DATA ANALYST PORTFOLIO SQL PROJECT

Customer Shopping Dataset - Retail Sales Data

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KPI

SQL Queries:

Gender-wise distribution of shopping.

```
--- Q1) Gender-wise distribution of Customer Shopping
select gender,count(gender) as total_customers
from sales
group by gender
order by total_customers desc;
```

	gender character varying (10)	customer_data bigint
1	Female	59482
2	Male	39975

Product category-wise distribution of shopping.

```
----Q2) Product categorywise distribution of Customer Shopping
select category, count(category) as Total_customer
from sales
group by category
order by Total_customer;
```

	category character varying (20)	customer_category bigint
1	Books	4981
2	Technology	4996
3	Souvenir	4999
4	Shoes	10034
5	Toys	10087
6	Food & Beverage	14776
7	Cosmetics	15097
8	Clothing	34487

The total sales for each shopping mall.

```
----Q3) Find the total sales for each shopping mall.

SELECT shopping_mall, SUM(Total_Sales) AS Total_Sales
FROM Sales
GROUP BY shopping_mall;
```

	shopping_mall character varying (30)	total_sales numeric
1	Metrocity	37302787.33
2	Kanyon	50554231.10
3	Mall of Istanbul	50872481.68
4	Viaport Outlet	12521339.72
5	Cevahir AVM	12645138.20
6	Istinye Park	24618827.68
7	Emaar Square Mall	12406100.29
8	Zorlu Center	12901053.82

Top 5 customers by total sales.

```
---Q4) Top 5 customer by total_Shopping_sales
select customer_id, sum(total_sales) as salesprice
from sales
group by customer_id
order by salesprice
 desc limit 5;
```

	customer_id character varying (10)	salesprice numeric
1	C219544	26250.00
2	C133580	26250.00
3	C553588	26250.00
4	C248633	26250.00
5	C292192	26250.00

Month-wise distribution of sales.

```
----Q5) Month-wise distribution of Shopping_sales
select month_name, sum(total_sales) as Total_Monthwise_sales
from sales
where years in(2021,2022,2023)
group by month_name
order by Total_Monthwise_sales
```

	month_name character varying (15)	total_monthwise_sales numeric
1	November	18207139.95
2	April	18715685.98
3	September	18795794.91
4	June	18933775.30
5	August	19282361.29
6	December	19455085.64
7	May	19719331.10
8	July	20378722.63
9	October	20545090.43
10	March	21956191.33
11	February	26625090.10
12	January	28891525.59

Year-wise distribution of sales.

```
---Q6) Year-wise total Shopping Sales
select years  ,sum(total_sales)as total_sales_price from
sales
group by years
order by total_sales_price
desc limit 5
```

	years integer	total_sales_price numeric
1	2022	115436814.08
2	2021	114560570.59
3	2023	21508409.58

A popular method among customers.

```
---Q7) Popular Paymentmethod among customers for Shopping.

select payment_method,count(*)as counts
from sales
group by payment_method
order by counts
desc
```

	payment_method character varying (20)	counts bigint
1	Cash	44447
2	Credit Card	34931
3	Debit Card	20079

Average price per unit for each category.

```
---Q8)Average price per unit for each category in Shopping
select category,avg(price) as avg_price_per_unit
from sales
group by category
order by avg_price_per_unit
```

	category character varying (20)	avg_price_per_unit numeric
1	Food & Beverage	15.6719484298863021
2	Souvenir	34.8943448689737948
3	Books	45.5686207588837583
4	Toys	107.7331852879944483
5	Cosmetics	122.4486255547459760
6	Clothing	901.0840212253892771
7	Shoes	1807.3885678692445685
8	Technology	3156.9355484387510008

Category and gender-wise distribution of Purchases

```
---Q9) Categorywise purchase by male and female .

select category,
        SUM( CASE WHEN gender='Male' THEN 1 ELSE 0 END) AS Malecount,
        SUM( CASE WHEN gender= 'Female' THEN 1 ELSE 0 END) AS Femalecount
    FROM sales
    group by category;
```

	category character varying (20)	malecount bigint	femalecount bigint
1	Food & Beverage	5972	8804
2	Souvenir	1982	3017
3	Cosmetics	6027	9070
4	Books	2075	2906
5	Clothing	13835	20652
6	Toys	4002	6085
7	Shoes	4067	5967
8	Technology	2015	2981

