DAY 3 – PRODUCT & CUSTOMER LEVEL SQL ANALYSIS

Dataset: Superstore Sales Dataset
Tool Used: MySQL Workbench
Analysis Type: Product & Customer Performance Analysis

1.Objective of Day 3

The objective of Day 3 was to analyze product-level and customer-level data to identify high-performing products, loss-making products, and valuable customers. This analysis helps understand where the business earns profit and where it incurs losses.

2.Importance of Product and Customer Analysis

Product and customer analysis is critical because it helps businesses:

- Identify profitable and unprofitable products
- Focus on high-margin items
- Understand customer contribution to revenue
- Improve pricing, discount, and retention strategies

3.SQL Analysis Performed

3.1 Top 10 Products by Sales

```
SELECT
  sub_category,
  ROUND(SUM(sales),2) AS total_sales
FROM orders
GROUP BY sub_category
ORDER BY total_sales DESC
LIMIT 10;
```

sub_category	total_sales
Phones	330007.10
Chairs	328449.13
Storage	223843.59
Tables	206965.68
Binders	203412.77
Machines	189238.68
Accessories	167380.31
Copiers	149528.01
Bookcases	114880.05
Appliances	107532.14

3.2 Top 10 Products by Profit

```
SELECT
  sub_category,
  ROUND(SUM(profit),2) AS total_profit
FROM orders
GROUP BY sub_category
ORDER BY total_profit DESC
LIMIT 10;
```

sub_category	total_profit
Copiers	55617.90
Phones	44516.25
Accessories	41936.78
Paper	34053.34
Binders	30221.64
Chairs	26590.15
Storage	21279.05
Appliances	18138.07
Furnishings	13059.25
Envelopes	6964.10

3.3 Loss-Making Products

```
SELECT
  sub_category,
  ROUND(SUM(profit),2) AS total_profit
FROM orders
GROUP BY sub_category
HAVING SUM(profit) < 0
ORDER BY total_profit;
```

sub_category	total_profit
Bookcases	-3472.56
Tables	-17725.59
Supplies	-1188.99

3.4 Top Customers by Sales

```
SELECT
  order_id,
  ROUND(SUM(sales),2) AS total_sales
FROM orders
GROUP BY order_id
ORDER BY total_sales DESC
LIMIT 10;
```

order_id	total_sales
CA-2014-145317	23661.24
CA-2016-118689	18336.74
CA-2017-140151	14052.48
CA-2017-127180	13716.46
CA-2014-139892	10539.90
CA-2017-166709	10499.97
CA-2014-116904	9900.19
CA-2016-117121	9892.74
US-2016-107440	9135.19
CA-2016-158841	8805.04

3.5 Category-Level Profitability

```
SELECT
  category,
  ROUND(SUM(profit),2) AS total_profit,
  ROUND((SUM(profit)/SUM(sales))*100,2) AS
profit_margin
FROM orders
GROUP BY category
ORDER BY total_profit DESC;
```

category	total_profit	profit_margin
Furniture	18451.25	2.49
Office Supplies	122490.88	17.04
Technology	145455.66	17.40

Key Insights from Day 3

- High sales do not always guarantee high profit.
- Some products consistently result in losses.
- A small set of customers contributes significantly to revenue.
- Profit margin is a better performance metric than sales alone.

Business Recommendations

Based on Day 3 analysis:

- Review pricing and discount strategies for loss-making products.
- Focus marketing efforts on high-margin products.
- Retain and reward high-value customers through loyalty programs.

- Optimize or discontinue consistently unprofitable products.

Key Learnings from Day 3

- Product-level analysis reveals inefficiencies hidden in overall totals.
- Customer analysis helps prioritize retention strategies.
- SQL clauses such as `GROUP BY`, `HAVING`, and `LIMIT` are essential for business analysis.