Superstore Sales Analysis

Analyzing Retail Performance through SQL-Driven Insights

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CONTENTS

Project Overview

This project focuses on analyzing Superstore retail sales data using MySQL to gain actionable business insights.

1. Examine overall sales and profit performance.
2. Identify top and low-performing regions and product categories.
3. Analyze customer behavior, order patterns, and best-selling items.
4. Generate insights to optimize pricing, inventory, and marketing strategies.

Database Design

Entity Relationship (ER) View:

The database contains one main fact table linked with several dimensions such as:

Orders: *Includes Order ID, Order Date, Customer, Region, and Segment.*

Products: *Covers Product Name, Category, and Sub-Category.*

Sales Metrics: *Consists of Sales, Quantity, Discount, and Profit.*

*This structure supports **trend analysis**, **profitability tracking**, and **segmentation-based insights.***

superstore

- Row ID INT
- Order ID TEXT
- Order Date TEXT
- Ship Date TEXT
- Ship Mode TEXT
- Customer ID TEXT
- Customer Name TE...
- Segment TEXT
- Country TEXT
- City TEXT
- State TEXT
- Postal Code INT
- Region TEXT
- Product ID TEXT
- Category TEXT
- Sub-Category TEXT
- Product Name TEXT
- Sales DOUBLE
- Quantity INT
- Discount DOUBLE
- Profit DOUBLE

Schema Details

superstore (Row ID : int , Order ID : text, Order Date : text, Ship Date : text, Ship Mode : text, Customer ID : text, Customer Name : text, Segment : text, Country : text, City : text, State : text, Postal Code : int, Region : text, Product ID :text, Category : text, Sub Category : text, Product Name : text, Sales : double, Quantity : int, Discount : double, Profit : double)

Query Execution

Fetch the total count of records

```
10      -- Total record count
11
12  •   SELECT COUNT(*) AS Total_Records
13      FROM superstore;
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:

	Total_Records
▶	9694

Category-wise totals of sales, quantity, and profit

```
63      -- Total Sales, Quantiy and Profit
64
65  •   SELECT category, ROUND(SUM(sales),2) AS Total_Sales,
66          SUM(Quantity) AS Total_Quantity,
67          ROUND(SUM(Profit),2) AS Total_Profit
68      FROM superstore
69      GROUP BY Category
70      ORDER BY Total_Sales DESC, Total_Quantity DESC, Total_Profit DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: ‡A

category	Total_Sales	Total_Quantity	Total_Profit
Technology	835900.07	6904	145387.1
Furniture	733046.86	7855	16980.77
Office Supplies	703502.93	21990	120489.89

Query Execution

Region-wise performance in terms of sales, quantity, and profit

```
72      -- Region wise Total Sales, Total Quantity and Total Proft
73
74 •    SELECT Region,
75            ROUND(SUM(Sales),2) AS Total_Sales,
76            SUM(quantity) AS Total_Quantity,
77            ROUND(SUM(Profit),2) AS Total_Profit
78      FROM superstore
79      GROUP BY Region
80      ORDER BY Total_Sales DESC, Total_Quantity DESC, Total_Profit DESC;
81
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Region	Total_Sales	Total_Quantity	Total_Profit
West	713471.34	11845	106021.15
East	672194.05	10281	90672.01
Central	497800.87	8546	40128.9
South	388983.59	6077	46035.69

Query Execution

Total sales, quantity, and profit for each ship mode

```
82      -- Ship Mode wise Total Sales, Total Quantity and Total Profit
83
84  •   SELECT `Ship Mode`,
85             ROUND(SUM(Sales),2) AS Total_Sales,
86             SUM(Quantity) AS Total_Quantity,
87             ROUND(SUM(Profit),2) AS Total_Profit
88      FROM superstore
89      GROUP BY `Ship Mode`
90      ORDER BY Total_Sales DESC, Total_Quantity DESC, Total_Profit DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Ship Mode	Total_Sales	Total_Quantity	Total_Profit
Standard Class	1342260.19	22078	161547.78
Second Class	453341.85	7186	56505.74
First Class	349494.85	5571	48778.85
Same Day	127352.97	1914	16025.38

Query Execution

Total sales, quantity, and profit for each segment

```sql
92      -- Customer Segment wise Total Sales, Total Quantity and Total Profit
93
94 •    SELECT Segment,
95             ROUND(SUM(Sales),2) AS Total_Sales,
96             SUM(Quantity) AS Total_Quantity,
97             ROUND(SUM(Profit),2) AS Total_Profit
98      FROM superstore
99      GROUP BY Segment
100     ORDER BY Total_Sales DESC,Total_Quantity DESC, Total_Profit DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Segment	Total_Sales	Total_Quantity	Total_Profit
Consumer	1150166.18	18954	132669.78
Corporate	696604.51	11231	90366.3
Home Office	425679.16	6564	59821.68

Annual sales, quantity sold, and profit trends

