

Mini Project DE

Mini Project ini ditujukan untuk mengasah kemampuan peserta DSLS 2023 terkait ***data engineering***.

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Kelompok : 8A
Dokumentasi : Intermediate Queries
Tools : Microsoft SQL Server

Dokumen ini dibuat sebagai salah satu laporan dari Mini Project Data Engineering pada Bagian 2a (Transform).

1. Tulis query untuk mendapatkan jumlah customer tiap bulan yang melakukan order pada tahun 1997.

Query:

```
SELECT MONTH([OrderDate]) AS Month,  
       COUNT([CustomerID]) AS [Customer Count]  
FROM   dbo.Orders  
WHERE  YEAR([OrderDate]) = 1997  
GROUP BY MONTH([OrderDate]);
```

Hasil:

	Month	Customer Count
1	1	33
2	2	29
3	3	30
4	4	31
5	5	32
6	6	30
7	7	33
8	8	33
9	9	37
10	10	38
11	11	34
12	12	48

2. Tulis query untuk mendapatkan nama employee yang termasuk Sales Representative.

Query:

```
SELECT CONCAT([FirstName], ' ', [LastName]) AS EmployeeName,  
        Title  
FROM dbo.Employees  
WHERE [Title] = 'Sales Representative';
```

Hasil:

	EmployeeName	Title
1	Nancy Davolio	Sales Representative
2	Janet Leverling	Sales Representative
3	Margaret Peacock	Sales Representative
4	Michael Suyama	Sales Representative
5	Robert King	Sales Representative
6	Anne Dodsworth	Sales Representative

3. Tulis query untuk mendapatkan top 5 nama produk yang quantitynya paling banyak diorder pada bulan Januari 1997.

Query:

```
SELECT TOP 5 p.[ProductName],  
           SUM(od.Quantity) AS [Order Quantity]  
FROM dbo.[Order Details] AS od  
LEFT JOIN dbo.[Products] AS p  
  ON p.ProductID = od.ProductID  
LEFT JOIN dbo.[Orders] AS o  
  ON od.OrderID = o.OrderID  
WHERE o.OrderDate BETWEEN '1997-01-01' AND '1997-01-31'  
GROUP BY p.[ProductName]  
ORDER BY [Order Quantity] DESC;
```

Hasil:

Results Messages		
	ProductName	Order Quantity
1	Geitost	119
2	Raclette Courdavault	115
3	Gnocchi di nonna Alice	105
4	Vegie-spread	100
5	Côte de Blaye	99

4. Tulis query untuk mendapatkan nama company yang melakukan order Chai pada bulan Juni 1997.

Query:

```
SELECT c.CompanyName AS [Customer Name],
       p.ProductName AS [Product Name],
       CAST(o.OrderDate AS DATE) AS [Order Date]
FROM   dbo.Customers AS c
LEFT JOIN dbo.Orders AS o
      ON c.CustomerID = o.CustomerID
LEFT JOIN dbo.[Order Details] AS od
      ON o.OrderID = od.OrderID
LEFT JOIN dbo.Products AS p
      ON od.ProductID = p.ProductID
WHERE  p.ProductName = 'Chai'
       AND MONTH(OrderDate) = 6 AND YEAR(OrderDate) = 1997;
```

Hasil:

Results Messages			
	Customer Name	Product Name	Order Date
1	Tortuga Restaurante	Chai	1997-06-23

5. Tulis query untuk mendapatkan jumlah OrderID yang pernah melakukan pembelian (unit_price dikali quantity) ≤ 100 , $100 < x \leq 250$, $250 < x \leq 500$, dan > 500 .

