E Commerce Sales Dahboard

PROBLEM STATEMENT
A US Based Ecommerce Sales Company wants us to create a Sales Dashboard showing information of YTD Sales and generate insights for below scenarios-

- Create a KPI Banner showing YTD Sales, YTD Profit, YTD Quantity sold, YTD Profit Margin
- Find Year on Year growth for each KPI and show a YTD sparkline for each measure in the KPI to understand the monthly trend for each fact.
- Find YTD Sales, PYTD Sales, YoY Sales growth for different customer category. Add a trend icon for each category.
- Find YTD Sales performance by each State
- Top 5 and Bottom 5 Products by Sales
- YTD Sales by Region to know best and worst performing region all over country
- YTD Sales by Shipping Type to get the best shipping type percentage

POWER BI FUCNTIONALITIES USED

- Connect Power BI to MS SQL server and Flat Files
- Data Modelling with three tables
- Data cleaning in Power Query
- Date Table in Power BI
- Time Intelligence function (TOTALYTD, SAMEPERIODLASTYEAR, etc)
- Creating Dynamic and Complex KPI's
- Basic to Advanced Dax Queries
- Conditional Formatting's, Adding dynamic icons in Power BI
- Different DAX functions like Calculate, Sum, Sumx, Filter, values, selectedvalue, return, concatenate, divide, var, etc
- Creating different charts, maps and formatting then
- Generating insights from charts
- Export report

Software Used:

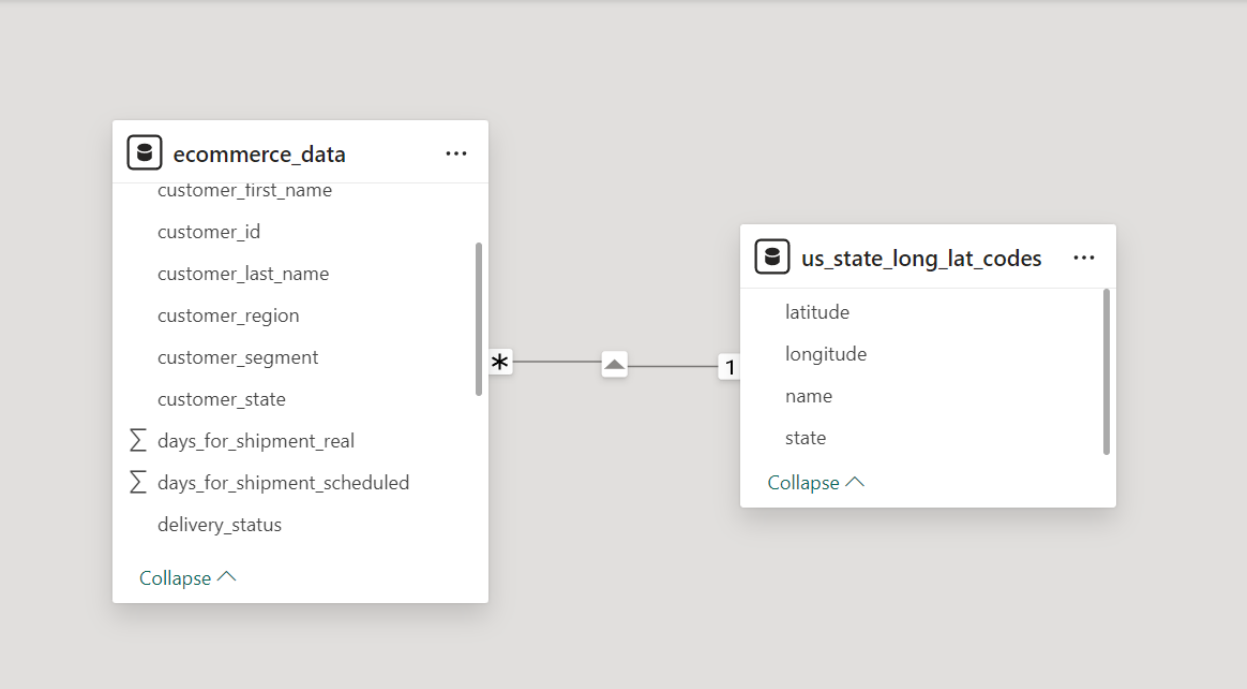
MS SQL Server

Power BI

Procedure

Created a database called Ecommerce_Database in MS SQL server. Added Two Tables ecommerce_data and us_state_lon_lat_codes. Created a relationship between customer_state and name

Relationship (Many to One)

