Blinkit

Analysis SQL Project

Comprehensive Sales, Customer, and Inventory Analysis Using SQL

Project Overview

The **Blinkit Analysis SQL Project** aims to conduct a comprehensive analysis of Blinkit's sales performance, customer satisfaction, and inventory distribution. By leveraging SQL queries, we will extract key insights and identify opportunities for optimization. The analysis will focus on various KPIs such as **Total Sales, Average Sales, Number of Items, and Average Rating,** segmented by factors like **Fat Content, Item Type, Outlet Establishment, Outlet Size, and Outlet Location.**

- **Tools Used:**

MySQL Workbench: For querying and analyzing the dataset.

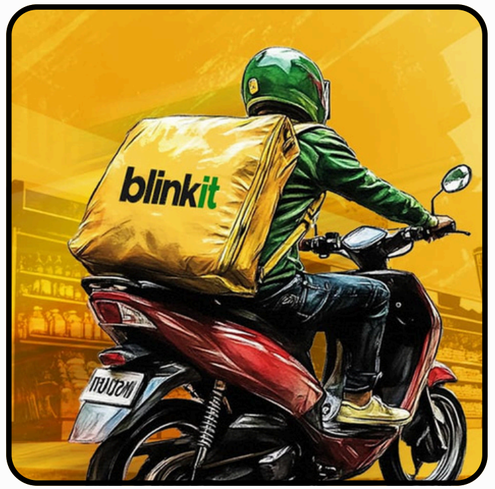
Business Requirements

- **Objective:**

To analyze Blinkit's sales performance, customer satisfaction, and inventory distribution using SQL to identify trends, patterns, and opportunities for optimization.

- **Key Performance Indicators (KPIs):**

  Total Sales: Overall revenue generated from all items sold.
  Average Sales: Average revenue per sale.
  Number of Items: Total count of different items sold.
  Average Rating: Average customer rating for items sold.



```sql
    # 1. Total Sales:
SELECT CONCAT('Total Sales:', CAST(SUM(Total_Sales)/1000000 AS DECIMAL(10,2)), ' Million') AS Total_Sales
FROM GroceryData;  # Total Sales number is very big, so we change the number into Million
```

	Total_Sales
▶	Total Sales:2.43 Million

```sql
    # 2. Average Sales:
SELECT CONCAT('Average Sales', CAST(AVG(Total_Sales) AS DECIMAL(10,1)), ' USD') AS Avg_Sales
FROM GroceryData; # Average Sales number is in USD, so we change the number into USD
```

	Avg_Sales
▶	Average Sales141.1 USD

```sql
    # 3. Number of Items:
SELECT CONCAT('No of Items: ', COUNT(*)) AS No_Of_Items FROM GroceryData;
```

	Avg_Sales
▶	Average Sales141.1 USD

```sql
    # 4. Average Rating:
SELECT CONCAT('Average Rating: ', CAST(AVG(Rating) AS DECIMAL(10,2))) AS Avg_Rating
FROM GroceryData;
```

	Avg_Rating
▶	Average Rating: 4.02

Granular Requirements

1. **Total Sales by Fat Content:**

- **Objective:** Analyze the impact of fat content on total sales.
- **Additional KPIs:** Average Sales, Number of Items, Average Rating.

```sql
SELECT
    Item_Fat_Content,
    CONCAT('$', CAST(SUM(Total_Sales)/1000 AS DECIMAL(10,2))) AS Total_Sales,
    CONCAT(CAST(AVG(Total_Sales) AS DECIMAL(10,1)), ' USD') AS Avg_Sales,
    CONCAT(COUNT(*), ' Items') AS No_Of_Items,
    CONCAT(CAST(AVG(Rating) AS DECIMAL(10,2)), ' Stars') AS Avg_Rating
FROM
    GroceryData
GROUP BY
    Item_Fat_Content
ORDER BY
    SUM(Total_Sales) DESC;
```

