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RETAIL ORDERS ANALYSIS

BY SQL

HELLO, I'M **HARSHAL KATE**, AND I'VE CONDUCTED A COMPREHENSIVE **ANALYSIS OF RETAIL ORDERS** USING SQL. THIS ANALYSIS FOCUSED ON EXTRACTING KEY INSIGHTS FROM THE DATA, WHICH INCLUDED ASPECTS SUCH AS ORDER DETAILS, CUSTOMER SEGMENTATION, GEOGRAPHICAL DISTRIBUTION, PRODUCT CATEGORIZATION, AND FINANCIAL METRICS.

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DATASET OVERVIEW:

01

ORDER DETAILS:

- ORDER ID: UNIQUE IDENTIFIER FOR EACH ORDER.
- ORDER DATE: DATE THE ORDER WAS PLACED.
- SHIP MODE: SHIPPING METHOD CHOSEN (E.G., STANDARD, EXPRESS).
- SEGMENT: CUSTOMER SEGMENT (E.G., CONSUMER, CORPORATE).

02

GEOGRAPHIC INFORMATION:

- COUNTRY, CITY, STATE, POSTAL CODE, REGION: LOCATION DETAILS OF THE ORDER.

03

PRODUCT INFORMATION:

- CATEGORY: PRODUCT CATEGORY (E.G., FURNITURE, TECHNOLOGY).
- SUB-CATEGORY: SPECIFIC PRODUCT SUB-CATEGORY.
- PRODUCT ID: UNIQUE IDENTIFIER FOR EACH PRODUCT.
- QUANTITY: NUMBER OF UNITS ORDERED.
- DISCOUNT: DISCOUNT APPLIED ON THE SALE.

04

FINANCIAL METRICS:

- SALE PRICE: TOTAL SALES VALUE.
- PROFIT: PROFIT EARNED FROM THE SALE.

- USING THE RETAIL_ORDER DATABASE FOR THE FURTHER ANALYSIS
- VIEWING EVERYTHING FROM THE RETAIL_DATA

```
use retail_orders;


SELECT
    *
FROM
    retail_data;
```

order_id	order_date	ship_mode	segment	country	city	state	postal_code	region	category	sub_category	product_id	quantity	discount	sale_price	profit
1	2023-03-01	Second Class	Consumer	United States	Henderson	Kentucky	42420	South	Furniture	Bookcases	FUR-BO-10001798	2	5.2	258	18
2	2023-08-15	Second Class	Consumer	United States	Henderson	Kentucky	42420	South	Furniture	Chairs	FUR-CH-10000454	3	21.9	727	127
3	2023-01-10	Second Class	Corporate	United States	Los Angeles	California	90036	West	Office Supplies	Labels	OFF-LA-10000240	2	0.5	5	-5
4	2022-06-18	Standard Class	Consumer	United States	Fort Lauderdale	Florida	33311	South	Furniture	Tables	FUR-TA-10000577	5	19.2	958	178
5	2022-07-13	Standard Class	Consumer	United States	Fort Lauderdale	Florida	33311	South	Office Supplies	Storage	OFF-ST-10000760	2	1	15	-5
6	2022-03-13	NUll	Consumer	United States	Los Angeles	California	90032	West	Furniture	Furnishings	FUR-FU-10001487	7	1.5	47	-3
7	2022-12-28	Standard Class	Consumer	United States	Los Angeles	California	90032	West	Office Supplies	Art	OFF-AR-10002833	4	0.3	7	-3
8	2022-01-25	Standard Class	Consumer	United States	Los Angeles	California	90032	West	Technology	Phones	TEC-PH-10002275	6	45.5	905	45
9	2023-03-23	NUll	Consumer	United States	Los Angeles	California	90032	West	Office Supplies	Binders	OFF-BI-10003910	3	0.4	18	-2
10	2023-05-16	Standard Class	Consumer	United States	Los Angeles	California	90032	West	Office Supplies	Appliances	OFF-AP-10002892	5	3.3	107	17
11	2023-03-31	NUll	Consumer	United States	Los Angeles	California	90032	West	Furniture	Tables	FUR-TA-10001539	9	51.3	1707	237

- **FIND TOP 10 HIGHEST REVENUE GENERATING PRODUCTS**

```sql
SELECT
    product_id, SUM(sale_price) AS sales
FROM
    retail_data
GROUP BY product_id
ORDER BY sales DESC
```

product_id	sales
TEC-CO-10004722	61583
OFF-BI-10003527	27408
TEC-MA-10002412	22636
FUR-CH-10002024	21833
OFF-BI-10001359	19778
OFF-BI-10000545	18999
TEC-CO-10001449	18811
TEC-MA-10001127	18362
OFF-BI-10004995	17950
OFF-SU-10000151	17018