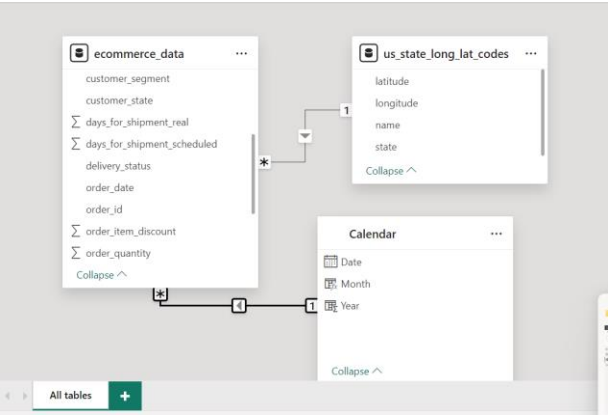


Creating Date Table for time intelligence.

For real time environment

```
Calendar = CALENDAR(MIN(ecommerce_data[order_date]), TODAY())
Year = YEAR('Calendar'[Date])
Month = Format('Calendar'[Date], "mmmm")
```

Data Modelling



For KPI DAX queries

1) YTD Sales

```
YTD Sales = TOTALYTD(SUM(ecommerce_data[sales_per_order]), 'Calendar'[Date])
```

To sort the month in order: Create a new measure/column in calendar table then sort it by using the dax query.

```
Month Number = MONTH('Calendar'[Date])
```

Previous YTD Sales

```
PYTD Sales =
CALCULATE(SUM(ecommerce_data[sales_per_order]),DATESYTD(SAMEPERIODLASTYEAR('Calendar'[Date])))

Year on year sales
YoY Sales = ([YTD Sales]-[PYTD Sales]) / [PYTD Sales]
```

```
For Trend Icon
Create a new measure
Sales Icon = VAR positive_icon = UNICHAR(9650)
            VAR negative_icon = UNICHAR(9660)
                VAR result = IF([YoY Sales]>0, positive_icon,negative_icon)
                RETURN result

Sales Icon Color = IF([YoY Sales]>0, "Green", "Red")
```

2) YTD Profit

```
YTD Profit = TOTALYTD(SUM(ecommerce_data[profit_per_order]), 'Calendar'[Date])
```

PYTD Profit

```
PYTD Profit =
CALCULATE(SUM(ecommerce_data[profit_per_order]),DATESYTD(SAMEPERIODLASTYEAR('Calendar'[Date]))
)
```

YoY Profit

```
YoY Profit = ([YTD Profit]-[PYTD Profit]) / [PYTD Profit]


Profit Icon = VAR positive_icon = UNICHAR(9650)
            VAR negative_icon = UNICHAR(9660)
                VAR result = IF([YoY Profit]>0, positive_icon,negative_icon)
```

```
                RETURN result
Sales Icon Color = IF([YoY Profit]>0, "Green", "Red")
```

3) YTD quantity

```
    YTD quantity = TOTALYTD(SUM(ecommerce_data[order_quantity]), 'Calendar'[Date])

    For adding a special character other than Currency
YTD Concatenated Qty = CONCATENATE("#", FORMAT([YTD quantity]/1000, "0.0 K"))

PYTD Qty =
CALCULATE(SUM(ecommerce_data[order_quantity]),DATESYTD(SAMEPERIODLASTYEAR('Calendar'[Date])))

YoY Qty = ([YTD quantity]-[PYTD Qty]) / [PYTD Qty]

Qty Icon = VAR positive_icon = UNICHAR(9650)
            VAR negative_icon = UNICHAR(9660)
                VAR result = IF([YoY Qty]>0, positive_icon,negative_icon)
                RETURN result


Qty Icon Color = IF([YoY Qty]>0, "Green", "Red")
```

4) Profit Margin

```
    The Profit margin is not calculated hence to Calculate profit Margin
Profit Margin = SUM(ecommerce_data[profit_per_order]) / SUM(ecommerce_data[sales_per_order])

YTD Profit Margin
No need to perform Sum as we have already perform while calculating the Profit Margin
YTD Profit Margin = TOTALYTD([Profit Margin], 'Calendar'[Date])


PYTD Profit Margin = CALCULATE(ecommerce_data[Profit
Margin],DATESYTD(SAMEPERIODLASTYEAR('Calendar'[Date])))



YoY Profit Margin = ([YTD Profit Margin]-[PYTD Profit Margin]) / [PYTD Profit Margin]

Profit Margin Icon = VAR positive_icon = UNICHAR(9650)
            VAR negative_icon = UNICHAR(9660)
                VAR result = IF([YoY Profit Margin]>0, positive_icon,negative_icon)
                RETURN result
Profit Margin Icon Color = IF([YoY Profit Margin]>0, "Green", "Red")
```