/\*Task 13: Group By extensions or subtotal operators

--Task 13 **ROUGH WORK[DOUBLE CHECK FOR ERRORS]** - **work [ REMOVE UOP.DBO. AND THE $ SIGN AND THEN EXECUTE THE QUERIES.]**

for example the query

**SELECT \* FROM uop.dbo.FactSales$;**

Should be typed as

**SELECT \* FROM FactSales; \*/**

Try the following queries and have a look at the results. What are the differences between them? Do they do what you expect?

Rollup

Creates a group for each combination of column expressions and "rolls up" the results into subtotals and grand totals.\*/

/\*Rollup

Creates a group for each combination of column expressions and "rolls up" the results into subtotals and grand totals.\*/

Select Sum(SalesAmount) AS TotalSales , MONTH(FullDateTime) As PerMonth, Year(FullDateTime) As PerYear from UOP.DBO.FactSales$

Group by Rollup(MONTH(FullDateTime), YEAR(FullDateTime));

/\*Cube

Creates groups for all possible combinations of columns. For GROUP BY CUBE (a, b) the results have groups for unique values of (a, b), (NULL, b), (a, NULL), and (NULL, NULL).\*/

Select Sum(SalesAmount) AS TotalSales , MONTH(FullDateTime) As PerMonth, Year(FullDateTime) As PerYear from uop.dbo.FactSales$ Group by Cube(MONTH(FullDateTime), YEAR(FullDateTime));

--GROUPING SETS:

Select Sum(SalesAmount) AS TotalSales, MONTH(FullDateTime) As PerMonth, Year(FullDateTime) As PerYear

from uop.dbo.FactSales$

Group by Grouping sets (rollup(MONTH(FullDateTime),YEAR(FullDateTime)), cube(MONTH(FullDateTime), Year(FullDateTime)));

-- The results are the same as this query that returns a union of the two GROUP BY statements.

Select Sum(SalesAmount) AS TotalSales , MONTH(FullDateTime) As PerMonth, Year(FullDateTime) As PerYear from uop.dbo.FactSales$ Group by Rollup(MONTH(FullDateTime), YEAR(FullDateTime))

UNION ALL

Select Sum(SalesAmount) AS TotalSales , MONTH(FullDateTime) As PerMonth, Year(FullDateTime) As PerYear from uop.dbo.FactSales$ Group by Cube(MONTH(FullDateTime), YEAR(FullDateTime));

/\*Now your turn TO WRITE QUERY ON Task 13: Group By extensions or subtotal operators

1. List the amount of waste per month that is gifted grouped per month and year, as well as their grand totals.

3. List the amount of waste per month that is gifted grouped per month and year, as well as their cubed grand totals.

5. List the amount of waste per month that is gifted grouped per month and year, as well as their cubed grand totals using grouping sets.\*/

--QUERY 1,3,5

--Q1-Roll up

SELECT

MONTH(FullDate) As PerMonth, Year(FullDate) As PerYear,

SUM(Amount) AS TotalGiftedWaste

FROM uop.dbo.FactWaste$

WHERE ActionTaken = 'Gift'

Group by Rollup(YEAR(FullDate),MONTH(FullDate))

--Q3-Cube

SELECT

MONTH(FullDate) As PerMonth, Year(FullDate) As PerYear,

SUM(Amount) AS TotalGiftedWaste

FROM uop.dbo.FactWaste$

WHERE ActionTaken = 'Gift'

Group by Cube(YEAR(FullDate),MONTH(FullDate))

--Q5-Grouping Sets

SELECT

MONTH(FullDate) As PerMonth, Year(FullDate) As PerYear,

SUM(Amount) AS TotalGiftedWaste

FROM uop.dbo.FactWaste$

WHERE ActionTaken = 'Gift'

Group by Grouping sets (Rollup(YEAR(FullDate),MONTH(FullDate)), Cube(YEAR(FullDate),MONTH(FullDate)))

--Union

SELECT

MONTH(FullDate) As PerMonth, Year(FullDate) As PerYear,

SUM(Amount) AS TotalGiftedWaste

FROM uop.dbo.FactWaste$

WHERE ActionTaken = 'Gift'

Group by Rollup(YEAR(FullDate),MONTH(FullDate))

Union

SELECT

MONTH(FullDate) As PerMonth, Year(FullDate) As PerYear,

SUM(Amount) AS TotalGiftedWaste

FROM uop.dbo.FactWaste$

WHERE ActionTaken = 'Gift'

Group by Cube(YEAR(FullDate),MONTH(FullDate))

/\* 2. What is the amount of waste and the quantity of waste per month and year when the quantity of waste is at least 30, as well as their grand totals\*/

/\*4. What is the amount of waste and the quantity of waste per month and year when the quantity of waste is at least 30, as well as their cubed grand totals\*/

/\*6. What is the amount of waste and the quantity of waste per month and year when the quantity of waste is at least 30, as well as their cubed grand totals, using grouping sets.\*/

--QUERY 2,4,6

-- Q2-Roll up

Select sum(Quantity) as QuantityOfWaste, sum(Amount) as AmountOfWaste, MONTH(FullDate) as PerMonth, Year(FullDate) as PerYear

From uop.dbo.FactWaste$

where Quantity > 30

Group by Rollup(MONTH(FullDate), Year(FullDate))

--Q4-Cube

Select sum(Quantity) as QuantityOfWaste, sum(Amount) as AmountOfWaste, MONTH(FullDate) as PerMonth, Year(FullDate) as PerYear

From uop.dbo.FactWaste$

where Quantity > 30

Group by Cube(MONTH(FullDate), Year(FullDate))

-- Q6-Grouping sets

SELECT

MONTH(FullDate) As PerMonth, Year(FullDate) As PerYear,

SUM(Amount) AS TotalGiftedWasteAmount,

SUM(Quantity) AS TotalGiftedWasteQuantity

FROM uop.dbo.FactWaste$

WHERE ActionTaken = 'Gift'

AND Quantity >= 30

Group by Grouping sets (rollup(YEAR(FullDate),MONTH(FullDate)), Cube(YEAR(FullDate),MONTH(FullDate)))

--Union

Select sum(Quantity) as QuantityOfWaste, sum(Amount) as AmountOfWaste, MONTH(FullDate) as PerMonth, Year(FullDate) as PerYear

From uop.dbo.FactWaste$

where Quantity > 30

Group by Rollup(MONTH(FullDate), Year(FullDate))

Union

Select sum(Quantity) as QuantityOfWaste, sum(Amount) as AmountOfWaste, MONTH(FullDate) as PerMonth, Year(FullDate) as PerYear

From uop.dbo.FactWaste$

where Quantity > 30

Group by Cube(MONTH(FullDate), Year(FullDate))