BLINKIT SALES PERFORMANCE ANALYSIS

Project Overview

- This project focuses on conducting a comprehensive sales performance analysis for Blinkit using SQL for data preparation.
- The goal is to evaluate key business metrics related to sales, customer ratings, and outlet performance to identify trends, patterns, and areas of improvement.
- The project emphasizes data cleaning, KPI computation, and data-driven decision-making, providing a solid analytical foundation for business optimization.

Business Requirements

1. Evaluate total and average sales across different categories.

2. Understand the influence of item characteristics such as fat content and item type on sales.

3. Analyze outlet performance based on establishment year, size, location, and type.

4. Measure customer satisfaction using product ratings.

Granular Objectives

- **Total Sales by Fat Content:** Analyze how the fat content of items impacts sales and related KPIs (Average Sales, Number of Items, Average Rating).

- **Total Sales by Item Type:** Identify top-performing item categories.

- **Fat Content by Outlet:** Compare total sales segmented by outlet and item fat content.

- **Total Sales by Outlet Establishment Year:** Evaluate how outlet age influences sales performance.

- **Percentage of Sales by Outlet Size:** Understand the contribution of each outlet size to overall sales.

- **Sales by Outlet Location:** Assess the geographic distribution of sales across locations.

- **All Metrics by Outlet Type:** Combine all KPIs to present a complete view of outlet performance.

Dataset Description

The dataset, named `blinkit_data`, contains transactional and categorical data from Blinkit's retail operations. Key fields include:

- **Item_Fat_Content** – Indicates whether an item is *Low Fat* or *Regular*.

- **Item_Type** – Type/category of the product.

- **Outlet_Establishment_Year** – Year the outlet was established.

- **Outlet_Size** – Categorical variable representing outlet size (Small, Medium, Large).

- **Outlet_Location_Type** – Geographic classification of the outlet (Urban, Semi-Urban, Rural).

- **Outlet_Type** – Business type (e.g., Supermarket Type 1, Grocery Store).

- **Total_Sales** – Total revenue from item sales.

- **Rating** – Average customer rating for each item.

- **Item_Visibility** – Visibility score of an item within the store.

Data Cleaning & Preparation

Before analysis, the dataset required cleaning to ensure data consistency, particularly in the `Item_Fat_Content` field.

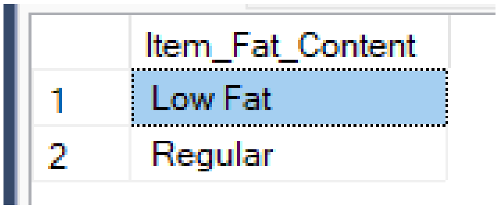
Variations such as `'LF'`, `'low fat'`, and `'reg'` were standardized for accurate grouping and aggregation.

```
UPDATE blinkit_data

SET Item_Fat_Content =

   CASE

      WHEN Item_Fat_Content IN ('LF', 'low fat') THEN 'Low Fat'

      WHEN Item_Fat_Content = 'reg' THEN 'Regular'

      ELSE Item_Fat_Content

   END;
```

Validation was done using:

```
SELECT DISTINCT Item_Fat_Content FROM blinkit_data;
```

This step ensured a uniform data structure for reliable KPI computation and visualization.

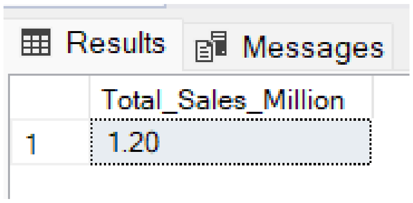


	Item_Fat_Content
1	Low Fat
2	Regular

SQL Implementation & Logic Summary

TOTAL SALES:

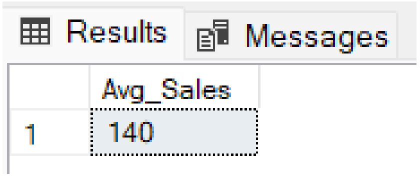
```
SELECT CAST(SUM(Total_Sales) / 1000000.0 AS DECIMAL(10,2)) AS
Total_Sales_Million
FROM blinkit_data;
```



	Total_Sales_Million
1	1.20

AVERAGE SALES

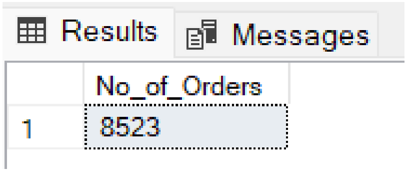
```
SELECT CAST(AVG(Total_Sales) AS INT) AS Avg_Sales
FROM blinkit_data;
```



