

CUSTOMER SALES ANALYSIS

Author: Sakthivel

1. Project Overview

This project analyzes customer sales data to derive insights on purchasing behavior,product performance and revenue drivers. The workflow integrates Python for EDA, MySQL for data transformations, and Power BI for visualization.

2. Tools &Technologies

Technology	Purpose
Python (Pandas)	EDA
MySQL	Data cleaning and transformation
Power BI	Interactive dashboard
Jupyter / VS Code	Development

3. Data Preparation (Python)

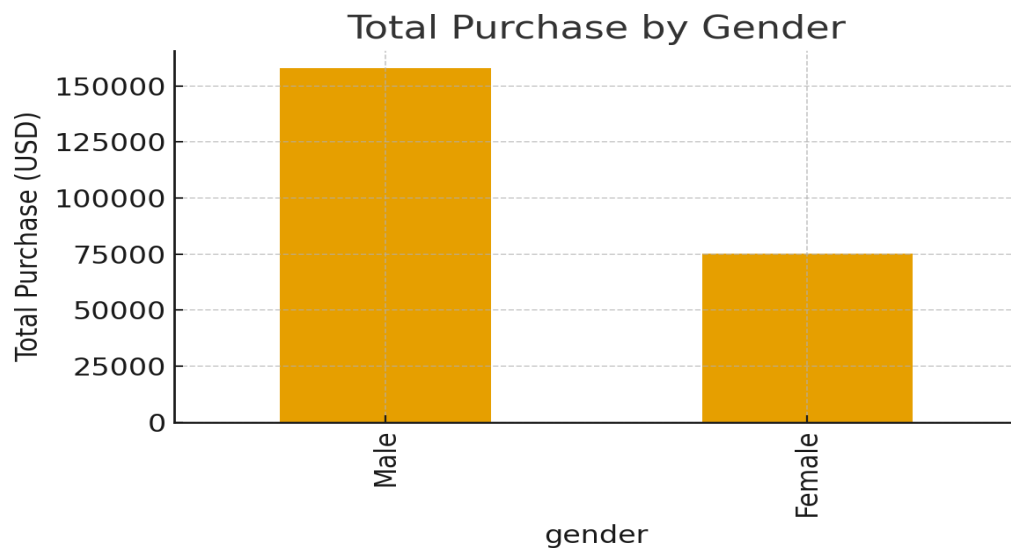
Data cleaning: standardized column names,imputed missing review ratings using category-wise median,created age groups and mapped purchase frequency to days. Final cleaned table uploaded to MySQL for downstream reporting.

4. Key Metrics

Metric	Value
Total Revenue (USD)	233,081.00
Average Purchase Amount (USD)	59.76
Total Orders	3900
Unique Customers	3900
Top Category (by revenue)	Clothing
Top Product (by revenue)	Blouse

