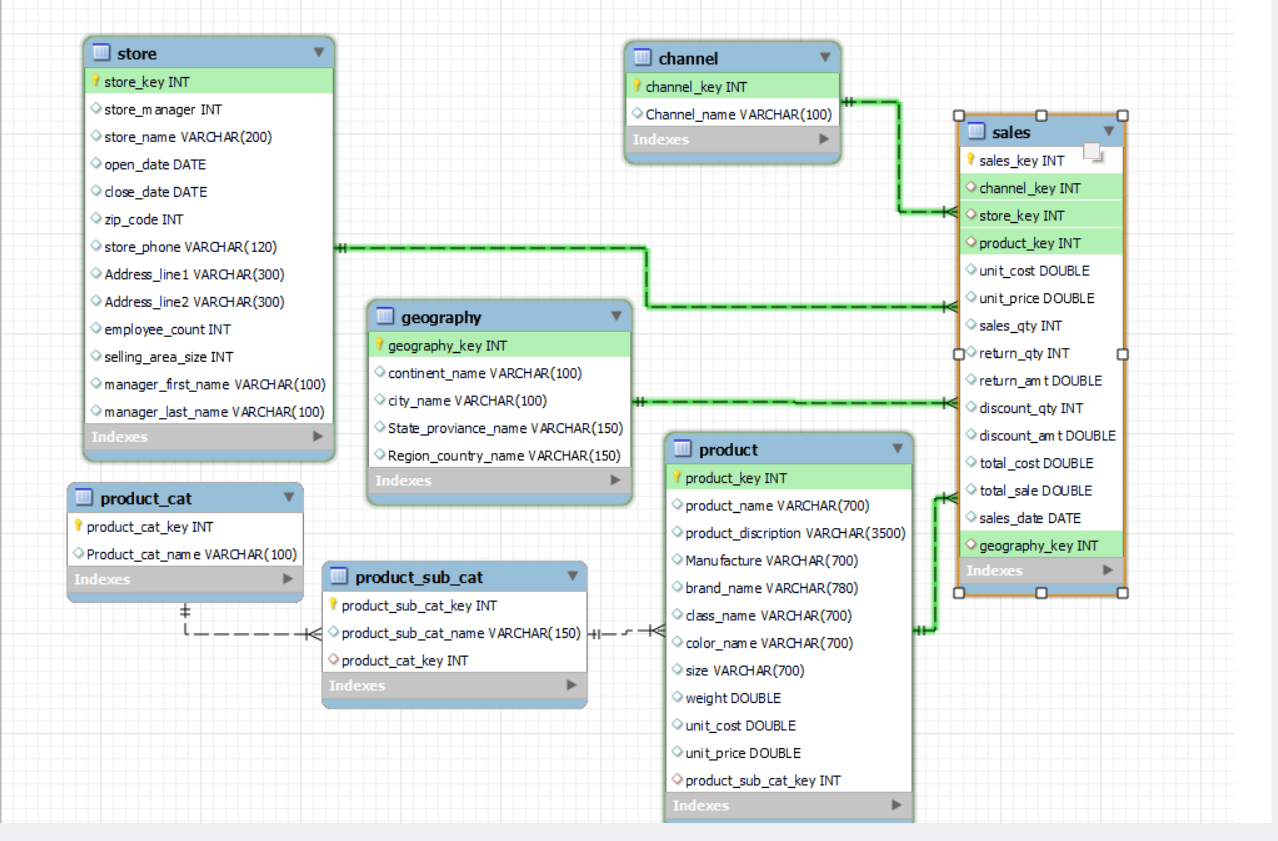
Sales and Expense analysis

Problem Statement :

Analys the Sales and Expense of the company. Chek the trend over Year and month. Alog with channel, store, continent and product. Check average sales and expenses. Which product is repeated mostly. Give your insights to increase the sales and overcome the expenses, product.

(note : This data is not real data, I got this data from my IIM skills instructor.)

ER Diagram of Database



Q. What we have?

We Have total 7 Tables which are related to each other. Sales is our main table. We also have the tables like channel, geography, store and product with two more table (product sub cat, product cat).

Channel table : gives the information of channel from which sales made.

Geography table : gives the information of location where the sales was made.

Product table : give the information of product, from which product we made sales.

Product Sub Cat table : give the information of product subcategory.