	Avg_Sales
1	140

NO OF ITEMS

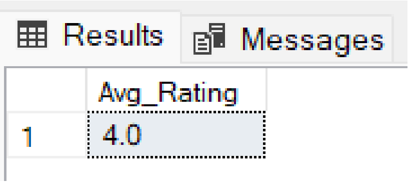
```
SELECT COUNT(*) AS No_of_Orders
FROM blinkit_data;
```



	No_of_Orders
1	8523

AVG RATING

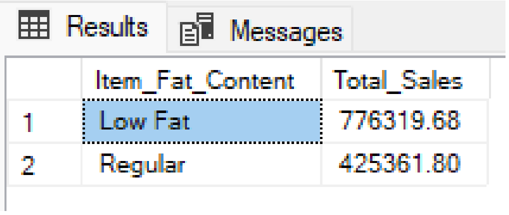
```
SELECT CAST(AVG(Rating) AS DECIMAL(10,1)) AS Avg_Rating
FROM blinkit_data;
```



	Avg_Rating
1	4.0

Total Sales by Fat Content:

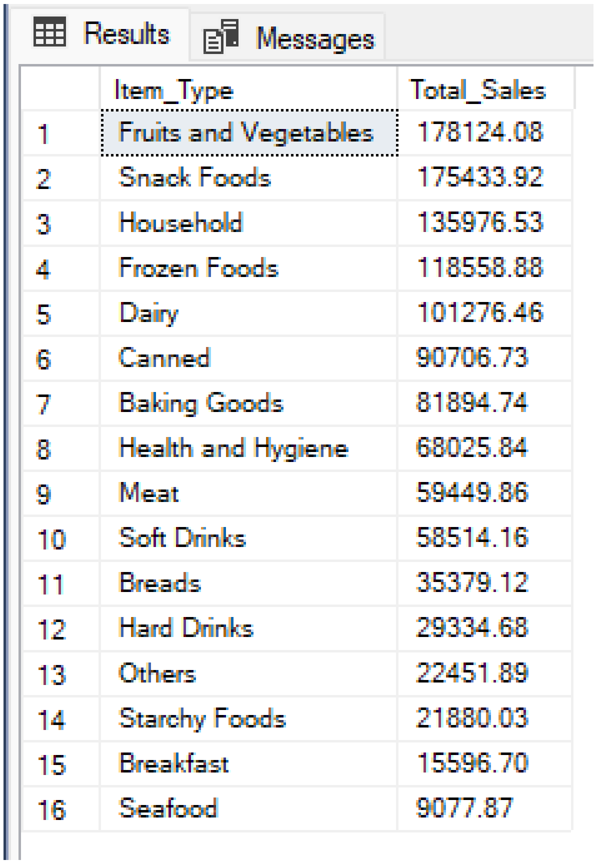
```
SELECT Item_Fat_Content, CAST(SUM(Total_Sales) AS DECIMAL(10,2)) AS
Total_Sales
FROM blinkit_data
GROUP BY Item_Fat_Content
```



	Item_Fat_Content	Total_Sales
1	Low Fat	776319.68
2	Regular	425361.80

Total Sales by Item Type

```
SELECT Item_Type, CAST(SUM(Total_Sales) AS DECIMAL(10,2)) AS Total_Sales
FROM blinkit_data
GROUP BY Item_Type
ORDER BY Total_Sales DESC
```

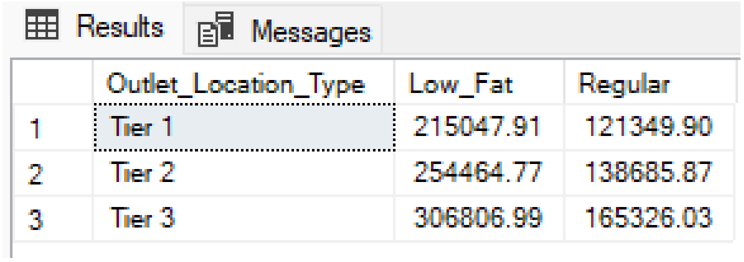


	Item_Type	Total_Sales
1	Fruits and Vegetables	178124.08
2	Snack Foods	175433.92
3	Household	135976.53
4	Frozen Foods	118558.88
5	Dairy	101276.46
6	Canned	90706.73
7	Baking Goods	81894.74
8	Health and Hygiene	68025.84
9	Meat	59449.86
10	Soft Drinks	58514.16
11	Breads	35379.12
12	Hard Drinks	29334.68
13	Others	22451.89
14	Starchy Foods	21880.03
15	Breakfast	15596.70
16	Seafood	9077.87

