Class 23 Homework Answers

# Homework

1. On the Sales.OrderLines table, write a query that will get OrderLine, OrderID, Description, the total line price (i.e. quantity \* unit price) and the total value of that order (i.e. partition by order).

SELECT OrderLineID,

OrderID,

Description,

Quantity \* UnitPrice AS TotalLinePrice,

SUM(Quantity \* UnitPrice) OVER ( PARTITION BY OrderID ) AS TotalOrderPrice

FROM Sales.OrderLines

ORDER BY OrderID;

1. Modify the query created above to display the percentage of the total order that this line represents (i.e. this line’s total price / the order’s total value)

SELECT OrderLineID,

OrderID,

Description,

Quantity \* UnitPrice AS TotalLinePrice,

CAST((Quantity \* UnitPrice) / SUM(Quantity \* UnitPrice) OVER ( PARTITION BY OrderID ) \* 100 AS DECIMAL(5,2)) AS PctOfOrderTotal,

SUM(Quantity \* UnitPrice) OVER ( PARTITION BY OrderID ) AS TotalOrderPrice

FROM Sales.OrderLines

ORDER BY OrderID;

1. Using Sales.OrderLines, for each order, rank the order lines by their total value.

SELECT OrderLineID,

OrderID,

Description,

Quantity \* UnitPrice AS TotalLinePrice,

RANK() OVER ( PARTITION BY OrderID ORDER BY (Quantity \* UnitPrice) ) AS OrderLineValueRank

FROM Sales.OrderLines

ORDER BY OrderID;

1. Using the MonthlySalesBySalesperson CTE available to you in the lesson, create the following queries:
   1. Create a query that will rank the year and month for each salesperson by sales. So, the resulting query show the years and months ranked from best to worst for each salesperson.

WITH MonthlySalesBySalesperson AS (

SELECT p.FullName,

YEAR(o.OrderDate) AS SalesYear,

MONTH(o.OrderDate) AS SalesMonth,

SUM(ol.Quantity \* ol.UnitPrice) AS TotalSales

FROM Sales.Orders o

JOIN Sales.OrderLines ol

ON o.OrderID = ol.OrderID

JOIN Application.People p

ON o.SalespersonPersonID = p.PersonID

GROUP BY p.FullName, YEAR(o.OrderDate), MONTH(o.OrderDate)

)

SELECT FullName,

SalesYear,

SalesMonth,

TotalSales,

RANK() OVER( PARTITION BY FullName ORDER BY TotalSales DESC ) AS MonthRankBySales

FROM MonthlySalesBySalesperson;

* 1. Create a query that will rank salespeople by monthly sales, showing the name and sales of the next highest person on the list.

WITH MonthlySalesBySalesperson AS (

SELECT p.FullName,

YEAR(o.OrderDate) AS SalesYear,

MONTH(o.OrderDate) AS SalesMonth,

SUM(ol.Quantity \* ol.UnitPrice) AS TotalSales

FROM Sales.Orders o

JOIN Sales.OrderLines ol

ON o.OrderID = ol.OrderID

JOIN Application.People p

ON o.SalespersonPersonID = p.PersonID

GROUP BY p.FullName, YEAR(o.OrderDate), MONTH(o.OrderDate)

)

SELECT FullName,

SalesYear,

SalesMonth,

TotalSales,

RANK() OVER( PARTITION BY SalesYear, SalesMonth ORDER BY TotalSales DESC ) AS MonthlyRankBySales,

LAG(FullName) OVER( PARTITION BY SalesYear, SalesMonth ORDER BY TotalSales DESC ) AS NextHighestSalesperson,

LAG(TotalSales) OVER( PARTITION BY SalesYear, SalesMonth ORDER BY TotalSales DESC ) AS NextHighestSales

FROM MonthlySalesBySalesperson;

* 1. Create a query that will rank salespeople by monthly sales, but also include the average sales for that month. Show how far above or below the average each salesperson is.

WITH MonthlySalesBySalesperson AS (

SELECT p.FullName,

YEAR(o.OrderDate) AS SalesYear,

MONTH(o.OrderDate) AS SalesMonth,

SUM(ol.Quantity \* ol.UnitPrice) AS TotalSales

FROM Sales.Orders o

JOIN Sales.OrderLines ol

ON o.OrderID = ol.OrderID

JOIN Application.People p

ON o.SalespersonPersonID = p.PersonID

GROUP BY p.FullName, YEAR(o.OrderDate), MONTH(o.OrderDate)

)

SELECT FullName,

SalesYear,

SalesMonth,

TotalSales,

RANK() OVER( PARTITION BY SalesYear, SalesMonth ORDER BY TotalSales DESC ) AS MonthlyRankBySales,

AVG(TotalSales) OVER( PARTITION BY SalesYear, SalesMonth ) AS MonthlyAverage,

TotalSales - AVG(TotalSales) OVER( PARTITION BY SalesYear, SalesMonth ) AS AmtOverAverage

FROM MonthlySalesBySalesperson;

* 1. Create query that will rank salespeople by monthly sales. Calculate what percentage of all sales that month were made by each salesperson. (i.e. sales for this salesperson / total sales for the month).

WITH MonthlySalesBySalesperson AS (

SELECT p.FullName,

YEAR(o.OrderDate) AS SalesYear,

MONTH(o.OrderDate) AS SalesMonth,

SUM(ol.Quantity \* ol.UnitPrice) AS TotalSales

FROM Sales.Orders o

JOIN Sales.OrderLines ol

ON o.OrderID = ol.OrderID

JOIN Application.People p

ON o.SalespersonPersonID = p.PersonID

GROUP BY p.FullName, YEAR(o.OrderDate), MONTH(o.OrderDate)

)

SELECT FullName,

SalesYear,

SalesMonth,

TotalSales,

RANK() OVER( PARTITION BY SalesYear, SalesMonth ORDER BY TotalSales DESC ) AS MonthlyRankBySales,

SUM(TotalSales) OVER( PARTITION BY SalesYear, SalesMonth ) AS MonthlyTotalSales,

TotalSales / SUM(TotalSales) OVER( PARTITION BY SalesYear, SalesMonth ) \* 100 AS PctOfMonthlySales

FROM MonthlySalesBySalesperson;