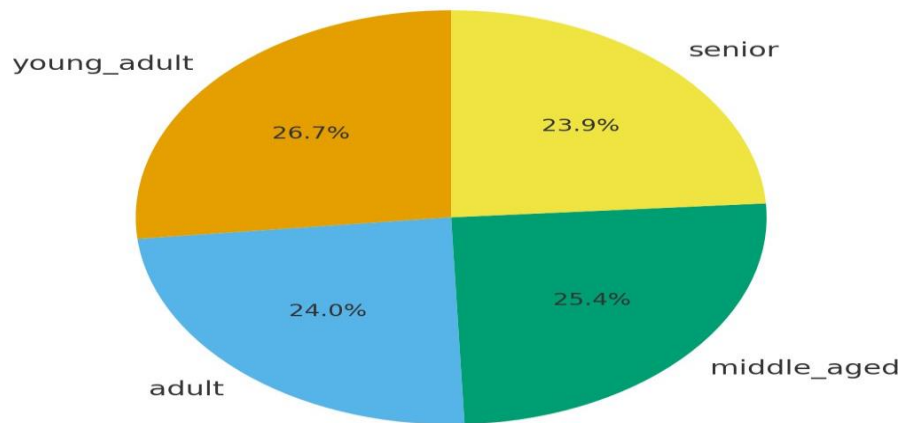
5. Visuals

Total Purchase by Gender

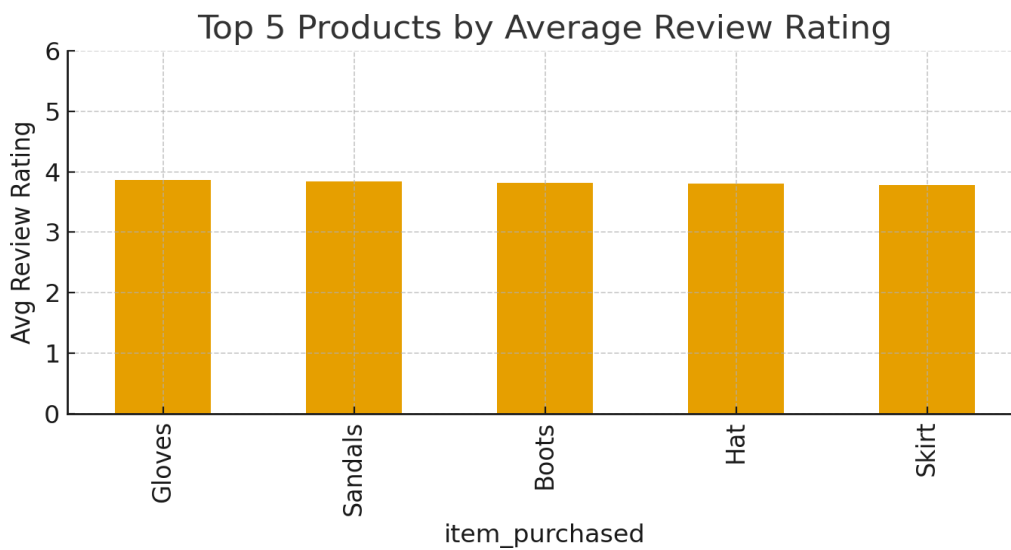


Revenue Contribution by Age Group

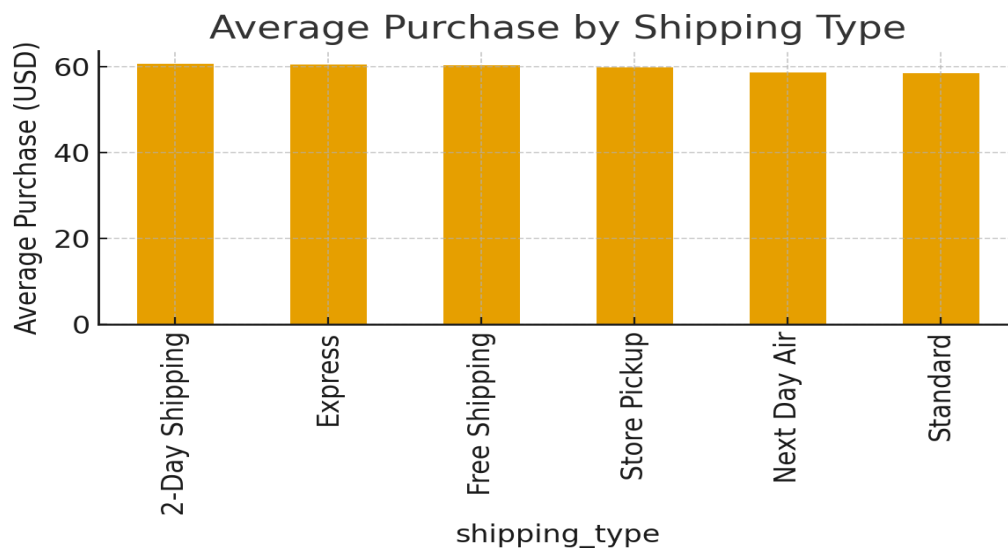
Revenue Contribution by Age Group



Top 5 Products by Average Review Rating



Average Purchase by Shipping Type



6. Key Findings

- Male customers contributed a larger share of revenue (when gender data exists).
- Middle-aged customers contributed the largest revenue portion (when age data exists).
- Top-rated products show strong correlation with revenue performance.
- Subscribers (if applicable) tend to have higher average purchases.

7. Recommendations

- Target marketing to middle-aged and high-value segments for improved ROI.
- Promote subscription or loyalty programs to non-subscribers.
- Prioritize inventory for top-rated, high-selling products.
- Maintain service quality for premium shipping options.

8. Conclusion

This report integrates Python,MySQL and PowerBI to produce actionable business insights.The accompanying Power BI dashboard can be refreshed with the MySQL source for ongoing monitoring.