Fat Content by Outlet for Total Sales

```
SELECT Outlet_Location_Type,
       ISNULL([Low Fat], 0) AS Low_Fat,
       ISNULL([Regular], 0) AS Regular
FROM
(
    SELECT Outlet_Location_Type, Item_Fat_Content,
           CAST(SUM(Total_Sales) AS DECIMAL(10,2)) AS Total_Sales
    FROM blinkit_data
    GROUP BY Outlet_Location_Type, Item_Fat_Content
) AS SourceTable
PIVOT
(
    SUM(Total_Sales)
    FOR Item_Fat_Content IN ([Low Fat], [Regular])
) AS PivotTable
```

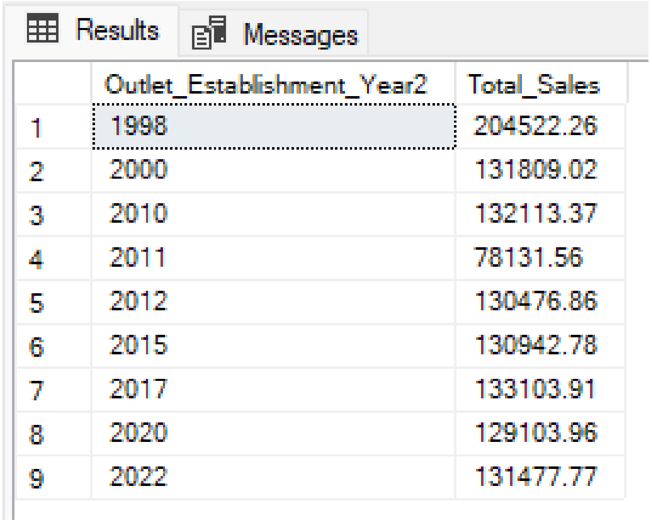
```sql
ORDER BY Outlet_Location_Type;
```



	Outlet_Location_Type	Low_Fat	Regular
1	Tier 1	215047.91	121349.90
2	Tier 2	254464.77	138685.87
3	Tier 3	306806.99	165326.03

Total Sales by Outlet Establishment

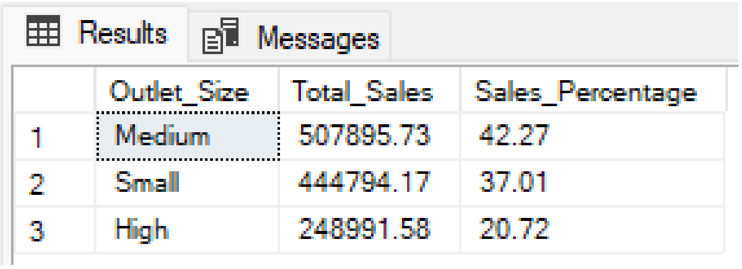
```sql
SELECT Outlet_Establishment_Year, CAST(SUM(Total_Sales) AS DECIMAL(10,2)) AS
Total_Sales
FROM blinkit_data
GROUP BY Outlet_Establishment_Year
ORDER BY Outlet_Establishment_Year
```



	Outlet_Establishment_Year2	Total_Sales
1	1998	204522.26
2	2000	131809.02
3	2010	132113.37
4	2011	78131.56
5	2012	130476.86
6	2015	130942.78
7	2017	133103.91
8	2020	129103.96
9	2022	131477.77

F. Percentage of Sales by Outlet Size

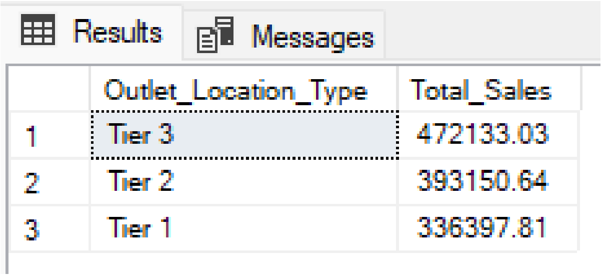
```sql
SELECT
    Outlet_Size,
    CAST(SUM(Total_Sales) AS DECIMAL(10,2)) AS Total_Sales,
    CAST((SUM(Total_Sales) * 100.0 / SUM(SUM(Total_Sales)) OVER()) AS
DECIMAL(10,2)) AS Sales_Percentage
FROM blinkit_data
GROUP BY Outlet_Size
ORDER BY Total_Sales DESC;
```



