Group Functions

--1

select prod.CategoryID, count(\*) as CategoryCount

from [Northwind].[dbo].[Categories] cat

join [Northwind].[dbo].[Products] prod

on cat.CategoryID = prod.CategoryID

group by prod.CategoryID

having count(\*) >5

order by CategoryCount

--2

select LAST\_VALUE(OrderID) OVER (order by CustomerID) as LastOrder, \*

from [Northwind].[dbo].[Orders]

where CustomerID = 'VICTE'

--or

select top 1 \*

from [Northwind].[dbo].[Orders]

where CustomerID = 'VICTE'

order by OrderID desc

--or

select max(OrderID)

from [Northwind].[dbo].[Orders]

where CustomerID = 'VICTE'

--3

select min(lastname)

from [Northwind].[dbo].[Employees]

--4

select count(\*)

from [Northwind].[dbo].[Customers]

--5

select count(distinct CustomerID) AS DistinctCustomersSUM

from [Northwind].[dbo].[Orders]

--or

with DistinctCustomers as

(select distinct CustomerID

from [Northwind].[dbo].[Orders])

SELECT COUNT(\*) AS DistinctCustomersSUM

FROM DistinctCustomers

--6

select

(select count([EmployeeID])

from [Northwind].[dbo].[Employees]) as SumNumOfEmps,

(select count(ProductID)

from [Northwind].[dbo].[Products]) as SumNumOfProd,

(select count([EmployeeID])

from [Northwind].[dbo].[Employees]

where City = 'LONDON' ) as SumNumOfLondonEmps,

(select count([EmployeeID])

from [Northwind].[dbo].[Employees]

where City = 'Seattle') as SumNumOfSeattleEmps,

(select count(ProductID) as Odd

from [Northwind].[dbo].[Products]

where exists

(select ProductID,

case

when ProductID % 2 = 0 then 'Even'

else 'Odd'

end

from [Northwind].[dbo].[Products]) and ProductID % 2 <> 0) as SumNumOfOddProds,

(select count(ProductID) as Even

from [Northwind].[dbo].[Products]

where exists

(select ProductID,

case

when ProductID % 2 = 0 then 'Even'

else 'Odd'

end

from [Northwind].[dbo].[Products]) and ProductID % 2 = 0) as SumNumOfEvenProds,

(select top 1 count(\*) as NumOfOrders

from [Northwind].[dbo].[Orders]

group by EmployeeID

order by count(\*) desc) as MaxNumOfOrds

--7 the mistake is "round(avg(unitprice),2)" because we can't concatinate group function (like: round(avg(unitprice),2))

SELECT round(avg(unitprice),2) "AVG", ProductID

FROM products p

WHERE categoryid in(1,6,8)

GROUP BY ProductID

HAVING COUNT(\*)>3

ORDER BY "AVG" DESC

--8

select avg(unitprice) as SuppAVG, SupplierID

from [Northwind].[dbo].[Products]

group by SupplierID

having avg(unitprice) > 40

--9

select max(unitprice) as SuppMAX, SupplierID

from [Northwind].[dbo].[Products]

group by SupplierID

order by SupplierID desc

--10

select FirstName +' '+ LastName, EmployeeID

from [Northwind].[dbo].[Employees]

where FirstName like '%[a,b]%' and Region is not null and EmployeeID in

(select EmployeeID

from Employees

except

select distinct ReportsTo

from Employees)

--11

with aaa as

(select count(customerid) over(partition by Region) as CustomersPerRegion, Region, City

from [Northwind].[dbo].[Customers]

where City like '%[M,L]%' and Region is not null)

select CustomersPerRegion, Region, City

from aaa

where CustomersPerRegion >= 2

--12

select min(lastname) minLastName,

max(firstname) maxFirstName

from [Northwind].[dbo].[Employees]