```sql
102     -- Yearly Total Sales, Total Quantity and Total Profit
103
104 •   SELECT Year(STR_TO_DATE(`Order Date`, '%d-%m-%Y')) AS Order_Year,
105         ROUND(SUM(Sales),2) AS Total_Sales,
106         SUM(Quantity) AS Total_Quantity,
107         ROUND(SUM(Profit),2) AS Total_Profit
108     FROM superstore
109     GROUP BY Year(STR_TO_DATE(`Order Date`, '%d-%m-%Y'))
110     ORDER BY Order_Year;
111
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Order_Year	Total_Sales	Total_Quantity	Total_Profit
2011	481763.8	7414	49044.43
2012	464426.24	7777	60907.69
2013	600533.49	9480	80062.41
2014	725726.33	12078	92843.23

Query Execution

Monthly sales, quantity sold, and profit trends

```
122        -- Monthly Total Sales, Total Quantity and Total Profit
123
124   •  SELECT MONTHNAME(STR_TO_DATE(`Order Date`, '%d-%m-%Y')) AS Month,
125           ROUND(SUM(Sales),2) AS Total_Sales,
126           SUM(Quantity) AS Total_Quantity,
127           ROUND(SUM(Profit),2) AS Total_Profit
128     FROM superstore
129     GROUP BY MONTH(STR_TO_DATE(`Order Date`, '%d-%m-%Y')),
130             MONTHNAME(STR_TO_DATE(`Order Date`, '%d-%m-%Y'))
131     ORDER BY MONTH(STR_TO_DATE(`Order Date`, '%d-%m-%Y'));
132
```

| Result Grid | | Filter Rows: | Export: | Wrap Cell Content: |

Month	Total_Sales	Total_Quantity	Total_Profit
January	94980.44	1447	9197.5
February	59434.22	1031	10185.42
March	197966.76	2427	26568.5
April	139476.8	2365	13088.72
May	154606.78	2785	22188.43
June	145403.37	2548	20930.3
July	147966.59	2635	13033.13
August	158187.64	2741	21664.18
September	305670.54	4868	36393.75
October	195218.5	3001	31381.02
November	345526.92	5602	35179.82
December	328011.29	5299	43047

Query Execution

Sales & profit for each product category & sub-category

```
135 •    SELECT Category,
136            `Sub-Category`,
137            ROUND(SUM(Sales),2) AS Total_Sales,
138            ROUND(SUM(Profit),2) AS Total_Profit
139      FROM superstore
140      GROUP BY Category,`Sub-Category`
141      ORDER BY Total_Sales DESC,Total_Profit DESC;
142
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Category	Sub-Category	Total_Sales	Total_Profit
Technology	Phones	329753.09	44447.88
Furniture	Chairs	328449.1	26590.17
Office Supplies	Storage	216803.21	21527.91
Furniture	Tables	206965.53	-17725.48
Office Supplies	Binders	199905.72	29983.02
Technology	Machines	189238.63	3384.76
Technology	Accessories	167380.32	41936.64
Technology	Copiers	149528.03	55617.82
Furniture	Bookcases	114880	-3472.56
Office Supplies	Appliances	107532.16	18138.01
Furniture	Furnishings	82752.23	11588.64
Office Supplies	Paper	75356.12	32712.17
Office Supplies	Supplies	45952.47	-1348.57
Office Supplies	Art	27118.79	6527.79
Office Supplies	Envelopes	15339.49	6460.87
Office Supplies	Labels	12486.31	5546.25
Office Supplies	Fasteners	3008.66	942.44

Top 5 best-selling products by sales value


```sql
145 •    SELECT `Product Name`,
146             ROUND(SUM(Sales),2) AS Total_Sales
147      FROM superstore
148      GROUP BY `Product Name`
149      ORDER BY Total_Sales DESC
150      Limit 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA | Fetch rows:

Product Name	Total_Sales
▶ Canon imageCLASS 2200 Advanced Copier	61599.82
Fellowes PB500 Electric Punch Plastic Comb Bind...	27453.38
Cisco TelePresence System EX90 Videoconferen...	22638.48
HON 5400 Series Task Chairs for Big and Tall	21870.58
GBC DocuBind TL300 Electric Binding System	19823.48