Query:

```
WITH cte1 AS(
    SELECT OrderID, SUM(Quantity * UnitPrice) AS Purchase,
        CASE WHEN SUM(Quantity * UnitPrice) <= 100 THEN '<=100'
        WHEN SUM(Quantity * UnitPrice) > 100 AND SUM(Quantity * UnitPrice) <= 250 THEN '100<x<250'
        WHEN SUM(Quantity * UnitPrice) > 250 AND SUM(Quantity * UnitPrice) <= 500 THEN '250<x<500'
        ELSE '>500' END AS [Purchase Category]
    FROM [Order Details]
    GROUP BY OrderID)

SELECT [Purchase Category], COUNT(OrderID) AS [Number of OrderID]
FROM cte1
GROUP BY [Purchase Category]
ORDER BY [Number of OrderID];
```

Hasil:

	Purchase Category	Number of OrderID
1	<=100	37
2	100<x<250	64
3	250<x<500	118
4	>500	611

6. Tulis query untuk mendapatkan Company name pada tabel customer yang melakukan pembelian di atas 500 pada tahun 1997.

Query:

```
SELECT c.CompanyName,  
       SUM(od.UnitPrice * od.Quantity) AS Purchase  
FROM Customers AS c  
LEFT JOIN Orders AS o  
  ON c.CustomerID = o.CustomerID  
LEFT JOIN [Order Details] AS od  
  ON o.OrderID = od.OrderID  
WHERE od.UnitPrice * od.Quantity > 500  
      AND YEAR(o.OrderDate) = 1997  
GROUP BY c.CompanyName  
ORDER BY Purchase DESC;
```

Hasil:

	CompanyName	Purchase
1	QUICK-Stop	60595,70
2	Save-a-lot Markets	54273,74
3	Ernst Handel	48487,48
4	Mère Paillard	22205,20
5	Hungry Owl All-Night Grocers	21522,65
6	Rattlesnake Canyon Grocery	17614,60
7	Simons bistro	16192,45
8	Lehmanns Marktstand	11674,52
9	Folk och fä HB	11649,20
10	HILARION-Abastos	11010,58
11	Folies gourmandes	10069,00
12	Berglunds snabbköp	9854,50
13	Bon app'	9618,00
14	Richter Supermarkt	9396,54
15	Frankenversand	9121,36
16	Wartian Herkku	8778,90

7. Tulis query untuk mendapatkan nama produk yang merupakan Top 5 sales tertinggi tiap bulan di tahun 1997.

Query:

```
SELECT * FROM
(
    SELECT MONTH(o.OrderDate) AS Month,
           YEAR(o.OrderDate) AS Year,
           p.ProductName,
           SUM(od.UnitPrice * od.Quantity) AS Sales,
           ROW_NUMBER() OVER(PARTITION BY MONTH(o.OrderDate)
                             ORDER BY SUM(od.UnitPrice * od.Quantity) DESC) AS Rank
    FROM Orders AS o
    LEFT JOIN [Order Details] AS od ON o.OrderID = od.OrderID
    LEFT JOIN Products AS p ON p.ProductID = od.ProductID
    WHERE YEAR(o.OrderDate) = 1997
    GROUP BY MONTH(o.OrderDate),
             YEAR(o.OrderDate),
             p.ProductName) AS Subquery
WHERE Rank < 6;
```

Hasil:

Results		Messages			
	Month	Year	ProductName	Sales	Rank
1	1	1997	Côte de Blaye	20869,20	1
2	1	1997	Raclette Courdavault	5060,00	2
3	1	1997	Vegie-spread	3510,00	3
4	1	1997	Gnocchi di nonna Alice	3192,00	4
5	1	1997	Alice Mutton	3026,40	5
6	2	1997	Pâté chinois	3456,00	1
7	2	1997	Sirop d'érable	2622,00	2
8	2	1997	Gnocchi di nonna Alice	2523,20	3
9	2	1997	Thüringer Rostbratwurst	2376,00	4
10	2	1997	Rössle Sauerkraut	2074,80	5
11	3	1997	Raclette Courdavault	7128,00	1
12	3	1997	Côte de Blaye	6324,00	2
13	3	1997	Manjimup Dried Apples	1950,40	3
14	3	1997	Thüringer Rostbratwurst	1782,00	4
15	3	1997	Camembert Pierrot	1632,00	5

8. Buatlah view untuk melihat Order Details yang berisi OrderID, ProductID, ProductName, UnitPrice, Quantity, Discount, Harga setelah diskon.