- **FIND TOP 5 HIGHEST SELLING PRODUCTS IN EACH REGION**

```sql
with cte as(
SELECT region,product_id, SUM(sale_price) AS sales
FROM retail_data
GROUP BY region,product_id)
select * from (
select *
, row_number() over(partition by region order by sales desc) as rn
from cte) a
where rn<=5;
```

region	product_id	sales	rn
Central	TEC-CO-10004722	17497	1
Central	TEC-MA-10000822	14270	2
Central	OFF-BI-10001120	11333	3
Central	OFF-BI-10000545	10642	4
Central	OFF-BI-10004995	8701	5
East	TEC-CO-10004722	30090	1
East	TEC-MA-10001047	14292	2
East	FUR-BO-10004834	11699	3
East	OFF-BI-10001359	8774	4
East	TEC-CO-10001449	8629	5
South	TEC-MA-10002412	22636	1
South	TEC-MA-10001127	11365	2
South	OFF-BI-10001359	8323	3
South	TEC-MA-10004125	7998	4
South	OFF-BI-10003527	7614	5
West	TEC-CO-10004722	13996	1
West	OFF-SU-10000151	13093	2
West	FUR-CH-10001215	9973	3
West	OFF-BI-10003527	8120	4
West	FUR-CH-10003973	8007	5

- FIND MONTH OVER MONTH GROWTH COMPARISON FOR 2022 AND 2023 SALES EG
- JAN 2022 VS JAN 2023

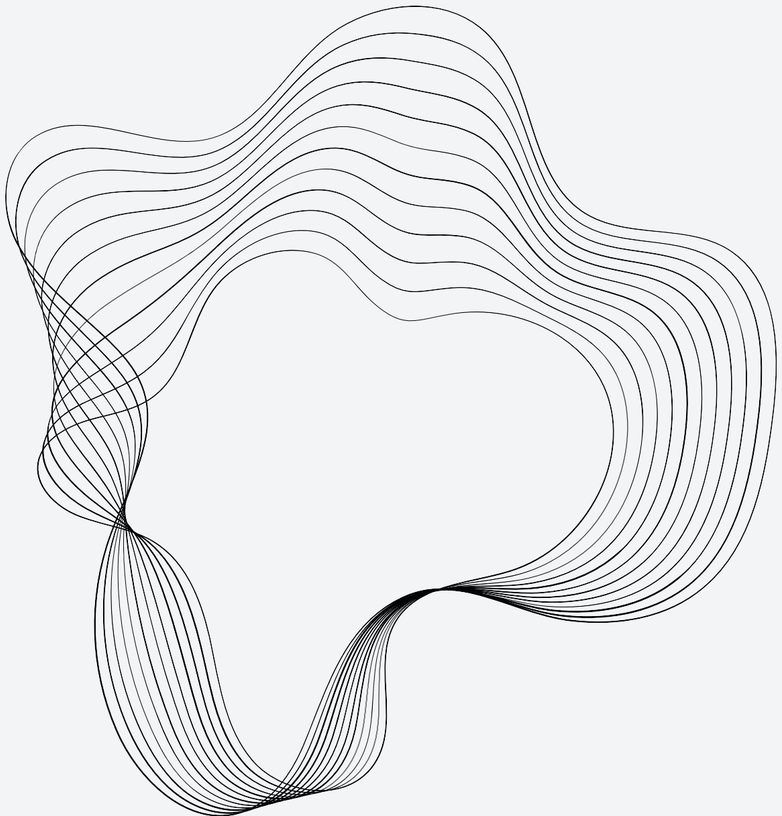
```sql
WITH cte AS (
    SELECT
        YEAR(order_date) AS order_year,
        MONTH(order_date) AS order_month,
        SUM(sale_price) AS sales
    FROM retail_data
    GROUP BY YEAR(order_date), MONTH(order_date)
)
SELECT
    order_month,
    SUM(CASE WHEN order_year = 2022 THEN sales ELSE 0 END) AS sales_2022,
    SUM(CASE WHEN order_year = 2023 THEN sales ELSE 0 END) AS sales_2023
FROM cte
GROUP BY order_month
ORDER BY order_month;
```

order_month	sales_2022	sales_2023
1	96729	90163
2	91900	131411
3	81650	83959
4	97456	114165
5	80841	88094
6	96232	70166
7	79981	91956
8	107114	89409
9	80700	78069
10	122045	124170
11	86080	76624
12	97932	104524

- **FOR EACH CATEGORY WHICH MONTH HAD HIGHEST SALES**

```sql
with cte as (
select category,format(order_date,'yyyyMM') as order_year_month
, sum(sale_price) as sales
from retail_data
group by category,format(order_date,'yyyyMM')
)
select * from(
select *
,row_number() over(partition by category order by sales) as rn
from cte) a
where rn=1;
```

category	order_year_month	sales	rn
Furniture	2,023	360183	1
Office Supplies	2,022	342468	1
Technology	2,022	402387	1



- **WHICH SUB CATEGORY HAD HIGHEST GROWTH BY PROFIT IN 2023 COMPARE TO 2022**

```sql
WITH cte AS (
    SELECT
        sub_category,
        YEAR(order_date) AS order_year,
        SUM(sale_price) AS sales
    FROM retail_data
    GROUP BY sub_category, YEAR(order_date)
),
cte2 AS (
    SELECT
        sub_category,
        SUM(CASE WHEN order_year = 2022 THEN sales ELSE 0 END) AS sales_2022,
        SUM(CASE WHEN order_year = 2023 THEN sales ELSE 0 END) AS sales_2023
    FROM cte
    GROUP BY sub_category
)
SELECT
    cte2.*,
    (sales_2022 - sales_2023) AS sales_difference
FROM cte2
ORDER BY sales_difference DESC
LIMIT 1;
```

sub_category	sales_2022	sales_2023	sales_difference
Appliances	66561	39232	27329