Product Cat table : give the information of product category.

All the fields along with the table are provided in the bottom of this project.

Calculating

1. Total Sales.

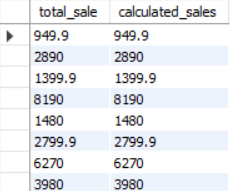
SELECT

total\_sale,

ROUND(unit\_price \* sales\_qty, 1) AS calculated\_sales

FROM

sales;

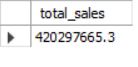


SELECT

ROUND(SUM(total\_sale),2) as total\_sales

FROM

sales;



1. Total Expense
2. Total cost

SELECT

ROUND(SUM(total\_cost),2) as total\_cost

FROM

sales;



1. Total Discount amount

SELECT

ROUND(SUM(discount\_amt), 2) AS total\_discount\_amt

FROM

sales;



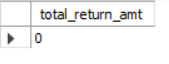
1. Total Return amount

SELECT

ROUND(SUM(return\_amt), 2) AS total\_return\_amt

FROM

sales;



Total Expenses :

SELECT

ROUND(SUM(return\_amt), 2) +

ROUND(SUM(discount\_amt),2)+

ROUND(SUM(total\_cost), 2) AS total\_expenses

FROM

sales;



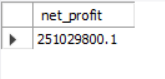
1. Net Profit

SELECT

ROUND(ROUND(SUM(total\_sale), 2) - ROUND(SUM(return\_amt) + SUM(discount\_amt) + SUM(total\_cost), 2), 2) AS net\_profit

FROM

sales;



1. Total Expenses, Total Sales over Year

SELECT

YEAR(sales\_date) AS sales\_year,

ROUND(SUM(return\_amt), 2) + ROUND(SUM(discount\_amt), 2) + ROUND(SUM(total\_cost), 2) AS total\_expenses,

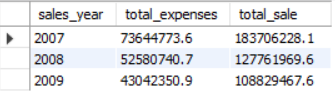
ROUND(SUM(total\_sale), 2) AS total\_sale

FROM

sales

GROUP BY YEAR(sales\_date)

ORDER BY sales\_year;



1. YTD Sales, YTD Expense (Year to Date)

( last or recent year sales and expenses)

SELECT

YEAR(sales\_date) AS sales\_year,

ROUND(SUM(return\_amt), 2) + ROUND(SUM(discount\_amt), 2) + ROUND(SUM(total\_cost), 2) AS total\_expenses,

ROUND(SUM(total\_sale), 2) AS total\_sale

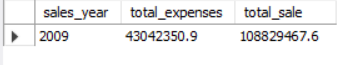
FROM

sales

WHERE YEAR(sales\_date) =2009

GROUP BY YEAR(sales\_date)

ORDER BY sales\_year;



1. PYTD Sales and Expenses (Previous year sales and expenses)

SELECT

YEAR(sales\_date) AS sales\_year,

ROUND(SUM(return\_amt), 2) + ROUND(SUM(discount\_amt), 2) + ROUND(SUM(total\_cost), 2) AS total\_expenses,

ROUND(SUM(total\_sale), 2) AS total\_sale

FROM

sales

WHERE YEAR(sales\_date) = 2008

GROUP BY YEAR(sales\_date)

ORDER BY sales\_year;



**(Note: for expenses I am using the attribute total cost because other values are equal to 0)**

**Q) Find the total sales and expenses over month.**

SELECT

MONTHNAME(sales\_date) AS month\_name,

ROUND(SUM(total\_sale), 2) AS Total\_sales,

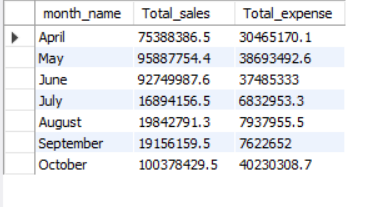
ROUND(SUM(total\_cost), 2) AS Total\_expense

FROM

sales

GROUP BY MONTHNAME(sales\_date),MONTH(sales\_date)

ORDER BY MONTH(sales\_date);



**Q) Which month have the maximum sales?**

SELECT

MONTHNAME(sales\_date) AS month\_name,

ROUND(SUM(total\_sale), 2) AS Total\_sales

FROM

sales

GROUP BY MONTHNAME(sales\_date)

