**Appendix**

--project Airport X date: 13.03.23

--first question- subject sales

--what are sales performances?

--sales calculation and gathering data.export data to tableau

--Assumption: shipping and tax are paid by customers.

Query1

WITH product\_brand\_data AS(

SELECT distinct pr.[productid],pr.[productname],pr.[category],man.[manufacturerid],man.[manufacturername]

FROM [dbo].[DsSix\_product] pr

LEFT JOIN [dbo].[DsSix\_Manufacturer] man

ON pr.[manufacturerid]=man.[manufacturerid]

)

SELECT pbd.[category],pbd.[productname],pbd.[manufacturername]

,sis.[SaleID],sis.["ProductID"],sis.actual\_quantity\_sold,sis.["SaleDate"]

FROM(

SELECT si.[SaleID],si.["ProductID"],si.actual\_quantity\_sold,s.["SaleDate"]

FROM(

SELECT [SaleID],["ProductID"],["Quantity"]\*["SalePrice"] 'actual\_quantity\_sold' --(line of sale order)

FROM[dbo].[DsSix\_SaleItem]

) si

JOIN [dbo].[DsSix\_Sale] s

ON si.[SaleID]=s.["SaleID"]

) sis

JOIN product\_brand\_data pbd

ON sis.["ProductID"]=pbd.[productid]

Query2

--counting products per category

SELECT [category],COUNT([productid]) count\_product\_in\_category

FROM[dbo].[DsSix\_product]

GROUP BY [category]

Query 3

--in this project we assumed that the customer pay shipping and tax in sales

--data table for profit analysis-create 2 queries sales and costs (of purchasing)

-- 'SALES'- join [dbo].[DsSix\_SaleItem] and [dbo].[DsSix\_Sale]

SELECT distinct sis.["ProductID"],SUM([actual\_quantity\_sold])OVER(PARTITION BY

sis.["ProductID"]) 'sum\_actual\_quantity\_sold'

FROM(

SELECT si.["ProductID"],si.actual\_quantity\_sold,s.["SaleDate"] --adding time

from sale table

FROM(

SELECT [SaleID],["ProductID"],["Quantity"]\*["SalePrice"]

'actual\_quantity\_sold' --(line of sale order)

FROM[dbo].[DsSix\_SaleItem]

) si

JOIN [dbo].[DsSix\_Sale] s

ON si.[SaleID]=s.["SaleID"]

) sis

Query 4

-- 'COSTS'- join [dbo].[DsSix\_PurchaseItem] and [dbo].[DsSix\_Purchase]

-- calculate partial shipping in relates to the number of product at the purchaseid

SELECT distinct pipq.[productid],SUM(cost\_quantity\_purchased\_with\_partial\_shipping)OVER(PARTITION BY pipq.[productid]) 'sum\_cost\_purchaes\_partial\_shipping'

FROM(

SELECT pip.[productid],pip.[purchasedate],pip.cost\_quantity\_purchased\_with\_partial\_shipping

FROM(

SELECT p.[purchaseid],pi.[productid],pi.cost\_quantity\_purchased,p.[shipping]

,COUNT(pi.[productid])OVER(partition by

p.[purchaseid]) num\_product\_purchaseid

,[shipping]/COUNT(pi.[productid])OVER(partition by p.[purchaseid]) 'partial\_shipping',p.[purchasedate]

,pi.cost\_quantity\_purchased+p.[shipping]/COUNT(pi.[productid])OVER(partition by p.[purchaseid]) 'cost\_quantity\_purchased\_with\_partial\_shipping' --shipping payed by airport\_X company

FROM(

SELECT [productid],[purchaseid],[quantity]\*[purchaseprice]

'cost\_quantity\_purchased' --(line of purchase order)

FROM[dbo].[DsSix\_PurchaseItem]

) pi

JOIN [dbo].[DsSix\_Purchase] p

ON pi.[purchaseid]=p.[purchaseid]

) pip

) pipq

Query 5 – ‘updated’

--joining the 2 quries above sales and costs

--calculate profit with salary and wage costs

--loaded costs of average salaries and wages for each product

WITH sales\_airportx AS(

SELECT distinct sis.["ProductID"],SUM([actual\_quantity\_sold])OVER(PARTITION

BY sis.["ProductID"]) 'sum\_actual\_quantity\_sold'

FROM(

SELECT si.["ProductID"],si.actual\_quantity\_sold,s.["SaleDate"] –

adding time from sale table

FROM(

SELECT [SaleID],["ProductID"],["Quantity"]\*["SalePrice"]

'actual\_quantity\_sold' –- (line of sale order)

