Customer Shopping Behavior Analysis

Uncovering insights from transactional data to guide strategic business decisions.

Project Overview

Transactional Data

3,900 purchases analyzed.

Uncover Insights

Spending patterns, segments, preferences.

Strategic Decisions

Guide business growth.

Dataset Summary

Data Points

- Rows: 3,900
- Columns: 18
- Missing Data: 37 values in Review Rating

Key Features

- Customer demographics
- Purchase details
- Shopping behavior
- Subscription Status

Exploratory Data Analysis (Python)

01

Data Loading

Imported dataset with `pandas`.

02

Initial Exploration

`df.info()` and `.describe()` for structure.

03

Missing Data

Imputed Review Rating using median.

04

Feature Engineering

Created age_group, purchase_frequency_days.

05

Database Integration

Loaded into PostgreSQL for SQL analysis.

SQL Analysis: Revenue & Discounts

Revenue by Gender

Female: $75,191

Male: $157,890

High-Spending Discount Users

839 customers spent above average with discounts.

Discount-Dependent Products

Hat (50%), Sneakers (49.66%), Coat (49.07%).

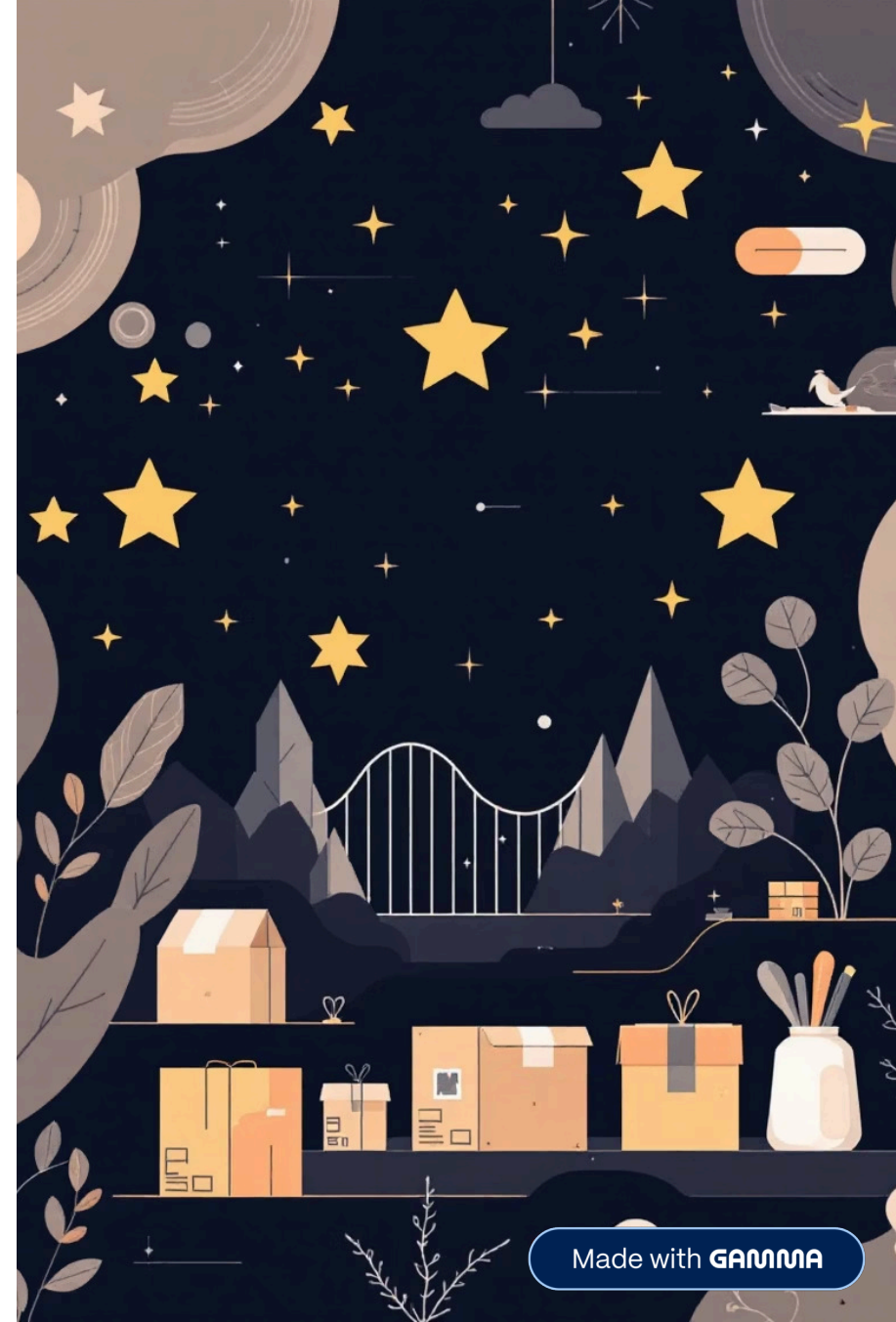# SQL Analysis: Products & Shipping

Top 5 Products by Rating

- Gloves (3.86)
- Sandals (3.84)
- Boots (3.82)

Shipping Type Comparison

Standard: $58.46

Express: $60.48

SQL Analysis: Subscribers & Segments
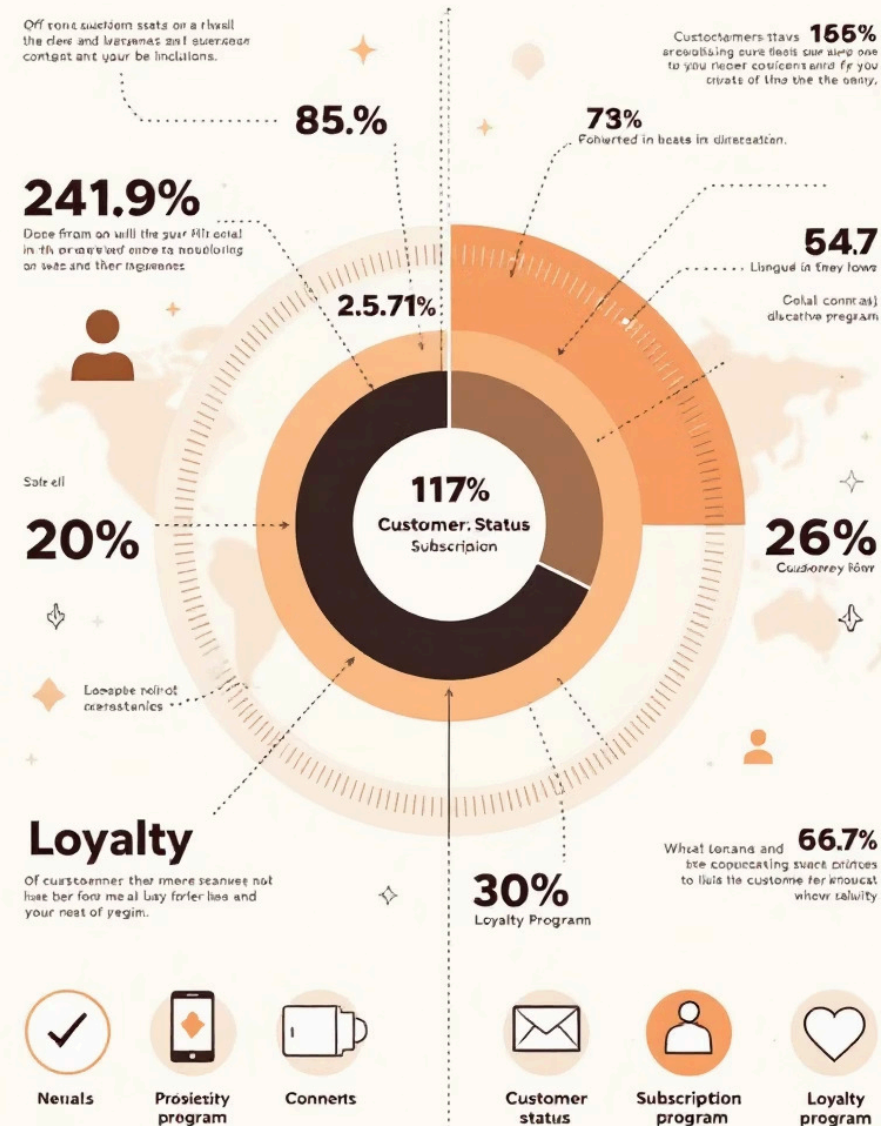
Subscribers vs. Non-Subscribers

