Retail Business Performance & Profitability — 2-Page Report (Draft)

Introduction / Abstract

This project analyzes transactional retail data to identify profit-draining categories, optimize inventory, and uncover seasonal patterns.

Tools Used

- SQL (SQLite)
- Python (Pandas)
- Tableau

Steps

1. Loaded CSV → SQLite and removed incomplete rows (missing `InvoiceNo / CustomerID`).
2. Created `Product_Category` using simple keyword rules from product descriptions.
3. Calculated `Revenue = Quantity × UnitPrice` and `Profit = Revenue × 0.40` (assumed 40% margin).
4. Flagged slow-moving items: `SlowMovingFlag = 1 if Quantity < 5 else 0`.
5. Aggregated profitability by `Product_Category` and explored correlation between slow-moving items and profit.

Key Findings (Snapshot)

Profit-draining categories (bottom 5 by TotalProfit):

Product_Category	TotalRevenue	TotalProfit	AvgUnitPrice	ItemsSold	Orders	ProfitMargin_%
Apparel	5721.17	2288.47	1.52888	5474	518	40
Toys & Games	49764.8	19905.9	2.86337	24655	2309	40
Crafts	64834.5	25933.8	2.52837	33307	2432	40
Home Decor	67283.1	26913.2	4.21894	19662	1852	40
Mugs	131417	52566.6	2.31388	85656	3584	40

Most profitable categories (top 5 by TotalProfit):

Product_Category	TotalRevenue	TotalProfit	AvgUnitPrice	ItemsSold	Orders	ProfitMargin_%
Other	6.69657e+06	2.67863e+06	4.80665	3160113	18940	40
Bags	1.11263e+06	445051	2.35022	609772	9005	40
Stationery	666997	266799	1.41715	619306	9041	40
Kitchen & Dining	641069	256428	3.44332	264869	9130	40
Lighting	560877	224351	2.56953	322735	8241	40

Correlation: SlowMovingFlag vs Profit ≈ *computed in notebook* (see README).

Recommendations

- Run clearance or bundles for bottom categories; reassess pricing and supplier terms.
- Increase visibility/promotions for high-margin categories.
- Use demand-based reordering to avoid overstocking slow movers.

Next Actions

- Publish Tableau dashboard with category profitability, seasonal trend, and regional map.
- Iterate the keyword rules to refine `Product_Category` if domain knowledge is available.