Customer Analytics: Trends, Preferences, and Revenue

Uncovering shopping behavior patterns to drive strategic business decisions

Understanding Customer Shopping Behavior

Analyzing transaction data to reveal spending trends, product popularity, and customer engagement patterns.
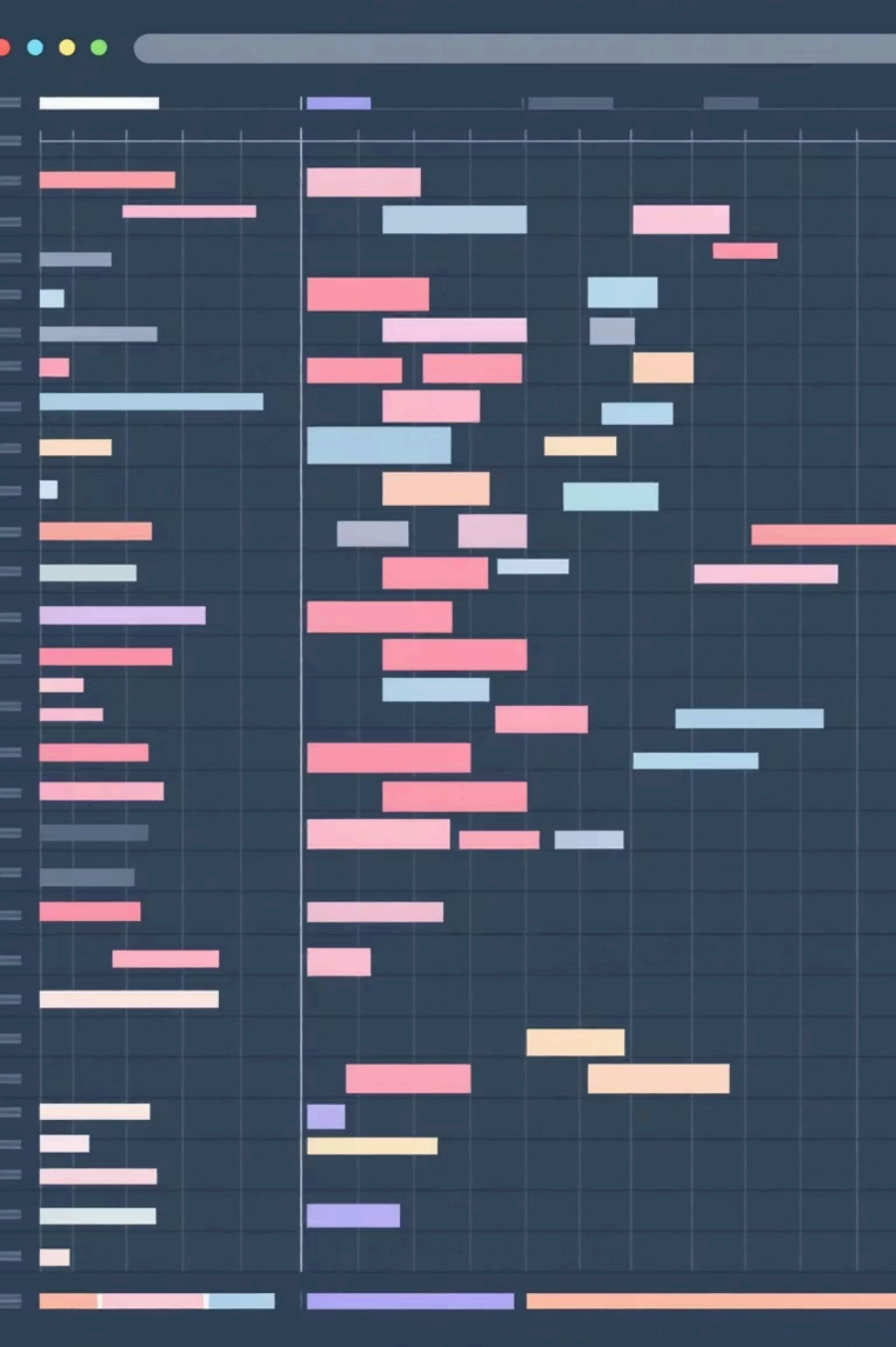
Power BI dashboard delivers actionable insights for marketing strategies and business growth.