	Item_Fat_Content	Total_Sales	Avg_Sales	No_Of_Items	Avg_Rating
▶	Low Fat	$1568.54	140.9 USD	11131 Items	4.02 Stars
	Regular	$862.56	141.4 USD	6099 Items	4.02 Stars

Granular Requirements

2. Total Sales by Item Type:

- **Objective:** Identify the performance of different item types in terms of total sales.
- **Additional KPIs:** Average Sales, Number of Items, Average Rating.

```sql
SELECT
    Item_Type,
    CONCAT('$', CAST(SUM(Total_Sales)/1000 AS DECIMAL(10,2))) AS Total_Sales,
    CONCAT(CAST(AVG(Total_Sales) AS DECIMAL(10,1)), ' USD') AS Avg_Sales,
    CONCAT('No of Items: ', COUNT(*)) AS No_Of_Items,
    CONCAT(CAST(AVG(Rating) AS DECIMAL(10,2)), ' Stars') AS Avg_Rating
FROM
    GroceryData
GROUP BY
    Item_Type
ORDER BY
    SUM(Total_Sales) DESC;
```

Item_Type	Total_Sales	Avg_Sales	No_Of_Items	Avg_Rating
Fruits and Vegetables	$359.28	145.0 USD	No of Items: 2478	4.01 Stars
Snack Foods	$355.04	146.4 USD	No of Items: 2425	4.01 Stars
Household	$274.86	148.5 USD	No of Items: 1851	4.05 Stars
Frozen Foods	$241.63	139.1 USD	No of Items: 1737	4.03 Stars
Dairy	$204.57	148.6 USD	No of Items: 1377	4.02 Stars
Canned	$183.50	139.3 USD	No of Items: 1317	4.05 Stars
Baking Goods	$164.62	125.9 USD	No of Items: 1308	4.04 Stars
Health and Hygiene	$138.23	131.0 USD	No of Items: 1055	4.04 Stars
Soft Drinks	$120.11	131.6 USD	No of Items: 913	3.97 Stars
Meat	$118.55	140.5 USD	No of Items: 844	4.08 Stars
Breads	$71.33	141.0 USD	No of Items: 506	3.95 Stars
Hard Drinks	$60.34	136.5 USD	No of Items: 442	3.99 Stars
Others	$45.92	135.5 USD	No of Items: 339	3.99 Stars
Starchy Foods	$44.09	149.0 USD	No of Items: 296	3.94 Stars
Breakfast	$31.51	143.9 USD	No of Items: 219	3.99 Stars
Seafood	$17.52	142.5 USD	No of Items: 123	3.99 Stars

Granular Requirements

3. Fat Content by Outlet for Total Sales:

- **Objective:** Compare total sales across different outlets segmented by fat content.
- **Additional KPIs:** Average Sales, Number of Items, Average Rating.

Item_Type	Total_Sales	Avg_Sales	No_Of_Items	Avg_Rating
Fruits and Vegetables	$0.00	0.0 USD	0 Items	0.00 Stars
Snack Foods	$0.00	0.0 USD	0 Items	0.00 Stars
Household	$0.00	0.0 USD	0 Items	0.00 Stars
Frozen Foods	$0.00	0.0 USD	0 Items	0.00 Stars
Dairy	$0.00	0.0 USD	0 Items	0.00 Stars
Seafood	$0.00	0.0 USD	0 Items	0.00 Stars
Breakfast	$0.00	0.0 USD	0 Items	0.00 Stars
Starchy Foods	$0.00	0.0 USD	0 Items	0.00 Stars
Others	$0.00	0.0 USD	0 Items	0.00 Stars
Hard Drinks	$0.00	0.0 USD	0 Items	0.00 Stars

```
    SELECT
    Outlet_Location_Type,
    COALESCE(SUM(CASE WHEN Item_Fat_Content = 'Low Fat' THEN Total_Sales ELSE 0 END), 0) AS Low_Fat,
    COALESCE(SUM(CASE WHEN Item_Fat_Content = 'Regular' THEN Total_Sales ELSE 0 END), 0) AS Regular
FROM
    GroceryData
GROUP BY
    Outlet_Location_Type
ORDER BY
    Outlet_Location_Type;
```

