SUPERSTORE DATALYSIS

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CASC Sugy BACKGROUND



Superstore, a leading retail chain, prides itself on its commitment to data-driven decision-making.

As a BI Analyst at Superstore, your role is crucial in providing actionable insights to various departments within the organization. You are tasked with several urgent requests for analysis from different departments such as Marketing, Business Development, Sales, and others.



- **Product** data contains detailed information regarding the products offered by the company, including details such as product names, categories, subcategories, and any relevant attributes or specifications.
- **Customer** data contains detailed information about the company's customers, including details such as customer name, customer segments, demographics, and any other information that helps understand and serve the customers better.
- Orders data contains detailed information about the orders placed by customers, including items purchased, quantities, discounts, and delivery details.

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SAME-DAY ship service mode is a service where products ordered by customers can be sent immediately on the same day as the day of order. However, in reality, not all customers who order the SAME-DAY delivery mode receive the benefits of this service properly.

The operational team seeks to analyze the instances where customers who selected the SAME-DAY delivery service did not receive their order on the same day the order was placed. They request an analysis to quantify the number of orders, particularly those designated as SAME-DAY, that experienced delivery delays.

```
SELECT
COUNT(order_id) AS total_delayed_delivery
FROM
orders
WHERE
ship_mode = 'Same Day' AND
order_date != ship_date
;
```



HOW MANY SAME DAY ORDERS WERE DELAYED IN DELIVERY?

- There are 24 same-day orders experiencing delivery delays, indicating a potential issue with our logistics.
- The operational team must diagnose this issue promptly to ensure that all customers who choose the same-day shipping service can receive this benefit reliably.

total_delayed_delivery

24

The business team wants to conduct an analysis of the company's profitability, specifically exploring the correlation between discount rates and overall profitability. They request you to analyze this relationship by displaying the average profit for each discount level, categorized as follows:

- LOW for discounts below 0.2 (excluding 0.2)
- MODERATE for discounts ranging from 0.2 to below 0.4 (excluding 0.4)
- HIGH for discounts starting from 0.4 and above

```
SELECT
 CASE
   WHEN discount < 0.2 THEN 'LOW'
   WHEN discount >= 0.2 AND discount < 0.4 THEN 'MODERATE'
   ELSE 'HIGH'
 END AS grp_discount,
 AVG(profit) AS avg_profit
FROM
 orders
GROUP BY 1
ORDER BY 1 DESC
```



AVERAGE PROFIT FOR EACH DISCOUNT LEVEL

The high discount rate has the lowest average profit, while conversely, the low discount rate has the highest average profit, indicating a negative correlation between the discount rate and average profit.

grp_discount	avg_profit
LOW	67.03797971278317
MODERATE	19.835564024546144
HIGH	-107.65201132572433

The sales team has requested assistance from the BI Analyst to analyze the performance of the company's product categories and subcategories. You are tasked with presenting the following metrics for each existing category-subcategory pair:

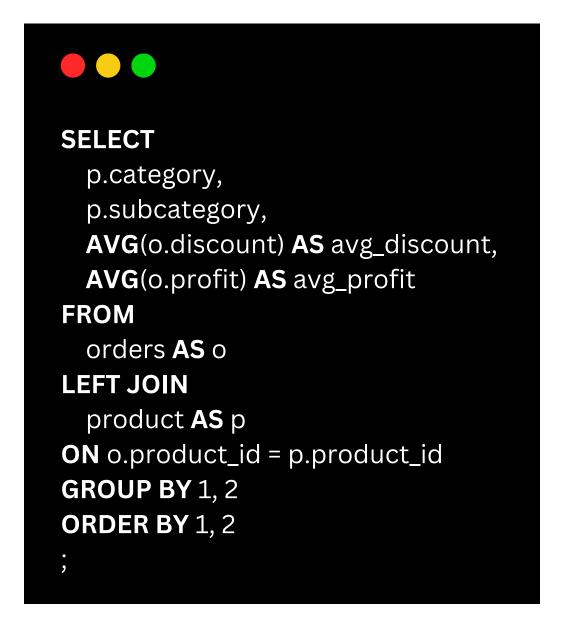
- Average discount
- Average profit

category	subcategory	avg_discount	avg_profit
Furniture	Bookcases	0.211	-15.230
Furniture	Chairs	0.170	43.095
Furniture	Furnishings	0.138	13.645
Furniture	Tables	0.261	-55.565
Office Supplies	Appliances	0.166	38.922
Office Supplies	Art	0.074	8.200
Office Supplies	Binders	0.372	19.843
Office Supplies	Envelopes	0.0803	27.418
Office Supplies	Fasteners	0.082	4.375
Office Supplies	Labels	0.068	15.236
Office Supplies	Paper	0.074	24.856
Office Supplies	Storage	0.074	25.152
Office Supplies	Supplies	0.076	-6.258
Technology	Accessories	0.078	54.111
Technology	Copiers	0.161	817.909
Technology	Machines	0.306	29.432
Technology	Phones	0.154	50.073