3.9K

Customer Records

18

Data Columns

Rich Data Foundation

Demographics

Age, gender, location, subscription status

Transactions

Items, category, amount, season, size, color

Behavior

Discounts, purchase history, ratings, shipping

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Data Cleaning & Preparation

01

Loading & Formatting

Dataset loaded into pandas, columns renamed to snake_case

02

Handling Missing Data

Review ratings filled with median per category

03

Feature Engineering

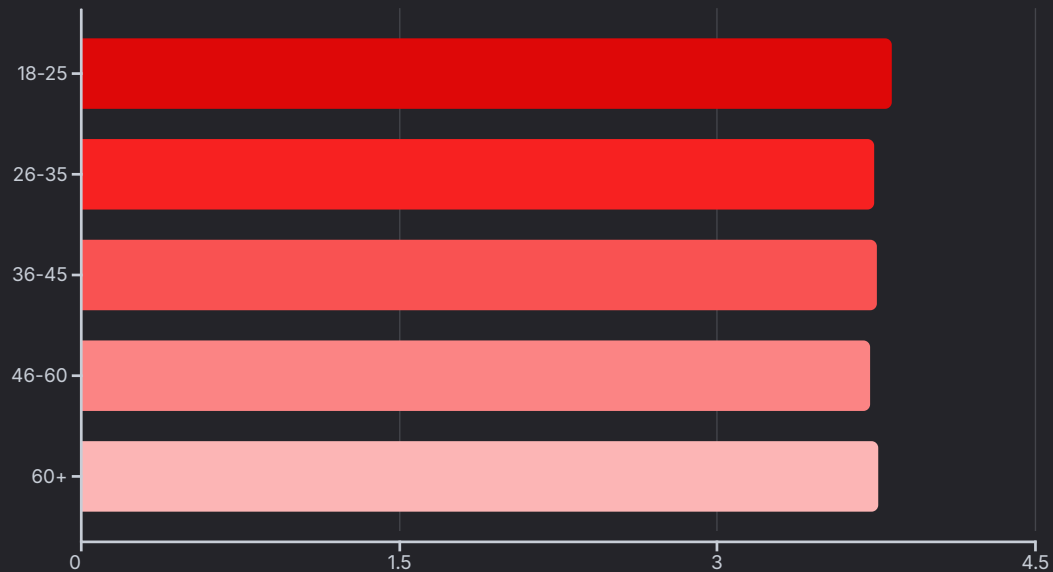Created age_group, spending_segment, purchase_date fields
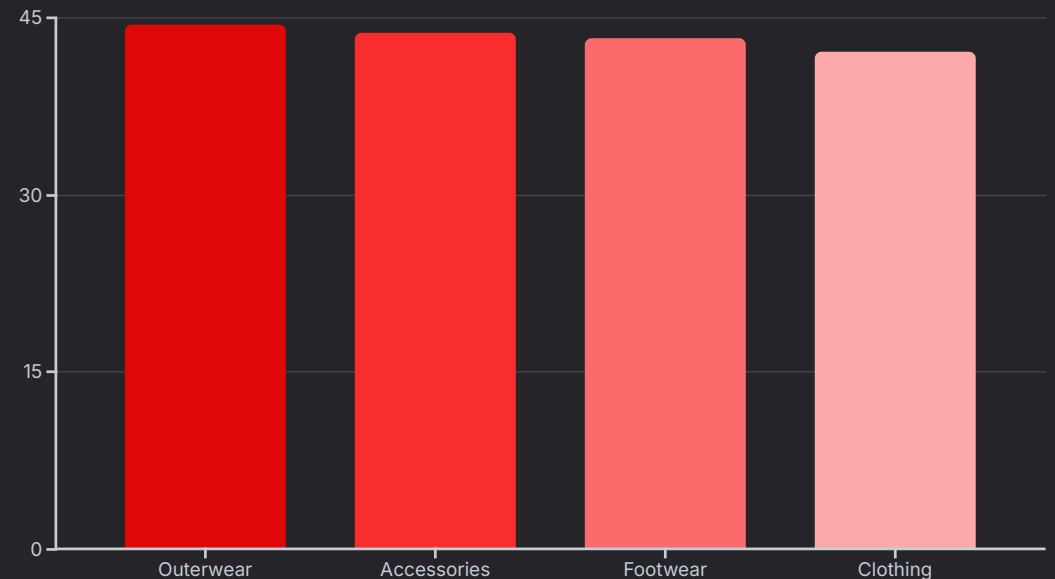
04

