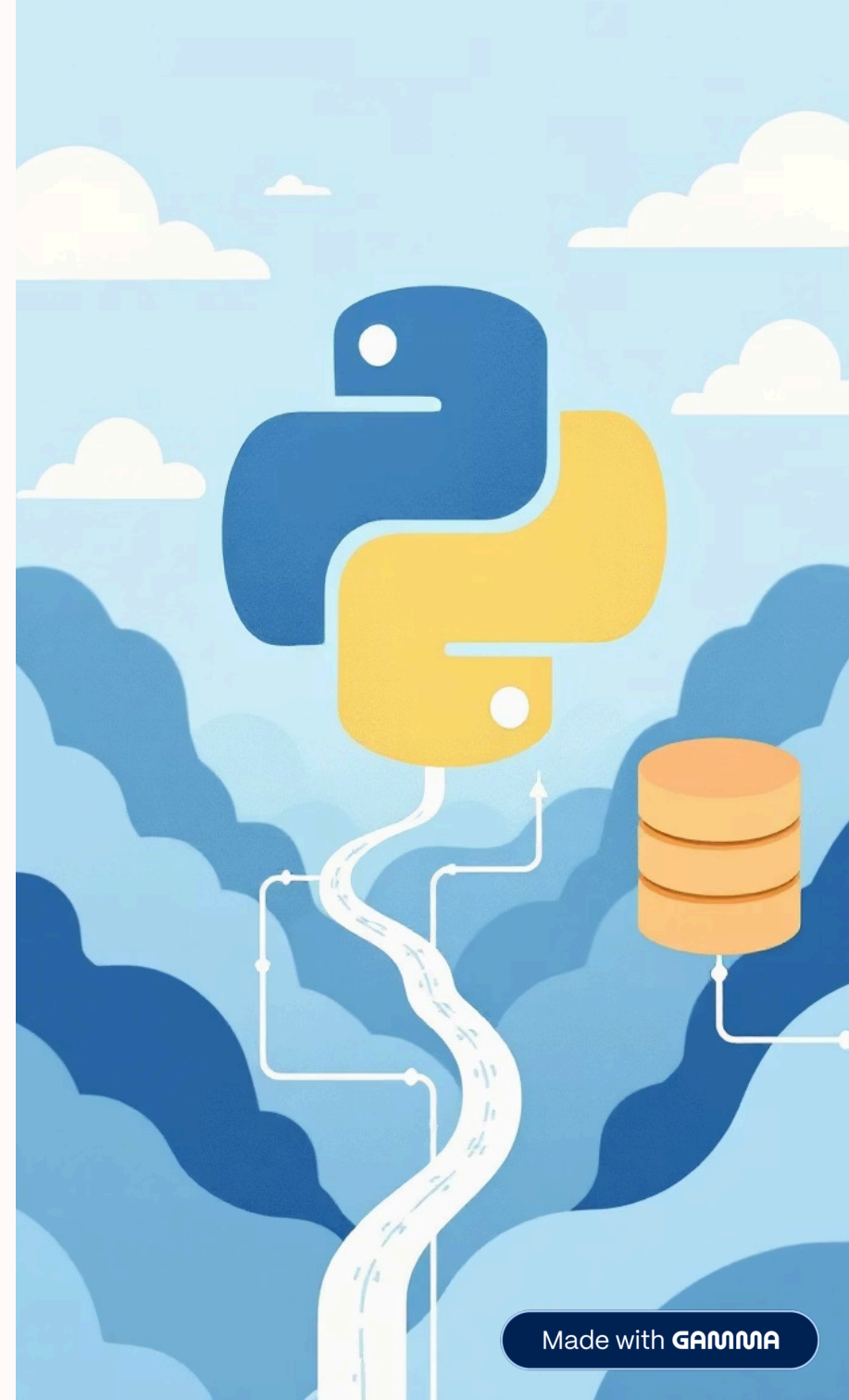
03
___

Feature Engineering

Created age groups and purchase frequency.

