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Mini Project : Data Engineer

Intermediate Queries

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

Query:

```
WITH CTE AS (  
    SELECT DATEPART(MONTH, OrderDate) A, DATENAME(MONTH, OrderDate) [Month]  
    ,COUNT(DISTINCT CustomerID) JumlahCustomer  
    FROM [Northwind].[dbo].[Orders]  
    WHERE DATEPART(YEAR, OrderDate) = 1997  
    GROUP BY DATEPART(MONTH, OrderDate), DATENAME(MONTH, OrderDate))  
  
SELECT [Month], JumlahCustomer  
FROM CTE  
ORDER BY A;
```

Hasil:

	Month	JumlahCustomer
1	January	27
2	February	21
3	March	24
4	April	27
5	May	26
6	June	25
7	July	25
8	August	30
9	September	27
10	October	28
11	November	27
12	December	37

2. Query untuk mendapatkan nama employee yang termasuk Sales Representative.

Query:

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

Hasil:

	Employees Name (Sales Representative)
1	Nancy Davolio
2	Janet Leverling
3	Margaret Peacock
4	Michael Suyama
5	Robert King
6	Anne Dodsworth

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

Query:

```
SELECT TOP(5) p.ProductID, p.ProductName, SUM(od.Quantity) 'TotalQuantity'
FROM [Northwind].[dbo].[Order Details] od
LEFT JOIN [Northwind].[dbo].[Products] p
ON od.ProductID = p.ProductID
WHERE OrderID in (
    SELECT OrderID
    FROM [Northwind].[dbo].[Orders]
    WHERE DATEPART(YEAR, OrderDate) = 1997 AND DATEPART(MONTH, OrderDate) = 1)
GROUP BY p.ProductID, p.ProductName
ORDER BY TotalQuantity DESC;
```

Hasil:

	ProductID	ProductName	TotalQuantity
1	33	Geitost	119
2	59	Raclette Courdavault	115
3	56	Gnocchi di nonna Alice	105
4	63	Vegie-spread	100
5	38	Côte de Blaye	99

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

Query:

```
SELECT DISTINCT o.CustomerID, c.CompanyName
FROM [Northwind].[dbo].[Orders] o
JOIN [Northwind].[dbo].[Customers] c
ON o.CustomerID = c.CustomerID
JOIN [Northwind].[dbo].[Order Details] od
ON o.OrderID = od.OrderID
JOIN [Northwind].[dbo].[Products] p
ON od.ProductID = p.ProductID
WHERE p.ProductName = 'Chai'
AND DATEPART(YEAR, OrderDate) = 1997 AND DATEPART(MONTH, OrderDate) = 6;
```

Hasil:

	CustomerID	CompanyName
1	TORTU	Tortuga Restaurante

5. 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 CTE AS (  
    SELECT OrderID, SUM(UnitPrice*Quantity) PurchaseAmount  
    FROM [Northwind].[dbo].[Order Details]  
    GROUP BY OrderID)  
  
SELECT PurchaseRange, COUNT(*) AS TotalOrder  
FROM (SELECT  
    CASE  
        WHEN PurchaseAmount <= 100 THEN '<= 100'  
        WHEN PurchaseAmount > 100 AND PurchaseAmount <= 250 THEN '100 < x <=250'  
        WHEN PurchaseAmount > 250 AND PurchaseAmount <= 500 THEN '250 < x <=500'  
        WHEN PurchaseAmount > 500 THEN '> 500'  
    END AS PurchaseRange  
    FROM CTE) AS A  
GROUP BY PurchaseRange  
ORDER BY PurchaseRange;
```

Hasil:

	PurchaseRange	TotalOrder
1	<= 100	37
2	> 500	611
3	100 < x <=250	64
4	250 < x <=500	118

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

Query:

```
WITH CTE AS (  
    SELECT OrderID, SUM(UnitPrice*Quantity) PurchaseAmount  
    FROM [Northwind].[dbo].[Order Details]  
    GROUP BY OrderID)  
  
SELECT DISTINCT c.CompanyName  
FROM [Northwind].[dbo].[Orders] o  
LEFT JOIN [Northwind].[dbo].[Customers] c  
    ON o.CustomerID = c.CustomerID  
WHERE o.OrderID in (  
    SELECT OrderID  
    FROM CTE  
    WHERE PurchaseAmount > 500)  
AND DATEPART(YEAR, OrderDate) = 1997;
```

Hasil:

	CompanyName
1	Alfreds Futterkiste
2	Antonio Moreno Taqueria
3	Around the Horn
4	Berglunds snabbköp
5	Blondesddal père et fils
6	Bólido Comidas preparadas
7	Bon app'
8	Bottom-Dollar Markets
9	B's Beverages
10	Chop-suey Chinese
11	Comércio Mineiro
12	Consolidated Holdings
13	Die Wandernde Kuh
14	Eastern Connection
15	Ernst Handel
16	Familia Arquibaldo
17	Folies gourmandes
18	Folk och fä HB

Query executed successfully. 71 rows

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

Query:

```
WITH CTE AS (SELECT DATENAME(MONTH, o.OrderDate) [Month],  
                p.ProductName, SUM(od.Quantity) TotalQuantity,  
                ROW_NUMBER() OVER(PARTITION BY DATEPART(MONTH, o.OrderDate) ORDER BY SUM(od.Quantity) DESC) AS QR  
FROM [Northwind].[dbo].[Order Details] od  
JOIN [Northwind].[dbo].[Orders] o ON o.OrderID = od.OrderID  
JOIN [Northwind].[dbo].[Products] P ON od.ProductID = p.ProductID  
WHERE DATEPART(YEAR, o.OrderDate) = 1997  
GROUP BY DATEPART(MONTH, o.OrderDate), DATENAME(month, o.OrderDate), p.ProductName)  
  
SELECT [Month], ProductName, TotalQuantity  
FROM CTE  
WHERE QR <= 5;
```

Hasil:

	Month	ProductName	TotalQuantity
1	January	Geitost	119
2	January	Raclette Courdavault	115
3	January	Gnocchi di nonna Alice	105
4	January	Veggie-spread	100
5	January	Côte de Blaye	99
6	February	Pâté chinois	180
7	February	Sirop d'érable	115
8	February	Tourtière	101
9	February	Gula Malacca	100
10	February	Pavlova	85
11	March	Raclette Courdavault	162
12	March	Guaranà Fantástica	133
13	March	Outback Lager	72
14	March	Boston Crab Meat	61
15	March	Camembert Pierrot	60
16	April	Gnocchi di nonna Alice	154
17	April	Schoggi Schokolade	120
18	April	Jack's New England Clam Chowder	110
19	April	Camembert Pierrot	106
20	April	Rhônebräu Klosterbier	86
21	May	Gorgonzola Telino	135
22	May	Inlagd Sill	120
23	May	Rogede sild	100
24	May	Chef Anton's Cajun Seasoning	100
25	May	Queso Cabrales	93
26	June	Gorgonzola Telino	171
27	June	Rhônebräu Klosterbier	126
28	June	Gnocchi di nonna Alice	100
29	June	Filo Mix	100
30	June	Manjimup Dried Apples	93
31	July	Camembert Pierrot	125
32	July	Sirop d'érable	120
33	July	Singaporean Hokkien Fried Mee	100
34	July	Alice Mutton	100
35	July	Lakkalikööri	94
36	August	Chang	100
37	August	Sir Rodney's Scones	97

Query executed successfully. 60 rows

- View untuk melihat Order Details yang berisi OrderID, ProductID, ProductName, UnitPrice, Quantity, Discount, Harga setelah diskon.

Query membuat view:

```
CREATE VIEW OrderDetails
AS
SELECT OrderID, od.ProductID, ProductName, od.UnitPrice, Quantity, Discount,
       (od.UnitPrice*Quantity*(1-Discount)) AS TotalPayment
FROM [Northwind].[dbo].[Order Details] od
JOIN [Northwind].[dbo].[Products] p ON p.ProductID = od.ProductID;
```

Query data dari view:

```
SELECT *
FROM OrderDetails
```

Hasil:

	OrderID	ProductID	ProductName	UnitPrice	Quantity	Discount	TotalPayment
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	1261.4
8	10250	65	Louisiana Fiery Hot Pepper Sauce	16.80	15	0.15	214.2
9	10251	22	Quarf's Knäckebröd	16.80	6	0.05	95.76
10	10251	57	Revoli Ängels	15.60	15	0.05	222.3
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	2462.4
13	10252	33	Geitost	2.00	25	0.05	47.5
14	10252	60	Camembert Pierrot	27.20	40	0	1088
15	10253	31	Gorgonzola Telino	10.00	20	0	200
16	10253	39	Charitreuse verte	14.40	42	0	604.8
17	10253	49	Maxilaku	16.00	40	0	640
18	10254	24	Guaranà Fantástica	3.60	15	0.15	45.9

Query executed successfully. 2,155 rows

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

Query membuat procedure:

```
CREATE PROCEDURE Invoice
(
    @CustomerID VARCHAR(5)
)
AS
BEGIN
    SELECT c.CustomerID, c.CompanyName, o.OrderID, o.OrderDate, o.RequiredDate, o.ShippedDate
    FROM [Northwind].[dbo].[Customers] c
    JOIN [Northwind].[dbo].[Orders] o ON c.CustomerID = o.CustomerID
    WHERE c.CustomerID = @CustomerID
END;
```

Query memanggil procedure dengan input CustomerID:

```
EXEC Invoice CACTU;
```

Hasil:

	CustomerID	CompanyName	OrderID	OrderDate	RequiredDate	ShippedDate
1	CACTU	Cactus Comidas para llevar	10521	1997-04-29 00:00:00.000	1997-05-27 00:00:00.000	1997-05-02 00:00:00.000
2	CACTU	Cactus Comidas para llevar	10782	1997-12-17 00:00:00.000	1998-01-14 00:00:00.000	1997-12-22 00:00:00.000
3	CACTU	Cactus Comidas para llevar	10819	1998-01-07 00:00:00.000	1998-02-04 00:00:00.000	1998-01-16 00:00:00.000
4	CACTU	Cactus Comidas para llevar	10881	1998-02-11 00:00:00.000	1998-03-11 00:00:00.000	1998-02-18 00:00:00.000
5	CACTU	Cactus Comidas para llevar	10937	1998-03-10 00:00:00.000	1998-03-24 00:00:00.000	1998-03-13 00:00:00.000
6	CACTU	Cactus Comidas para llevar	11054	1998-04-28 00:00:00.000	1998-05-26 00:00:00.000	NULL