The month with the highest total sales for each year.

```sql
--Q10) Find the month with the highest total Shopping sales for each year.
with MonthlySales AS(
    select Years,month_name,sum(total_sales) Monthly_total
    from sales
    group by Years,month_name
)
SELECT Years,Month_name,monthly_total
FROM(
    SELECT Years,month_name,monthly_total,
    RANK() over (partition by years order by monthly_total desc) as Rank
    FROM MonthlySales
)RankedSales
where rank = 1;
```

	years integer	month_name character varying (15)	monthly_total numeric
1	2021	July	10311119.68
2	2022	October	10282075.37
3	2023	February	9508662.96

```sql
---- Q11) Determine the month with the highest average purchase quantity.

select month_name, round(avg(quantity),0) as average_purchase_quantity
from sales
group by month_name
order by average_purchase_quantity;
```

	month_name character varying (15)	average_purchase_quantity numeric
1	June	3
2	November	3
3	March	3
4	August	3
5	December	3
6	July	3
7	January	3
8	April	3
9	February	3
10	May	3
11	September	3
12	October	3

Top 5 product categories that generated the most revenue in each year.

```sql
---Q12) Find the top 5 product categories that generated the most revenue in a each year.

WITH RankedCategories AS (
    SELECT
        Years,
        category,
        SUM(Total_Sales) AS Total_Revenue,
        RANK() OVER (PARTITION BY Years ORDER BY SUM(Total_Sales) DESC) AS Rank
    FROM Sales
    GROUP BY Years, category
)
SELECT Years, category, Total_Revenue
FROM RankedCategories
WHERE Rank <= 5;
```

	years integer	category character varying (20)	total_revenue numeric
1	2021	Clothing	52604924.24
2	2021	Shoes	30125533.15
3	2021	Technology	25951800.00
4	2021	Cosmetics	3033723.92
5	2021	Toys	1796444.16
6	2022	Clothing	51753897.36
7	2022	Shoes	30944765.20
8	2022	Technology	26651100.00
9	2022	Cosmetics	3150499.44
10	2022	Toys	1861888.00
11	2023	Clothing	9637969.44
12	2023	Shoes	5483153.12
13	2023	Technology	5259450.00
14	2023	Cosmetics	608639.54
15	2023	Toys	322094.08

Year-over-year growth rate in total sales for each shopping mall.

```
---Q13) Calculate the year-over-year growth rate in total sales for each shopping mall.

WITH SalesGrowth AS(
    SELECT shopping_mall,Years,
        (SUM(Total_Sales) - LAG(SUM(Total_sales),1,0) OVER(partition by shopping_mall order by years))/
        LAG(sum(Total_Sales),1,1) OVER (partition by shopping_mall order by Years) AS sales_growth
    from sales
    group by shopping_mall,years

)
select * from SalesGrowth
```

shopping_mall	years	sales_growth
Cevahir AVM	2021	5758828.55
Cevahir AVM	2022	0.012670424
Cevahir AVM	2023	-0.819178446
Emaar Square Mall	2021	5981425.65
Emaar Square Mall	2022	-0.093207401
Emaar Square Mall	2023	-0.815490731
Forum Istanbul	2021	5545748.97
Forum Istanbul	2022	0.045894297
Forum Istanbul	2023	-0.834851566
Istinye Park	2021	11153570.1
Istinye Park	2022	0.028327848
Istinye Park	2023	-0.825997106
Kanyon	2021	23168216.05
Kanyon	2022	-0.010618673
Kanyon	2023	-0.805262381
Mall of Istanbul	2021	23269156.43
Mall of Istanbul	2022	0.006068371
Mall of Istanbul	2023	-0.820892864
Metrocity	2021	16665693.56
Metrocity	2022	0.034737546
Metrocity	2023	-0.803273419
Metropol AVM	2021	11795485.33
Metropol AVM	2022	-0.03557669
Metropol AVM	2023	-0.805852872
Viaport Outlet	2021	5572378.72
Viaport Outlet	2022	0.062472712
Viaport Outlet	2023	-0.826288217
Zorlu Center	2021	5650067.23
Zorlu Center	2022	0.068622583
Zorlu Center	2023	-0.799066006

Shopping mall with the highest overall sales, and for that mall, identify the top 5 categories that contributed the most to its revenue.

```sql
---Q14) Find the shopping mall with the highest overall sales, and for that mall,
--       identify the top 5 categories that contributed the most to its revenue.


WITH MallSales AS (
    SELECT shopping_mall, SUM(Total_Sales) AS Mall_Total_Sales
    FROM Sales
    GROUP BY shopping_mall
)
SELECT s.shopping_mall, s.category, SUM(s.Total_Sales) AS Category_Sales
FROM Sales s
JOIN MallSales m ON s.shopping_mall = m.shopping_mall
WHERE s.shopping_mall = (SELECT shopping_mall FROM MallSales ORDER BY Mall_Total_Sales DESC LIMIT 1)
GROUP BY s.shopping_mall, s.category
ORDER BY Category_Sales DESC
LIMIT 5;
```

	shopping_mall character varying (30)	category character varying (20)	category_sales numeric
1	Mall of Istanbul	Clothing	22947417.68
2	Mall of Istanbul	Shoes	13467814.80
3	Mall of Istanbul	Technology	11828250.00
4	Mall of Istanbul	Cosmetics	1367517.78
5	Mall of Istanbul	Toys	790522.88

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