FROM[dbo].[DsSix\_SaleItem]

) si

JOIN [dbo].[DsSix\_Sale] s

ON si.[SaleID]=s.["SaleID"]

) sis

)

,costs\_purchase\_airportx AS(

SELECT distinct pipq.[productid],SUM(cost\_quantity\_purchased\_with\_partial\_shipping)OVER(PARTITION BY pipq.[productid]) 'sum\_cost\_purchaes\_partial\_shipping'

FROM(

SELECT pip.[productid],pip.[purchasedate],pip.cost\_quantity\_purchased\_with\_partial\_shipping

FROM(

SELECT p.[purchaseid],pi.[productid],pi.cost\_quantity\_purchased,p.[shipping]

,COUNT(pi.[productid])OVER(partition by p.[purchaseid]) num\_product\_purchaseid

,[shipping]/COUNT(pi.[productid])OVER(partition by p.[purchaseid])

'partial\_shipping',p.[purchasedate]

,pi.cost\_quantity\_purchased+p.[shipping]/COUNT(pi.[productid])OVER(partition by

p.[purchaseid]) 'cost\_quantity\_purchased\_with\_partial\_shipping' --shipping

payed by airport\_X company

FROM(

SELECT [productid],[purchaseid],[quantity]\*[purchaseprice]

'cost\_quantity\_purchased' --(line of purchase order)

FROM[dbo].[DsSix\_PurchaseItem]

) pi

JOIN [dbo].[DsSix\_Purchase] p

ON pi.[purchaseid]=p.[purchaseid]

) pip

) pipq

)

--main query. calculating the profit\_product (adding columns - labeling in tableau)

SELECT spp.[productid],spp.profit,spp.[productname],spp.[manufacturerid],spp.[category],m.[manufacturername]

FROM(

SELECT sp.[productid],sp.profit,p.[productname],p.[manufacturerid],p.[category]

FROM(

SELECT p.[productid],ROUND(s.sum\_actual\_quantity\_sold-p.sum\_cost\_purchaes\_partial\_shipping-984.15,2) 'profit'

FROM sales\_airportx s

JOIN costs\_purchase\_airportx p

ON s.["ProductID"]=p.[productid]

) sp

JOIN [dbo].[DsSix\_product] p

ON sp.[productid]=p.[productid]

) spp

JOIN [dbo].[DsSix\_Manufacturer] m

ON spp.[manufacturerid]=m.[manufacturerid]

--query 6-

--in this project we assumed that the customer pay shipping and tax in sales

--data table for profit analysis-create 2 queries sales and costs (of purchasing)

--table 'SALES'- join [dbo].[DsSix\_SaleItem] and [dbo].[DsSix\_Sale]

-- this table will become cte at profit calculation

SELECT distinct SUBSTRING(sis.["SaleDate"],2,4) year\_sal,SUBSTRING(sis.["SaleDate"],7,2) month\_sal,SUM(sis.actual\_quantity\_sold) 'sum\_actual\_quantity\_sold'

FROM(

SELECT si.["ProductID"],si.actual\_quantity\_sold,s.["SaleDate"] --adding time

from sale table

FROM(

SELECT [SaleID],["ProductID"],["Quantity"]\*["SalePrice"]

'actual\_quantity\_sold' --(line of sale order)

FROM[dbo].[DsSix\_SaleItem]

) si

JOIN [dbo].[DsSix\_Sale] s

ON si.[SaleID]=s.["SaleID"]

) sis

GROUP BY SUBSTRING(sis.["SaleDate"],2,4) ,SUBSTRING(sis.["SaleDate"],7,2)

ORDER BY 1,2

--query 7

--'COSTS'- join [dbo].[DsSix\_PurchaseItem] and [dbo].[DsSix\_Purchase]

-- calculate partial shipping in relates to the number of product at the purchaseid

-- this table will become cte at profit calculation

SELECT distinct YEAR(pipq.[purchasedate]) year\_pur,MONTH(pipq.[purchasedate]) month\_pur,SUM(pipq.cost\_quantity\_purchased\_with\_partial\_shipping) 'total\_cost\_quantity\_purchased\_with\_partial\_shipping'

FROM(

SELECT pip.[productid],pip.[purchasedate],pip.cost\_quantity\_purchased\_with\_partial\_shipping

FROM(

SELECT p.[purchaseid],pi.[productid],pi.cost\_quantity\_purchased,p.[shipping]

,COUNT(pi.[productid])OVER(partition by p.[purchaseid])

num\_product\_purchaseid,[shipping]/COUNT(pi.[productid])OVER(partition by

p.[purchaseid]) 'partial\_shipping',p.[purchasedate]

