BA710 Winter 2022

Module 2: Window Functions

Due: Thursday March 17th 11:59PM (grace period to Sunday March 20th 11:59PM)

Complete the following exercises and upload a screenshot of your Results Grid and Action Output (in this Word document) as well a completed SQL script template for the entire exercise. Please use comments in the SQL script to denote each question.

Please use Window functions for every question in this lab.

1. Create row numbers and a first order field for each country. Include ShipCountry, CustomerID, OrderID, and OrderDate. Your output should also contain a field for the earliest order for each country. Your output should also contain a row number for each record within a country. (e.g., France should start at 1 and count up; Belgium should then start at 1 and count up.)

select ShipCountry,CustomerID,OrderID,OrderDate, row\_number() over (partition by ShipCountry) as RowNumber, min(OrderDate) over (partition by ShipCountry) as EarliestOrderDate from ba710.orders;

Graphical user interface, text, application

Description automatically generated

2. Show the number of days between the current order and the previous order. Keep CustomerID, OrderID, OrderDate, a column for the previous order’s date and a column for the difference in days.

select CustomerID,OrderID,OrderDate,lag(OrderDate,1) OVER() as lag\_OrderDate, Date(OrderDate) - Date(lag(OrderDate,1) OVER()) as Difference from ba710.orders;

Graphical user interface, application, Teams

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3. What is the average unit price for each order. Include all columns from the OrderDetails table and a new column for average unit price.

SELECT \*,avg(UnitPrice) over(partition by OrderID) as AverageUnitPrice FROM ba710.orderdetails;

Graphical user interface, application

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4. Using the Customers table, how many customers are in each country? Keep CustomerID, CompanyName, Country and a new column for number of customers.

select CustomerID,CompanyName,Country,count(CustomerID) over (partition by Country) as NumberOfCustomers from ba710.customers;

Graphical user interface, application, Teams

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5. What is the maximum freight for each country. Keep OrderID, CustomerID, ShipVia, Freight and a new column for the maximum freight per country.

select OrderID,CustomerID,ShipVia,Freight,max(Freight) over (partition by ShipCountry) from ba710.orders;

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6. Calculate a moving average of freight when ordered by descending shipping date and ascending order\_id. Keep OrderID, CustomerID, ShipVia, ShippedDate and a new column for the moving average.

select OrderID,CustomerID,ShipVia,ShippedDate,avg(Freight) over (rows between 2 preceding and current row) as moving\_avg\_freight from ba710.orders order by ShippedDate desc, OrderID asc;

Graphical user interface, text, application, Word

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7. Now calculate a moving average of freight when ordered by descending shipping date and ascending order\_id using only the 5 preceding records. Keep OrderID, CustomerID, ShipVia, ShippedDate and a new column for the moving average.

select OrderID,CustomerID,ShipVia,ShippedDate,avg(Freight) over (rows between 5 preceding and 1 preceding) as moving\_avg\_freight from ba710.orders order by ShippedDate desc, OrderID asc;

Graphical user interface, application, Word

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8. What is the average unit price for each shipping date. You will need to join two tables. Keep ShippedDate, OrderID, UnitPrice and a new column for the average unit price per date.

select ShippedDate,o.OrderID as OrderID, UnitPrice, avg(UnitPrice) over (partition by (ShippedDate)) from ba710.orders as o

join ba710.orderdetails as od on o.OrderID=od.OrderID;

Graphical user interface, application

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