04
___

Database Integration

Loaded cleaned data into PostgreSQL for SQL analysis.

Data Analysis (SQL)
Key Business Questions Answered

Revenue by Gender

Male customers generated higher revenue.

Discount Users

Identified high-spending customers using discounts.

Top Products

Gloves, Sandals, Boots had highest average ratings.

Shipping Type

Express shipping users had higher average purchases.

SQL Insights: Subscriptions & Discounts

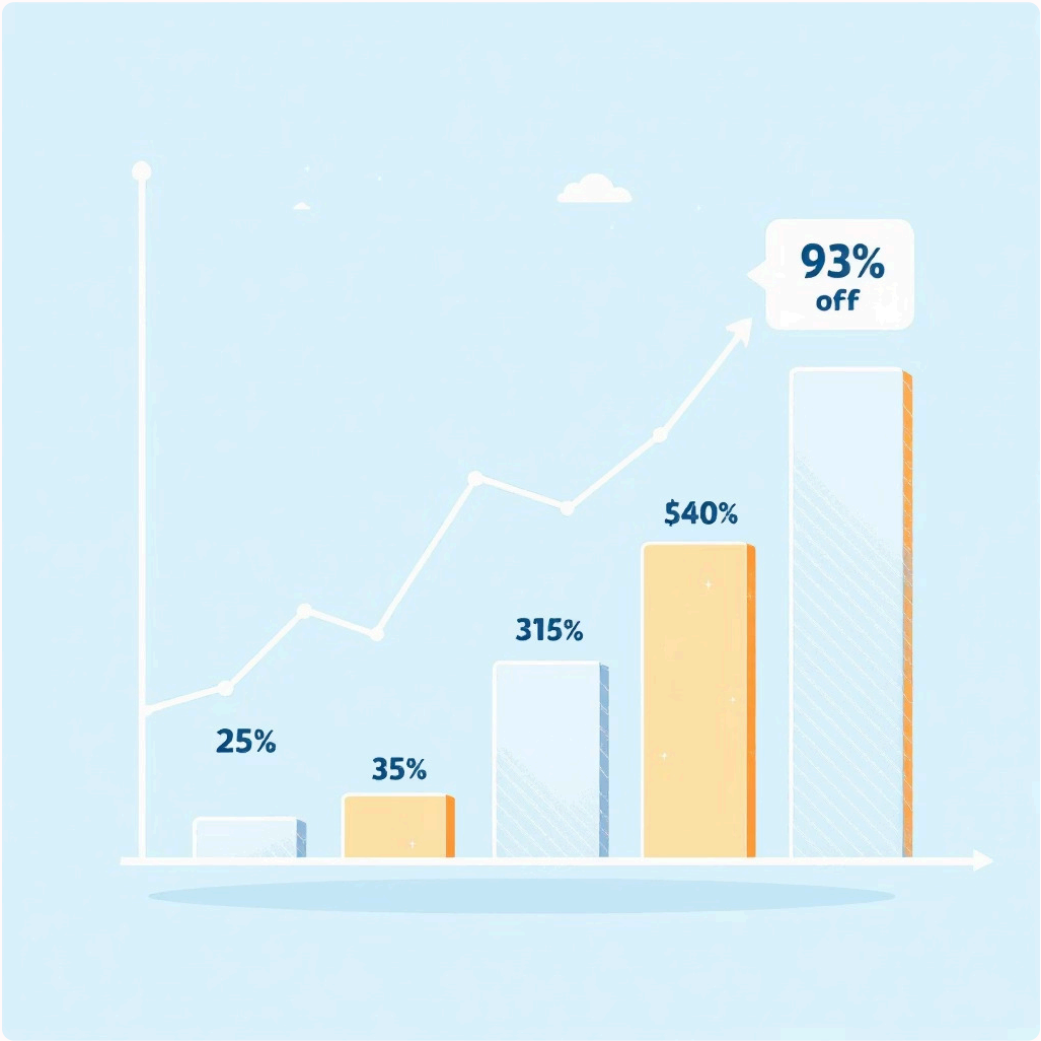## Subscribers vs. Non-Subscribers

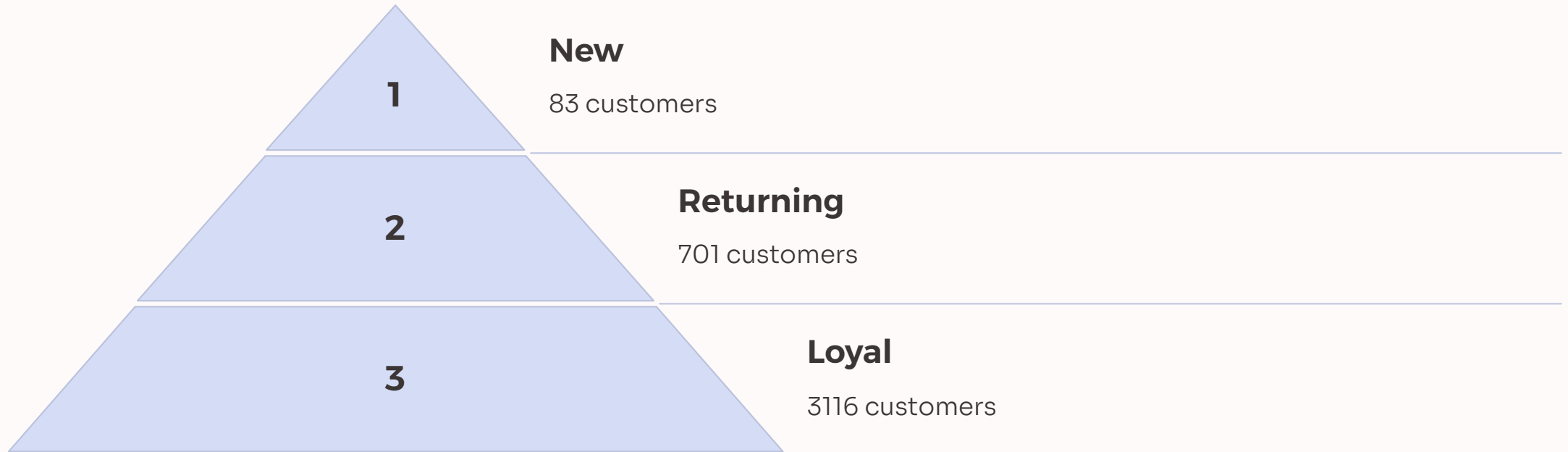Non-subscribers contributed more total revenue.

Yes	62645
No	170436

Discount-Dependent Products

Hat, Sneakers, Coat, Sweater, Pants had highest discount rates.

93% off

$40%

315%

25%

35%

SQL Insights: Customer Segmentation

New
83 customers

Returning
701 customers

Loyal
3116 customers

Customers classified into New, Returning, and Loyal segments based on purchase history.

Made with GAMMA

SQL Insights: Product Performance

1 **Accessories**
- Jewelry
- Sunglasses
- Belt

2 **Clothing**
- Blouse
- Pants
- Shirt

3 **Footwear**
- Sandals
- Shoes
- Sneakers

4 **Outerwear**
- Jacket
- Coat

SQL Insights: Age & Subscriptions

Repeat Buyers & Subscriptions

Customers with >5 purchases are more likely to subscribe.

No	2518
Yes	958

Revenue by Age Group

Young Adults contribute the most revenue.

Business Recommendations

Boost Subscriptions

Promote exclusive benefits.

Customer Loyalty

Reward repeat buyers.

Review Discounts

Balance sales with margins.

Product Positioning

Highlight top-rated items.

Targeted Marketing

Focus on high-revenue groups.

CUSTOMER BEHAVIOUR DASHBOARD