AVERAGE PROFITS AND DISCOUNTS

FOR EACH CATEGORY AND SUBCATEGORY PAIR



The business development team is considering expansion into California, Texas, and Georgia, seeking insights into the performance of each customer segment in these states for 2016. You are tasked with presenting the following performance metrics for each customer segment:

- Number of sales
- Average profit

```
SELECT
 c.segment,
 SUM(o.sales) AS total_sales,
 AVG(o.profit) AS average_profit
FROM
 orders AS o
LEFT JOIN
 customer AS c
ON o.customer_id = c.customer_id
WHERE
 c.state IN ('California', 'Texas', 'Georgia') AND
 date_part('year', o.order_date) = 2016
GROUP BY 1
```



PERFORMANCE OF EACH CUSTOMER SEGMENT

IN CALIFORNIA, TEXAS, AND GEORGIA IN 2016

In 2016, the consumer segment in California, Texas, and Georgia recorded the highest total sales, yet its average profit was the lowest among other segments. Conversely, the home office segment, despite having the lowest total sales, achieved the highest average profit.

segment	total_sales	average_profit
Consumer	90982.319	30.329
Corporate	50951.911	33.573
Home Office	34897.952	34.661

The business team seeks to identify regions where customers show strong interest in discounts. They request an analysis to display the count of customers with an average discount exceeding 0.4 for each existing region.

```
WITH base AS (
 SELECT
   customer_id,
   AVG(discount) AS avg_discount
 FROM
   orders
 GROUP BY 1
 HAVING AVG(discount) > 0.4
SELECT
 c.region,
 COUNT(1) AS cust_love_discount
FROM
 base
LEFT JOIN
 customer AS c
ON o.customer_id = c.customer_id
GROUP BY 1
ORDER BY 2 DESC
```



HOW MANY CUSTOMERS WHO LOVES DISCOUNTS

FOR EACH REGION

- In total, 9 customers have shown an interest in discounts.
- The West region stands out as having the highest number of discount-loving customers. Conversely, other regions each have an equal number of customers with an average discount exceeding 0.4.

region	cust_love_discount
West	3
South	2
East	2
Central	2

addional QUESTIONS

In addition to the previous 5 case studies, here are several additional questions that will be answered in this report:

Average Shipping Time by Ship Mode

Sales Performance Trends

O3 Item Sales and Profit Performance
Across Regions

City with the Highest Profit

Most Profitlabe Products



AVERAGE TIME TO SHIP FOR EACH SHIP MODE

- The data illustrate a wide range of delivery speeds, from Same Day delivery, which takes just 1 hour, to Standard Class, which takes nearly 8 days.
- This diverse range effectively accommodates various customer needs and preferences, from urgent deliveries to cost-effective options for those prioritizing cost savings over rapid delivery.

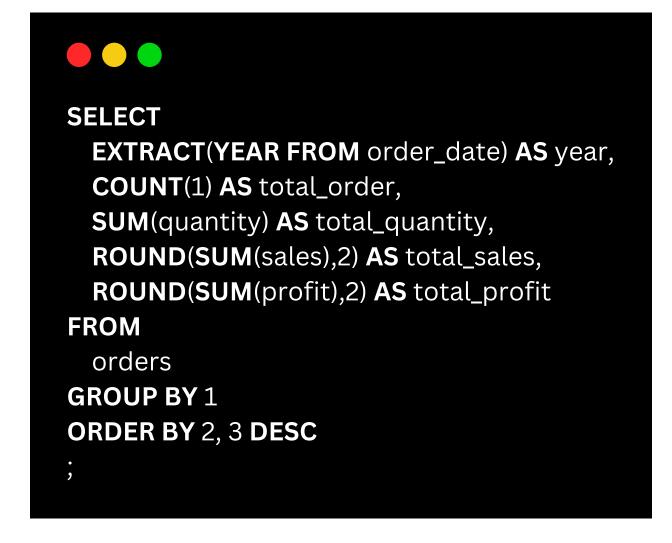


ship_mode	time_to_ship
Standard Class	7.968
Second Class	5.410
Same Day	0.044
First Class	3.802



SALES PERFORMANCE THROUGHOUT THE YEARS

The data reveals an upward trend across key metrics such as total orders, quantity sold, sales, and profit from 2014 to 2017, indicating a pattern of business growth.