Granular Requirements

4. Total Sales by Outlet Establishment:

- **Objective:** Evaluate how the age or type of outlet establishment influences total sales.

```sql
SELECT Outlet_Establishment_Year,
    CAST(SUM(Total_Sales) AS DECIMAL (10,2)) AS Total_Sales,
    CONCAT('Average Sales', CAST(AVG(Total_Sales) AS DECIMAL(10,1)), ' USD') AS Avg_Sales,
    CONCAT('No of Items: ', COUNT(*)) AS No_Of_Items,
    CONCAT('Average Rating: ', CAST(AVG(Rating) AS DECIMAL(10,2))) AS Avg_Rating
FROM GroceryData
GROUP BY Outlet_Establishment_Year
ORDER BY Total_Sales DESC;
```

2017	296183.12	Average Sales142.3 USD	No of Items: 2081	Average Rating: 4.01
2010	295201.91	Average Sales142.5 USD	No of Items: 2071	Average Rating: 4.02
2000	294703.52	Average Sales141.5 USD	No of Items: 2082	Average Rating: 4.01
2022	294059.63	Average Sales142.2 USD	No of Items: 2068	Average Rating: 4.03
2012	293456.60	Average Sales140.2 USD	No of Items: 2093	Average Rating: 4.05
2015	289100.20	Average Sales141.0 USD	No of Items: 2050	Average Rating: 4.02
2020	287990.41	Average Sales139.1 USD	No of Items: 2071	Average Rating: 4.04
1998	204522.26	Average Sales139.8 USD	No of Items: 1463	Average Rating: 3.97
2011	175877.93	Average Sales140.6 USD	No of Items: 1251	Average Rating: 4.04

Granular Requirements

5. Percentage of Sales by Outlet Size:

- **Objective:** Analyze the correlation between outlet size and total sales.

```
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 GroceryData
GROUP BY Outlet_Size
ORDER BY Total_Sales DESC;
```

Medium	977487.10	40.21
Small	898378.74	36.95
High	555229.74	22.84

Granular Requirements

6. Sales by Outlet Location:

- **Objective:** Assess the geographic distribution of sales across different locations.

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

Outlet_Location_Type	Total_Sales
Tier 3	895355.75
Tier 2	873273.74
Tier 1	662466.09

Granular Requirements

7. All Metrics by Outlet Type:

- **Objective:** Provide a comprehensive view of all key metrics (Total Sales, Average Sales, Number of Items, Average Rating) broken down by different outlet types.

```sql
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 GroceryData
GROUP BY Outlet_Type
ORDER BY Total_Sales DESC;
```

Supermarket Type1	1756635.76	141	12448	4.02	0.06
Supermarket Type2	294059.63	142	2068	4.03	0.06
Grocery Store	249685.51	140	1779	4.03	0.10
Supermarket Type3	130714.67	140	935	3.95	0.06

Insights

1. **Fat Content Analysis:**
    - Low-fat items contribute significantly to total sales compared to regular-fat items.
    - Average ratings for low-fat items are higher, indicating better customer satisfaction.
2. **Item Type Performance:**
    - Fruits and vegetables generate the highest total sales, followed by snack foods.
    - Dairy products have the lowest average sales but a high number of items sold.
3. **Outlet Establishment:**
    - Newer outlets (established after 2015) show higher total sales compared to older outlets.
4. **Outlet Size:**
    - Medium-sized outlets contribute the highest percentage of total sales (45%), followed by small and large outlets.
5. **Geographic Distribution:**
    - Tier 1 locations generate the highest sales, indicating better market penetration in urban areas.

Conclusion

The Blinkit Analysis SQL Project provides a comprehensive understanding of sales performance, customer satisfaction, and inventory distribution. By leveraging SQL queries, we identified key trends and opportunities for optimization. The insights and recommendations will help Blinkit enhance its operations, improve customer satisfaction, and drive revenue growth.

Thank You