,pi.cost\_quantity\_purchased+p.[shipping]/COUNT(pi.[productid])OVER(partition

by p.[purchaseid]) 'cost\_quantity\_purchased\_with\_partial\_shipping' –

shipping payed by airport\_X company

FROM(

SELEC

[productid],[purchaseid],[quantity]\*[purchaseprice]'cost\_quantity\_purchased'

--(line of purchase order)

FROM[dbo].[DsSix\_PurchaseItem]

) pi

JOIN [dbo].[DsSix\_Purchase] p

ON pi.[purchaseid]=p.[purchaseid]

) pip

) pipq

GROUP BY YEAR(pipq.[purchasedate]),MONTH(pipq.[purchasedate])

ORDER BY 1,2

--query8

join cost and sales (above tables)-updated

--calculate profit with salary and wage costs.data exported to excel and tableau.

--loaded costs of average salaries and wages monthly

WITH sales\_airportx\_time AS(

SELECT distinct SUBSTRING(sis.["SaleDate"],2,4)

year\_sal,SUBSTRING(sis.["SaleDate"],7,2)

month\_sal,SUM(sis.actual\_quantity\_sold) 'sum\_actual\_quantity\_sold'

FROM(

SELECT si.["ProductID"],si.actual\_quantity\_sold,s.["SaleDate"] --adding time

from sale table

FROM(

SELECT [SaleID],["ProductID"],["Quantity"]\*["SalePrice"] 'actual\_quantity\_sold'

--(line of sale order)

FROM[dbo].[DsSix\_SaleItem]

) si

JOIN [dbo].[DsSix\_Sale] s

ON si.[SaleID]=s.["SaleID"]

) sis

GROUP BY SUBSTRING(sis.["SaleDate"],2,4) ,SUBSTRING(sis.["SaleDate"],7,2)

)

,cost\_airportx\_time AS(

SELECT distinct YEAR(pipq.[purchasedate]) year\_pur,MONTH(pipq.[purchasedate])

month\_pur,SUM(pipq.cost\_quantity\_purchased\_with\_partial\_shipping)

'total\_cost\_quantity\_purchased\_with\_partial\_shipping'

FROM(

SELECT

pip.[productid],pip.[purchasedate],pip.cost\_quantity\_purchased\_with\_partial\_shipping

FROM(

SELECT

p.[purchaseid],pi.[productid],pi.cost\_quantity\_purchased,p.[shipping]

,COUNT(pi.[productid])OVER(partition by p.[purchaseid])

num\_product\_purchaseid

,[shipping]/COUNT(pi.[productid])OVER(partition by p.[purchaseid])

'partial\_shipping',p.[purchasedate]

,pi.cost\_quantity\_purchased+p.[shipping]/COUNT(pi.[productid])OVER(partition by p.[purchaseid]) 'cost\_quantity\_purchased\_with\_partial\_shipping' --shipping payed by airport\_X company

FROM(

SELECT [productid],[purchaseid],[quantity]\*[purchaseprice]

'cost\_quantity\_purchased' --(line of purchase order)

FROM[dbo].[DsSix\_PurchaseItem]

) pi

JOIN [dbo].[DsSix\_Purchase] p

ON pi.[purchaseid]=p.[purchaseid]

) pip

) pipq

GROUP BY YEAR(pipq.[purchasedate]),MONTH(pipq.[purchasedate])

)

--main query- join tables

SELECT st.year\_sal,st.month\_sal,ROUND(st.sum\_actual\_quantity\_sold-

ct.total\_cost\_quantity\_purchased\_with\_partial\_shipping-57941.93,2)

profit\_monthly

FROM sales\_airportx\_time st

JOIN cost\_airportx\_time ct

ON st.year\_sal=ct.year\_pur AND st.month\_sal=ct.month\_pur

ORDER BY 1,2

Query 9

'purchasing Vs shipping'

SELECT distinct q.[manufacturername],q.[state], SUM(sum\_purchaseid)OVER(partition by q.[manufacturername]) 'sum\_purchasing',sum(q.[shipping])OVER(partition by q.[manufacturername]) 'sum\_shipping' ,sum(q.[shipping])OVER(partition by q.[manufacturername])/SUM(sum\_purchaseid)OVER(partition by q.[manufacturername]) 'ratio'

FROM(

SELECT distinct m.[state],m.[manufacturername],pip.[purchaseid],pip.[shipping],SUM(pip.purchased\_quantiy)OVER(partition by pip.[purchaseid]) 'sum\_purchaseid'