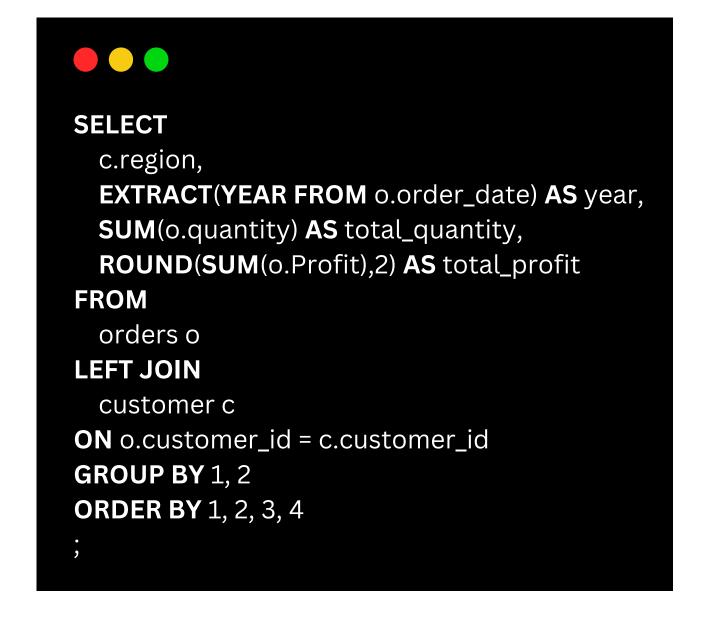


year	total_order	total_quantity	total_sales	total_profit
2014	1993	7581	484247.50	49543.97
2015	2102	7979	470532.51	61618.60
2016	2587	9837	609205.60	81795.17
2017	3312	12476	733215.26	93439.27



THE NUMBER OF ITEMS SOLD AND PROFITS

FOR EACH REGION



region	year	total_quantity	total_profit
Central	2014	1681	7976.07
Central	2015	1749	12092.39
Central	2016	2492	12508.69
Central	2017	3043	31032.19
East	2014	2061	12538.52
East	2015	2363	19037.89
East	2016	2846	26314.36
East	2017	3245	36713.53
South	2014	1398	4338.20
South	2015	1296	10460.65
South	2016	1413	7487.96
South	2017	2014	7888.32
West	2014	2441	24691.18
West	2015	2571	20027.66
West	2016	3086	35484.16
West	2017	4174	17805.23

- There is a noticeable upward trend in key metrics, such as total quantity sold and total profit. This indicates a positive sales trend across all regions.
- The West region consistently generates the highest total sales for the company throughout the year. However, the East appears to generate slightly higher total profit than the West region.



THE CITY WITH THE HIGHEST PROFITS

Sales performance in Wilmington, United States, which generated the highest profits, indicates a strong consumer base and potentially advantageous market conditions in the region.

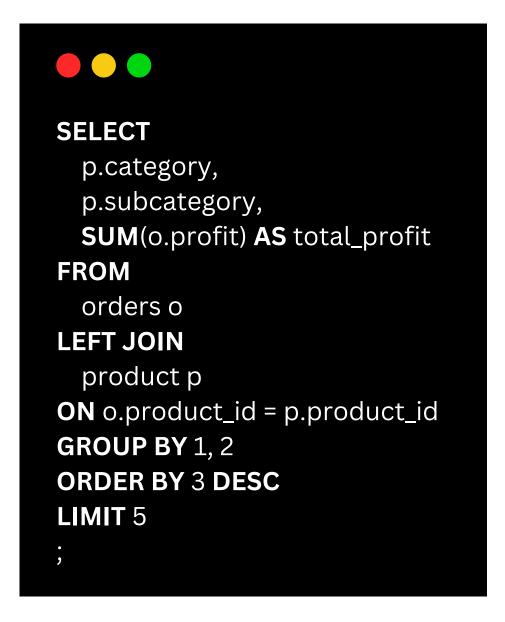
country	city	total_profit
United States	Wilmington	2965.908

```
SELECT
 c.country,
 c.city,
 SUM(o.Profit) AS total_profit
FROM
 orders o
LEFT JOIN
 customer c
ON o.customer_id = c.customer_id
GROUP BY 1, 2
ORDER BY 2 DESC
LIMIT 1
```



MOST PROFITABLE PRODUCT

- The technology category emerges as the most profitable segment, with copiers, phones, and accessories contributing significantly to total profits.
- This indicates strong market demand in these product segments, and investing resources and efforts into these segments yields substantial returns.



category	subcategory	total_profit
Technology	Copiers	55617.824
Technology	Phones	44515.730
Technology	Accessories	41936.635
Office Supplies	Paper	34053.569
Office Supplies	Binders	30221.763

recommendation

- Optimizing Same-Day Order Processes: With 24 same-day orders experiencing delivery delays, it is crucial for the operational team to promptly review and optimize the processes for handling such orders. Clear procedures must be established and implemented for prioritizing, picking, packing, and swiftly dispatching these orders to ensure reliable and efficient service.
- Review Discounting Strategy: To optimize profitability amidst the correlation between discount levels and lower profits, start by reviewing and refining your discounting strategy. This could involve segmenting customers based on their discount sensitivity, adopting bundled pricing over direct discounts, or introducing minimum purchase requirements to qualify for discounts.
- Targeted Marketing Campaigns: Develop targeted marketing campaigns specifically for the West region that emphasize discounts and promotions by tailoring marketing messages to resonate with the preferences of discount-loving customers in this region.
- Market Expansion Strategy: Considering Wilmington's status as the city with the highest profits, explore opportunities to expand operations or enhance market penetration. This may include opening new stores, expanding distribution channels, or increasing marketing efforts to capitalize on the strong consumer demand and favorable market conditions.

thank you

If you have any questions, reach me out through