--13

select max(UnitPrice) maxPrice,

min(unitprice) minPrice,

avg(unitprice) avgPrice,

CategoryID,

SupplierID

from Products

group by CategoryID, SupplierID

order by CategoryID, SupplierID

--14

select max(unitprice) maxUnitPrice, CategoryID

from Products

where UnitPrice > 40

group by CategoryID

--15

;with cte as

(select avg(unitprice) maxUnitPrice, SupplierID

from Products

group by SupplierID

having avg(unitprice) > 20)

select maxUnitPrice, Suppliers.CompanyName

from cte

join Suppliers

on cte.supplierID=Suppliers.SupplierID

order by maxUnitPrice

--16

select distinct year(orderdate)

from Orders

--17

select distinct o.CustomerID

from Orders o

join [Order Details] od

on o.OrderID=od.OrderID

where year(OrderDate) = 1996 and od.ProductID in (select od1.ProductID

from Orders o1

join [Order Details] od1

on o1.OrderID=od1.OrderID

join Customers c

on o1.CustomerID=c.CustomerID

where CompanyName like 'alfreds%'

and year(o1.OrderDate) between 1997 and 1998)

--or

;with cte as

(select od.ProductID

from Orders o

join [Order Details] od

on o.OrderID=od.OrderID

join Customers c

on o.CustomerID=c.CustomerID

where CompanyName like 'alfreds%'

and year(o.OrderDate) between 1997 and 1998)

select distinct o1.CustomerID

from Orders o1

join [Order Details] od1

on o1.OrderID=od1.OrderID

join cte

on od1.ProductID=cte.ProductID

where year(OrderDate) = 1996

--18

select

convert (varchar(10) , min(birthdate) , 113) minBirthDate,

convert (varchar(10) , max(birthdate) , 113) maxBirthDate

from employees

--19

select ProductName, UnitPrice

from Products

where UnitPrice < (select UnitPrice

from Products

where ProductID = 8)

order by UnitPrice

--20

select ProductName, UnitPrice

from Products

where UnitPrice > (select UnitPrice

from Products

where ProductName = 'tofu')

order by UnitPrice

--21

select ProductID, ProductName, UnitPrice

from Products

where UnitPrice > (select avg(UnitPrice)

from Products)

order by UnitPrice

--22

select \*

from Products

where CategoryID =(select CategoryID

from Products

where ProductName = 'chai')

and ProductName <> 'chai'

--23

select ProductName, UnitPrice

from Products

where UnitPrice > all (select UnitPrice

from Products

where CategoryID = 5)

order by UnitPrice

--or

select ProductName, UnitPrice

from Products

where UnitPrice > (select max(UnitPrice)

from Products

where CategoryID = 5)

order by UnitPrice

--24

select ProductName, UnitPrice

from Products

where UnitPrice > any (select UnitPrice

from Products

where CategoryID = 5)

order by UnitPrice

--or

select ProductName, UnitPrice

from Products

where UnitPrice > (select min(UnitPrice)

from Products

where CategoryID = 5)

order by UnitPrice

--25

select OrderID, OrderDate, ords.CustomerID, cust.Country

from (select \*

from Orders

where year(orderdate) = 1997) ords

inner join Customers cust

on ords.CustomerID=cust.CustomerID

where upper(cust.Country) in ('sweden', 'germany', 'france')

order by cust.Country

--26

;with cte as

(select prod.ProductID, prod.ProductName, prod.CategoryID, cat.CategoryName, prod.SupplierID

from Products prod

join Categories cat

on prod.CategoryID = cat.CategoryID

where upper(CategoryName) in ('beverages', 'condiments') )

select cte.ProductName, cte.CategoryName, cte.SupplierID, sup.Region

from cte

join Suppliers sup

on cte.SupplierID=sup.SupplierID

where sup.Region is null

--27

select ProductID, ProductName, UnitPrice

from Products

where UnitPrice > (select avg(UnitPrice)

from Products

where UnitsInStock > 50)

order by UnitPrice