Database Upload

Cleaned data loaded to PostgreSQL for SQL analysis

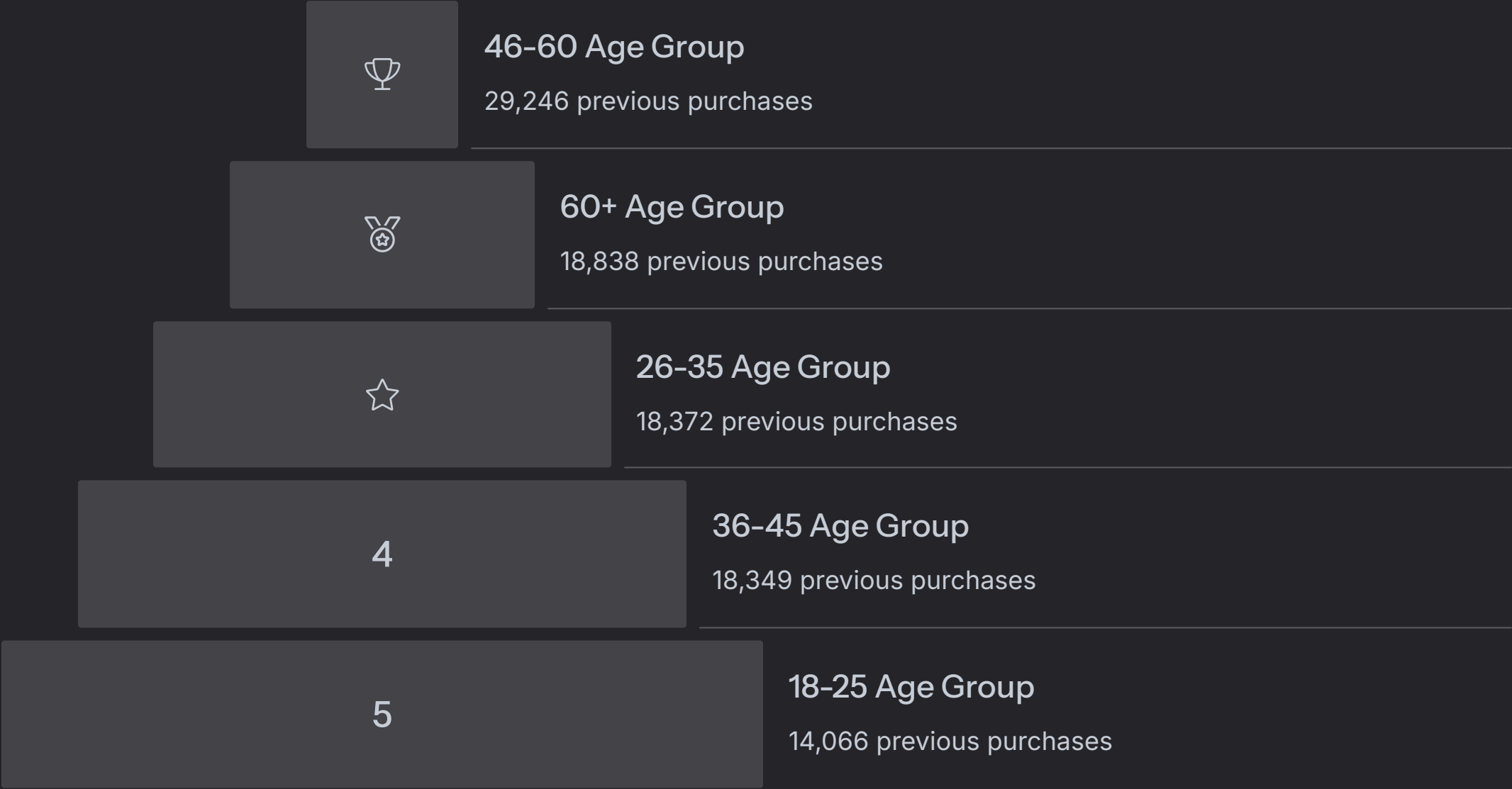# Key Insights from Structured Queries

Average Ratings by Age

Discount Rate by Category

Customer Loyalty Patterns

46-60 Age Group

29,246 previous purchases

60+ Age Group

18,838 previous purchases

26-35 Age Group

18,372 previous purchases

4 **36-45 Age Group**

18,349 previous purchases

5 **18-25 Age Group**

14,066 previous purchases

Middle-aged customers demonstrate highest loyalty and repeat purchase behavior

Gender & Category Spending Patterns