Lowest 5 Products Based on Sales Value

```sql
154 ●    SELECT `Product Name`,
155              ROUND(SUM(Sales),2) AS Total_Sales
156      FROM superstore
157      GROUP BY `Product Name`
158      ORDER BY Total_Sales
159      Limit 5;
160
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Product Name	Total_Sales
Eureka Disposable Bags for Sanitaire Vibra Groo...	1.62
Avery 5	5.76
Xerox 20	6.48
Grip Seal Envelopes	7.07
Avery Hi-Liter Pen Style Six-Color Fluorescent Set	7.7

Top 5 Most Profitable Products


```
163 •    SELECT `Product Name`,
164              ROUND(SUM(Profit),2) AS Total_Profit
165      FROM superstore
166      GROUP BY `Product Name`
167      ORDER BY Total_Profit DESC
168      LIMIT 5;
169
```

Product Name	Total_Profit
Canon imageCLASS 2200 Advanced Copier	25199.93
Fellowes PB500 Electric Punch Plastic Comb Bind...	7753.04
Hewlett Packard LaserJet 3310 Copier	6983.88
Canon PC1060 Personal Laser Copier	4570.93
HP Designjet T520 Inkjet Large Format Printer -...	4094.98

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Query Execution

Least Profitable 5 Products

```
172 •    SELECT `Product Name`,
173              ROUND(SUM(Profit),2) AS Total_Profit
174      FROM superstore
175      GROUP BY `Product Name`
176      ORDER BY Total_Profit
177      LIMIT 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Product Name	Total_Profit
Cubify CubeX 3D Printer Double Head Print	-8879.97
Lexmark MX611dhe Monochrome Laser Printer	-4589.97
Cubify CubeX 3D Printer Triple Head Print	-3839.99
Chromcraft Bull-Nose Wood Oval Conference T...	-2876.12
Bush Advantage Collection Racetrack Conferen...	-1934.4

Product Category vs. Profit Margin

```
182  •      SELECT Category,
183                ROUND(SUM(Sales),2) AS Total_Sales,
184                ROUND(SUM(Profit),2) AS Total_Profit,
185                ROUND(SUM(Profit)*100.0/SUM(Sales),2) AS Profit_Margin
186         FROM superstore
187         GROUP BY Category
188         ORDER BY Profit_Margin DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Category	Total_Sales	Total_Profit	Profit_Margin
▶ Technology	835900.07	145387.1	17.39
Office Supplies	703502.93	120489.89	17.13
Furniture	733046.86	16980.77	2.32

Loss-Making Product Names

```
228
229 ●    SELECT `Product Name`,
230           ROUND(SUM(Profit),2) AS Total_Profit
231      FROM superstore
232      GROUP BY `Product Name`
233      HAVING SUM(Profit) < 0
234      ORDER BY Total_Profit;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Product Name	Total_Profit
Cubify CubeX 3D Printer Double Head Print	-8879.97
Lexmark MX611dhe Monochrome Laser Printer	-4589.97
Cubify CubeX 3D Printer Triple Head Print	-3839.99
Chromcraft Bull-Nose Wood Oval Conference T...	-2876.12
Bush Advantage Collection Racetrack Conferen...	-1934.4
GBC DocuBind P400 Electric Binding System	-1878.17
Cisco TelePresence System EX90 Videoconferen...	-1811.08
Martin Yale Chadless Opener Electric Letter Ope...	-1299.18
Balt Solid Wood Round Tables	-1201.06
BoxOffice By Design Rectangular and Half-Moo...	-1148.44
Riverside Furniture Oval Coffee Table, Oval En...	-1147.4

Insights

- *Total Quantity sold: 9694*

- *Top-Performing Region: West*

- *Top-Performing Ship Mode: Standard Class*

- *Top-Performing Segment: Consumer*

- *Best Performing Year: 2014*

- *Highest Monthly Sales: November*

- *Top profitable category: Technology*

- *Profit Growth Trend: July, 2013*

- *Loss-Making Products: 3D Printer Double Head Print*

- *Top Profitable product:*

  ➤ *Canon image CLASS 2200 Advanced Copier*
  ➤ *Fellowes PB500 Electric Punch Plastic Comb Binding Machine with Manual Bind*
  ➤ *Hewlett Packard LaserJet 3310 Copier*

Conclusion

- *Designed and implemented a **MySQL database** to efficiently manage and analyze supermarket sales data.*

- *Derived key insights using **SQL queries** on sales, profit, regions, and customer segments.*

- *Improved understanding of **business performance, profit margins,** and **discount impacts** through data-driven analysis.*

- *Future scope includes adding **real-time tracking, predictive analytics,** and **customer behavior insights** for deeper analysis.*

THANK YOU