	Outlet_Size	Total_Sales	Sales_Percentage
1	Medium	507895.73	42.27
2	Small	444794.17	37.01
3	High	248991.58	20.72

G. Sales by Outlet Location

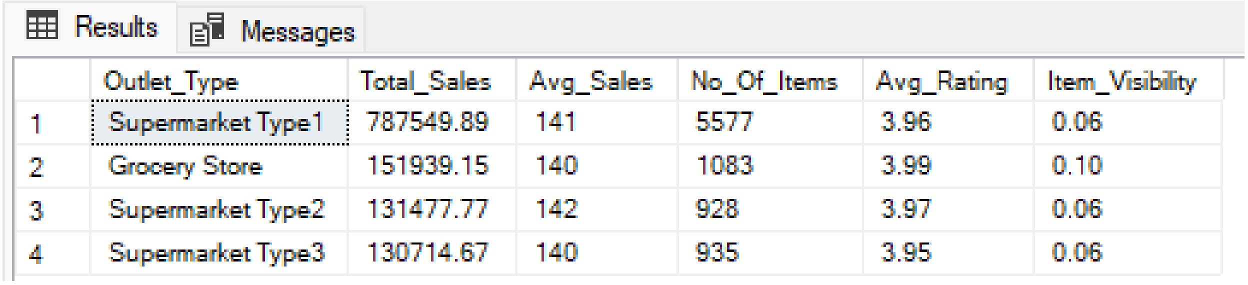
```
SELECT Outlet_Location_Type, CAST(SUM(Total_Sales) AS DECIMAL(10,2)) AS
Total_Sales
FROM blinkit_data
GROUP BY Outlet_Location_Type
ORDER BY Total_Sales DESC
```



	Outlet_Location_Type	Total_Sales
1	Tier 3	472133.03
2	Tier 2	393150.64
3	Tier 1	336397.81

H. All Metrics by Outlet Type:

```
SELECT Outlet_Type,
            CAST(SUM(Total_Sales) AS DECIMAL(10,2)) AS Total_Sales,
            CAST(AVG(Total_Sales) AS DECIMAL(10,0)) AS Avg_Sales,
            COUNT(*) AS No_Of_Items,
            CAST(AVG(Rating) AS DECIMAL(10,2)) AS Avg_Rating,
            CAST(AVG(Item_Visibility) AS DECIMAL(10,2)) AS Item_Visibility
FROM blinkit_data
GROUP BY Outlet_Type
ORDER BY Total_Sales DESC
```



	Outlet_Type	Total_Sales	Avg_Sales	No_Of_Items	Avg_Rating	Item_Visibility
1	Supermarket Type1	787549.89	141	5577	3.96	0.06
2	Grocery Store	151939.15	140	1083	3.99	0.10
3	Supermarket Type2	131477.77	142	928	3.97	0.06
4	Supermarket Type3	130714.67	140	935	3.95	0.06

Analysis & Key Insights

- **Low Fat vs Regular:** Regular items contributed slightly higher total sales, indicating stronger consumer preference or higher pricing.
- **Top Item Categories:** Certain item types, particularly everyday essentials and branded packaged foods, dominated total sales.
- **Outlet Establishment Year:** Newer outlets demonstrated higher sales, suggesting expansion success or improved customer reach.
- **Outlet Size:** Large outlets accounted for the majority of total sales, reinforcing the scalability advantage.
- **Outlet Location:** Urban and Tier-1 locations exhibited stronger revenue contributions compared to semi-urban or rural areas.

- **Outlet Type Analysis:** Supermarket-type outlets consistently outperformed smaller grocery stores across all KPIs.

Conclusion

This SQL-based analysis provided critical insights into **Blinkit's operational performance**, enabling data-driven decisions regarding product assortment, outlet expansion, and marketing focus.

The project demonstrated the ability to:

- Clean and standardize data for analysis.
- Build reusable SQL queries to compute business KPIs.

This structured approach showcases the analytical workflow from **data extraction to visualization**, supporting Blinkit's goal of improving sales efficiency and customer satisfaction.