1

Female Shoppers

- Accessories: $60.76 avg
- Clothing: $60.50 avg
- Footwear: $59.47 avg
- Outerwear: $58.43 avg

2

Male Shoppers

- Footwear: $60.65 avg
- Clothing: $59.80 avg
- Accessories: $59.41 avg
- Outerwear: $56.61 avg

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Interactive Dashboard Design

KPI Cards

Total customers, average rating, total revenue

Revenue Charts

Category breakdown and monthly trends

Interactive Filters

Gender, shipping type, category slicers
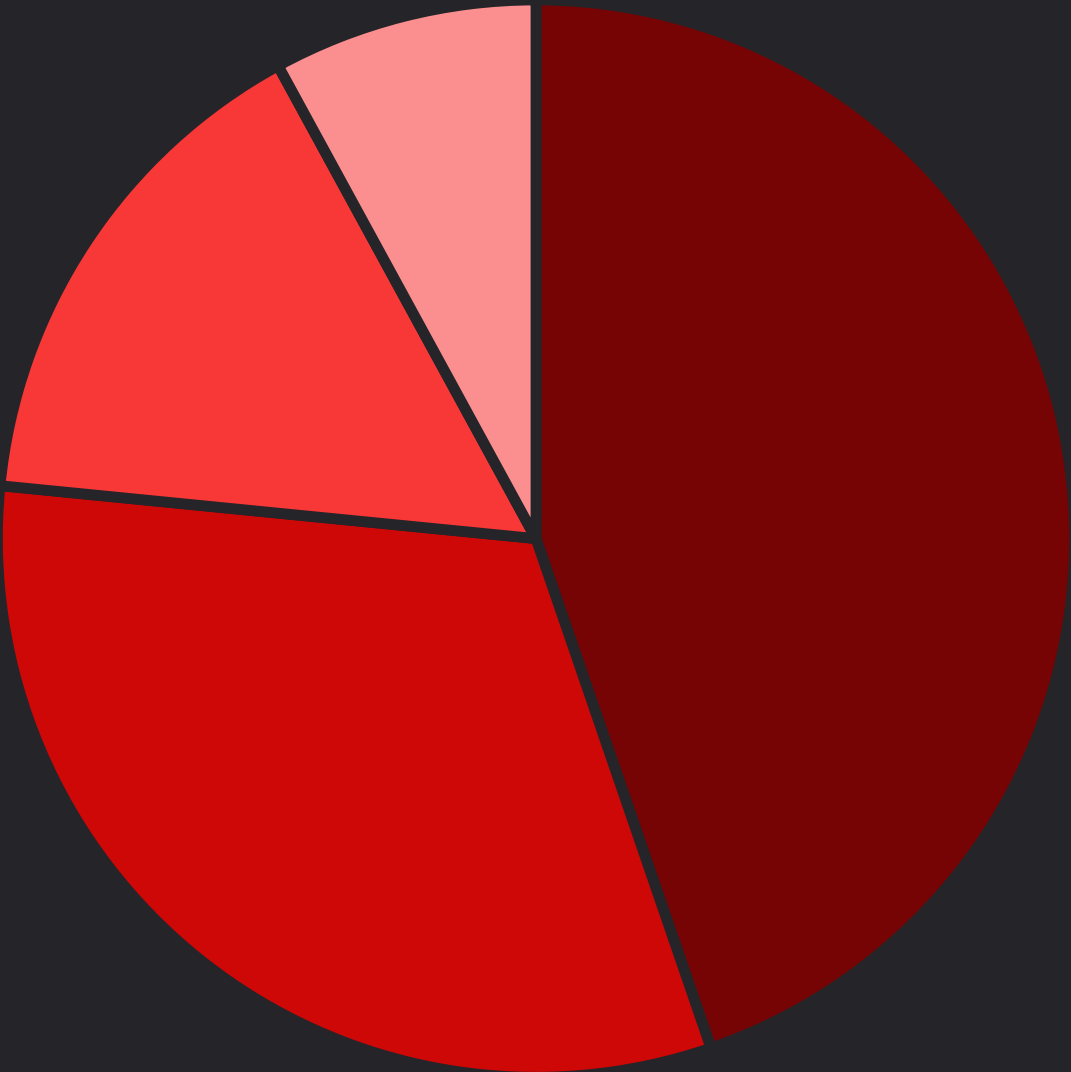
Performance Snapshot