Query:

```
CREATE VIEW [Order Details View] AS
SELECT od.OrderID,
       od.ProductID,
       p.ProductName,
       od.UnitPrice,
       od.Quantity,
       od.Discount,
       (od.UnitPrice * od.Quantity - od.Discount) AS [Price After Discount]
FROM [Order Details] od
LEFT JOIN Products p ON od.ProductID = p.ProductID;
```

Melihat View:

```
SELECT TOP (1000) [OrderID]
, [ProductID]
, [ProductName]
, [UnitPrice]
, [Quantity]
, [Discount]
, [Price After Discount]
FROM [Northwind].[dbo].[Order Details View]
```

Hasil:

	OrderID	ProductID	ProductName	UnitPrice	Quantity	Discount	Price After Discount
1	10248	11	Queso Cabrales	14,00	12	0	168
2	10248	42	Singaporean Hokkien Fried Mee	9,80	10	0	98
3	10248	72	Mozzarella di Giovanni	34,80	5	0	174
4	10249	14	Tofu	18,60	9	0	167,4
5	10249	51	Manjimup Dried Apples	42,40	40	0	1696
6	10250	41	Jack's New England Clam Chowder	7,70	10	0	77
7	10250	51	Manjimup Dried Apples	42,40	35	0,15	1483,85
8	10250	65	Louisiana Fiery Hot Pepper Sauce	16,80	15	0,15	251,85
9	10251	22	Gustaf's Knäckebröd	16,80	6	0,05	100,75
10	10251	57	Ravioli Angelo	15,60	15	0,05	233,95
11	10251	65	Louisiana Fiery Hot Pepper Sauce	16,80	20	0	336
12	10252	20	Sir Rodney's Marmalade	64,80	40	0,05	2591,95
13	10252	33	Geitost	2,00	25	0,05	49,95
14	10252	60	Camembert Pierrot	27,20	40	0	1088
15	10253	31	Gorgonzola Telino	10,00	20	0	200

9. Buatlah procedure Invoice untuk memanggil CustomerID, CustomerName/company name, OrderID, OrderDate, RequiredDate, ShippedDate jika terdapat inputan CustomerID tertentu.

Query:

```
WITH cte AS
(
    SELECT c.CustomerID,
           c.CompanyName AS [Customer Name],
           o.OrderID,
           CAST(o.OrderDate AS DATE) AS [Order Date],
           CAST(o.RequiredDate AS DATE) AS [Required Date],
           CAST(o.ShippedDate AS DATE) AS [Shipped Date]
    FROM Customers AS c
    LEFT JOIN Orders AS o ON c.CustomerID = o.CustomerID
)
SELECT * FROM cte WHERE CustomerID = 'HANAR';
```

Hasil:

Input CustomerID disini

Results		Messages				
	CustomerID	Customer Name	OrderID	Order Date	Required Date	Shipped Date
1	HANAR	Hanari Carnes	10250	1996-07-08	1996-08-05	1996-07-12
2	HANAR	Hanari Carnes	10253	1996-07-10	1996-07-24	1996-07-16
3	HANAR	Hanari Carnes	10541	1997-05-19	1997-06-16	1997-05-29
4	HANAR	Hanari Carnes	10645	1997-08-26	1997-09-23	1997-09-02
5	HANAR	Hanari Carnes	10690	1997-10-02	1997-10-30	1997-10-03
6	HANAR	Hanari Carnes	10770	1997-12-09	1998-01-06	1997-12-17
7	HANAR	Hanari Carnes	10783	1997-12-18	1998-01-15	1997-12-19
8	HANAR	Hanari Carnes	10886	1998-02-13	1998-03-13	1998-03-02
9	HANAR	Hanari Carnes	10903	1998-02-24	1998-03-24	1998-03-04
10	HANAR	Hanari Carnes	10922	1998-03-03	1998-03-31	1998-03-05
11	HANAR	Hanari Carnes	10925	1998-03-04	1998-04-01	1998-03-13
12	HANAR	Hanari Carnes	10981	1998-03-27	1998-04-24	1998-04-02
13	HANAR	Hanari Carnes	11022	1998-04-14	1998-05-12	1998-05-04
14	HANAR	Hanari Carnes	11052	1998-04-27	1998-05-25	1998-05-01