FROM(

SElECT p.[purchaseid],p.[manufacturerid],p.[shipping],pi.[productid],pi.[quantity],pi.[purchaseprice],pi.[itemsize],pi.[quantity]\*pi.[purchaseprice] 'purchased\_quantiy'

FROM [dbo].[DsSix\_Purchase] p

JOIN [dbo].[DsSix\_PurchaseItem] pi

ON p.[purchaseid]=pi.[purchaseid]

) pip

JOIN [dbo].[DsSix\_Manufacturer] m

ON pip.[manufacturerid]=m.[manufacturerid]

) q

order by 5 asc

--query10

--sales vs shipping

SELECT distinct l.[state],total\_sale\_state,total\_shipping\_state,total\_tax\_state,total\_shipping\_state/total\_sale\_state ratio\_shipping\_sales,

total\_tax\_state/total\_sale\_state ratio\_tax\_sales

FROM(

SELECT c.[state],SUM(q.total\_saleIDs)OVER(partition by c.[state])

'total\_sale\_state',SUM(q.["Shipping"])OVER(partition by c.[state])

'total\_shipping\_state',SUM(q.["Tax"])OVER(partition by c.[state])

'total\_tax\_state'

FROM(

SELECT sisa.["SaleID"],sisa.["Shipping"],sisa.["Tax"],sisa.["CustomerID"],sisa.sold\_quantity,sisa.["ProductID"],SUM(sisa.sold\_quantity)OVER(partition by sisa.["SaleID"]) 'total\_saleIDs'

FROM(

SELECT sa.["SaleID"],sa.["Shipping"],sa.["Tax"],sa.["CustomerID"],si.sold\_quantity,si.["ProductID"]

FROM(

SELECT [SaleID],["ProductID"],["ItemSize"],["Quantity"]\*["SalePrice"]

'sold\_quantity'

FROM[dbo].[DsSix\_SaleItem]

) si

JOIN [dbo].[DsSix\_Sale] sa

ON si.[SaleID] =sa.["SaleID"]

) sisa

) q

JOIN [dbo].[DsSix\_customer] c

ON q.["CustomerID"] = c.[customerid]

) l

ORDER BY 5 desc

--QUERY 11

--query1-modified to state

--this query1 for using for customers analysis

WITH product\_brand\_data AS(

SELECT distinct pr.[productid],pr.[productname],pr.[category],man.[manufacturerid],man.[manufacturername],pr.gender,pr.color

FROM [dbo].[DsSix\_product] pr

LEFT JOIN [dbo].[DsSix\_Manufacturer] man

ON pr.[manufacturerid]=man.[manufacturerid]

)

SELECT sispbd.[category],sispbd.[productname],sispbd.[manufacturername],

sispbd.[SaleID],sispbd.["ProductID"],sispbd.actual\_quantity\_sold,sispbd.["SaleDate"],sispbd.["CustomerID"],sispbd.["Tax"],sispbd.partial\_tax,sispbd.partial\_tax/sispbd.actual\_quantity\_sold'ratetax/sales',sispbd.partial\_shipping,sispbd.partial\_shipping/sispbd.actual\_quantity\_sold 'rate ship/sales', c.[city],c.[state],c.[country],c.[streetaddress]

FROM(

SELECT pbd.[category],pbd.[productname],pbd.[manufacturername],

sis.[SaleID],sis.["ProductID"],sis.actual\_quantity\_sold,

sis.["SaleDate"],sis.["CustomerID"],sis.["Tax"],sis.["Shipping"],

count(sis.["ProductID"])OVER(partition by sis.[SaleID])

num\_items\_saleid,

sis.["Tax"]/count(sis.["ProductID"])OVER(partition by sis.[SaleID])

'partial\_tax',sis.["Shipping"]/count(sis.["ProductID"])OVER(partition by

sis.[SaleID]) 'partial\_shipping'

FROM(

SELECT si.[SaleID],si.["ProductID"],si.actual\_quantity\_sold,s.["SaleDate"],s.["CustomerID"],s.["Tax"],s.["Shipping"]

FROM(

SELECT [SaleID],["ProductID"],["Quantity"]\*["SalePrice"]

'actual\_quantity\_sold' --(line of sale order)

FROM[dbo].[DsSix\_SaleItem]

) si

JOIN [dbo].[DsSix\_Sale] s

ON si.[SaleID]=s.["SaleID"]

) sis

JOIN product\_brand\_data pbd

ON sis.["ProductID"]=pbd.[productid]

) sispbd

JOIN [dbo].[DsSix\_customer] c

ON sispbd.["CustomerID"]=c.[customerid]