Subscribers: 1,053 customers, Avg Spend $59.49

Non-Subscribers: 2,847 customers, Avg Spend $59.87

Customer Segmentation

- Loyal: 3,116
- Returning: 701
- New: 83

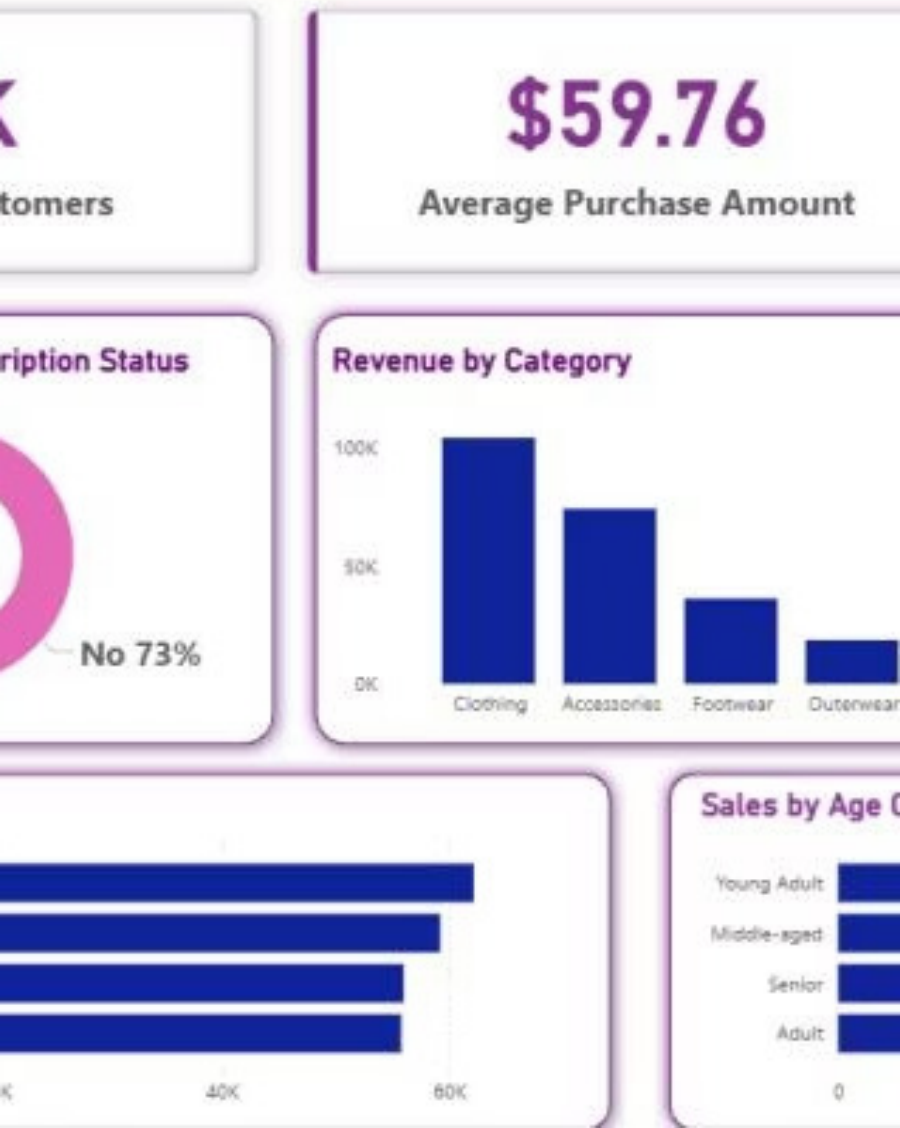# SQL Analysis: Age & Repeat Buyers

Revenue by Age Group

- Young Adult: $62,143
- Middle-aged: $59,197
- Adult: $55,978
- Senior: $55,763

Repeat Buyers & Subscriptions

958 repeat buyers are subscribers.

2,518 repeat buyers are not subscribers.

Power BI Dashboard

Interactive dashboard for visual insights.

Key metrics: 3.9K customers, $59.76 avg purchase, 3.75 avg review rating.

Business Recommendations

Boost Subscriptions

Promote exclusive benefits.

Customer Loyalty

Reward repeat buyers.

Review Discount Policy

Balance sales with margin.

Targeted Marketing

Focus on high-revenue groups.