**Customer Orders Analysis — Step-by-step Report**

**1. Overview**

This document explains, step-by-step, what the analysis code did, shows the outputs, and provides business insights and recommendations.

**2. Dataset (sample)**

Each order is stored as a tuple: (customer, product, price, category). The following orders are used:

John | Laptop | $900.00 | Electronics

John| Headphones | $50.00 | Electronics

Jack | T-Shirt | $25.00 | Clothing

Jack | Jeans | $40.00 | Clothing

Michael | Vacuum Cleaner | $120.00 | Home Essentials

Michael | Laptop | $900.00 | Electronics

Danny | Notebook | $10.00 | Home Essentials

Danny| Pen | $5.00 | Home Essentials

Amy | Smartphone | $700.00 | Electronics

-Amy | Dress | $60.00 | Clothing

**3. Step-by-step: What the code does**

- Store customer orders in a list of tuples and build a customer -> orders dictionary.

- Map products to categories and build a set of unique categories.

- Compute total spending per customer and classify them as High-Value (>100), Moderate (50-100), or Low-Value (<50).

- Sum revenue per category and per product; count product frequency.

- Identify customer segments (electronics buyers, multi-category buyers, etc.) and compute summary metrics.

**4. Results / Outputs**

**4.1 Customer spending & classification:**

Customer | Total Spending ($) | Classification | Orders Count | % of Total Revenue

John | 950.00 | High-Value | 2 | 33.81%

Jack | 65.00 | Moderate | 2 | 2.31%

Michael | 1020.00 | High-Value | 2 | 36.30%

Danny| 15.00 | Low-Value | 2 | 0.53%

Amy | 760.00 | High-Value | 2 | 27.05%

**4.2 Revenue by category:**

Category | Revenue ($) | % of Total Revenue

Clothing | 125.00 | 4.45%

Electronics | 2550.00 | 90.75%

Home Essentials | 135.00 | 4.80%

**4.3 Top products (by revenue):**

Product | Revenue ($) | Frequency | % of Total Revenue

Laptop | 1800.00 | 2 | 64.06%

Smartphone | 700.00 | 1 | 24.91%

Vacuum Cleaner | 120.00 | 1 | 4.27%

Dress | 60.00 | 1 | 2.14%

Headphones | 50.00 | 1 | 1.78%

Jeans | 40.00 | 1 | 1.42%

T-Shirt | 25.00 | 1 | 0.89%

Notebook | 10.00 | 1 | 0.36%

Pen | 5.00 | 1 | 0.18%

**5. Summary metrics**

- Total revenue: $2810.00

- Number of orders: 10

- Number of unique customers: 5

- Average order value (AOV): $281.00

6. **Customer segments and cross-category buyers**

Customers who purchased Electronics: John, Michael, Amy

Customers who purchased from multiple categories: Michael, Amy

Customers who bought both Electronics and Clothing: Amy

**7. Detailed Business Insights & Recommendations**

Electronics account for 90.75% of total revenue ($2550.00 of $2810.00).

Customer concentration: Michael: $1020.00 (36.30%); John: $950.00 (33.81%); Amy: $760.00 (27.05%); Jack: $65.00 (2.31%); Danny: $15.00 (0.53%).

Top product by revenue: Laptop with $1800.00 (64.06%).