3.9K
Customers

3.75
Avg Rating

$233K
Total Revenue

Revenue by Category

- Clothing
- Accessories
- Footwear
- Outerwear

Clothing and accessories dominate revenue, while footwear and outerwear show growth potential

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Strategic Recommendations

Expand High Performers

Grow clothing & accessories through new lines and bundles

Boost Underperformers
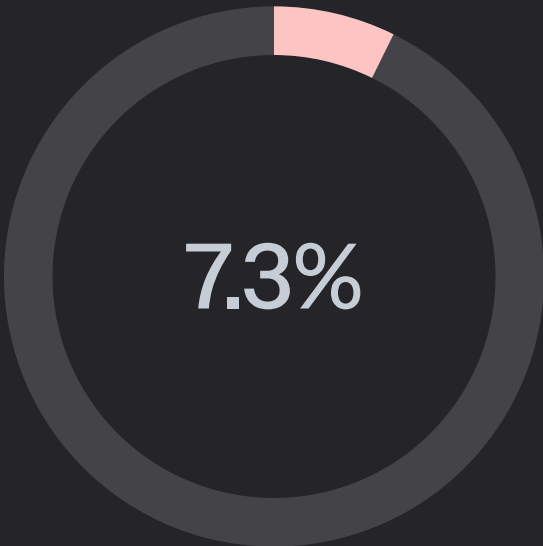
Strategic discounts for footwear and outerwear categories

Time Promotions

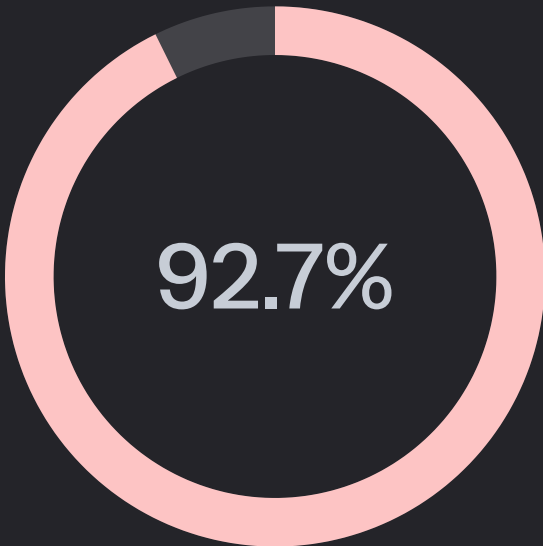Align campaigns with peak discount usage months

Engage Younger Audiences

Target 18-25 segment to expand customer base

7.3%

Subscription Rate

Opportunity for loyalty program growth

92.7%

Non-Subscribers

Untapped potential for engagement

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