ORDER BY Total\_sales DESC LIMIT 1;



(ADVANCE QUERIES)

**Product**

**Q) Find Top 10 product which having maximum sales ?**

SELECT

product\_name, ROUND(SUM(total\_sale), 2) AS total\_sales

FROM

product

JOIN

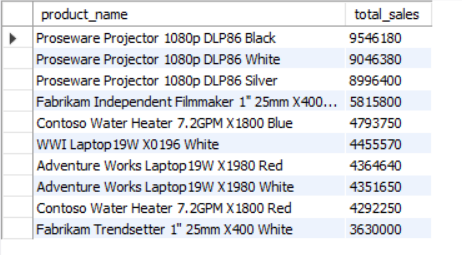
sales

ON product.product\_key = sales.product\_key

GROUP BY product\_name

ORDER BY total\_sales DESC

LIMIT 10;



**Q) How many products we sold ? also find the total sales and expenses over them give your conclusion on them.**

i) SELECT

COUNT(product\_key) AS total\_product

FROM

product;



ii)

SELECT

COUNT(sales\_key) AS product\_demand,

product\_name,

ROUND(SUM(total\_sale), 2) AS total\_sales,

ROUND(SUM(total\_cost), 2) AS total\_expense

FROM

sales

JOIN

product ON sales.product\_key = product.product\_key

GROUP BY product\_name

ORDER BY product\_demand ASC LIMIT 10;



We saw than there are some Product which having the less demand but very good profit margin, which I display above. don’t make those products with high quantity always kept this product with minimum quantity.

**Q) Find the total sales and expense over the product category.**

SELECT

Product\_cat\_name,

ROUND(SUM(total\_sale), 2) AS Total\_sales,

ROUND(SUM(total\_cost), 2) AS Total\_cost

FROM

product\_cat

JOIN

product\_sub\_cat ON

product\_cat.product\_cat\_key = product\_sub\_cat.product\_cat\_key

JOIN

product ON

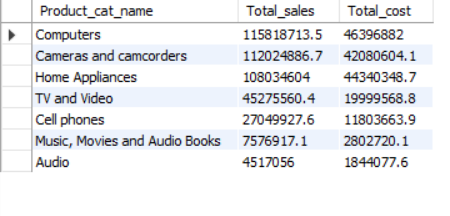
product\_sub\_cat.product\_sub\_cat\_key = product.product\_sub\_cat\_key

JOIN

sales ON product.product\_key = sales.product\_key

GROUP BY Product\_cat\_name

ORDER BY Total\_sales DESC;



**Including all the tables**

**Q) Find the total sales, total expenses done through which channel.**

SELECT

Channel\_name,

ROUND(SUM(total\_sale),2) as Total\_sales,

ROUND(SUM(total\_cost),2) as Total\_expenses

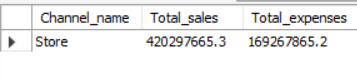
FROM

channel

JOIN

sales ON channel.channel\_key = sales.channel\_key

GROUP BY Channel\_name;



**Q) Which store is most demanded and its total sales and total expenses along with the selling place.**

SELECT

continent\_name,

store\_name,

COUNT(\*) AS cust\_prefer\_store,

ROUND(SUM(total\_sale), 2) AS Total\_sales,

ROUND(SUM(total\_cost), 2) AS Total\_cost

FROM

sales

JOIN

store ON sales.store\_key = store.store\_key

JOIN

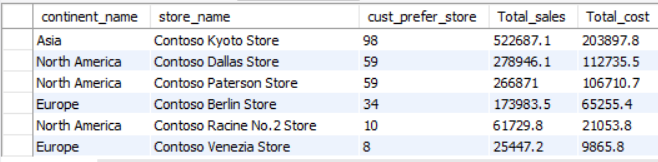
geography ON geography.geography\_key = sales.geography\_key

GROUP BY continent\_name , store\_name

ORDER BY cust\_prefer\_store DESC;



Output 2 :



There are some stores which having very less number of customer attention along with its places.

**Q) Find the Total Sales and expenses over continent.**

SELECT

continent\_name,

ROUND(SUM(total\_sale),2) AS Total\_sales,

ROUND(SUM(total\_cost),2) AS Total\_cost

FROM

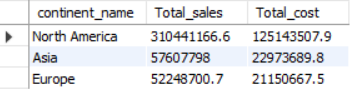
geography

JOIN

sales ON geography.geography\_key = sales.geography\_key

GROUP BY continent\_name

ORDER BY Total\_sales DESC;



**Q) Find the total sales, total expenses over cities of Asia.**

SELECT

city\_name,

ROUND(SUM(total\_sale), 2) AS total\_sales,

ROUND(SUM(total\_cost),2) as total\_expense

FROM

sales

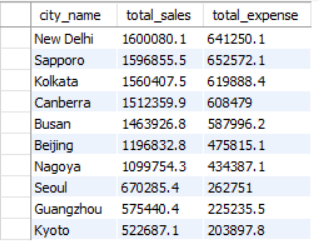
JOIN

geography ON sales.geography\_key = geography.geography\_key

WHERE geography.continent\_name = "Asia"

GROUP BY city\_name

ORDER BY total\_sales DESC;



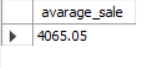
**Q) What is the Average sale? Also find average sales over year.**

SELECT

ROUND(AVG(total\_sale),2) AS avarage\_sale

FROM

sales;



SELECT

YEAR(sales\_date) AS sales\_year,

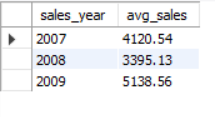
ROUND(AVG(total\_sale), 2) AS avg\_sales

FROM

sales

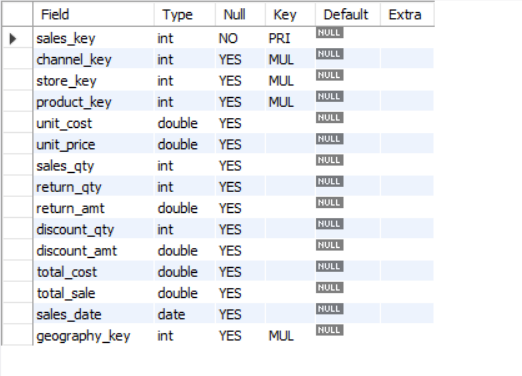
GROUP BY YEAR(sales\_date)

ORDER BY sales\_year ASC;

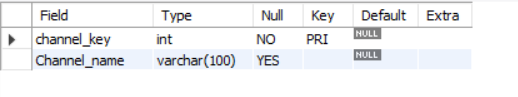


Tables

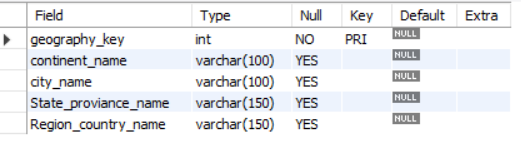
Sales Table



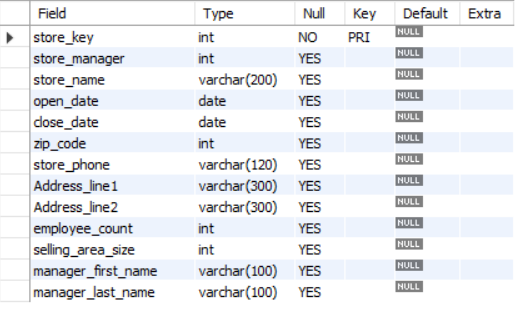
Channel Table



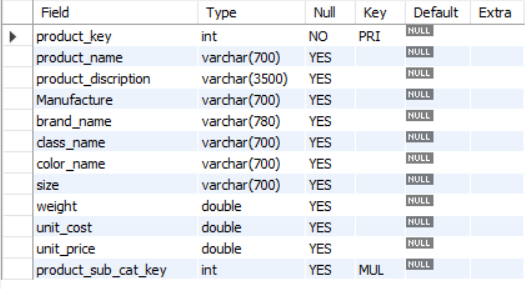
Geography Table



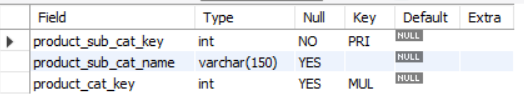
Store Table



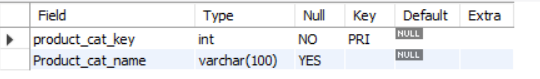
Product Table



Product Sub Cat Table (product subcategory table)



Product Cat Table (product category table)



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