

Mini Project Data Engineering

Intermediate Queries

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

Query:

```
Select
    MONTH(A.OrderDate) as Bulan,
    COUNT(A.CustomerID) as Jumlah_Customer
From
    Orders A
JOIN
    Customers B ON A.CustomerID = B.CustomerID
WHERE
    YEAR(OrderDate) = 1997
GROUP BY
    MONTH(A.OrderDate);
```

Result:

	Bulan	Jumlah_Customer
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) EmployeeName, Title
from
    Employees
where
    Title = 'Sales Representative';
```

Result:

	EmployeeName	Title
1	NancyDavolio	Sales Representative
2	JanetLeverling	Sales Representative
3	MargaretPeacock	Sales Representative
4	MichaelSuyama	Sales Representative
5	RobertKing	Sales Representative
6	AnneDodsworth	Sales Representative

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

Query:

```
select
  TOP 5
  c.ProductName,
  SUM(b.Quantity) as Total_Quantity
from
  Orders a
  JOIN [Order Details] b
  ON a.OrderID = b.OrderID
  JOIN Products c
  ON b.ProductID = c.ProductID
WHERE
  MONTH(a.OrderDate) = 1 AND
  YEAR(a.OrderDate) = 1997
GROUP BY
  c.ProductName
ORDER BY
  Total_Quantity DESC;
```

Result:

	ProductName	Total_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
  a.ProductName, b.CompanyName
from
  Products a
  join Suppliers b
  on a.SupplierID = b.SupplierID
  join [Order Details] c
  on a.ProductID = c.ProductID
  join Orders d
  on c.OrderID = d.OrderID
where
  a.ProductName = 'Chai' AND
  year(d.OrderDate) = 1997 AND
  month(d.OrderDate) = 6;
```

Result:

	ProductName	CompanyName
1	Chai	Exotic Liquids

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:

```
select
  case
    when (UnitPrice*Quantity) <= 100 then '<='
    when (UnitPrice*Quantity) between 100 and 250 then '100 < x <= 250'
    when (UnitPrice*Quantity) between 250 and 500 then '250 < x <= 500'
    else '> 500'
  end 'Price Range',
  count(distinct OrderID) 'Jumlah OrderID'
from
  [Order Details]
group by
  case
    when (UnitPrice*Quantity) <= 100 then '<='
    when (UnitPrice*Quantity) between 100 and 250 then '100 < x <= 250'
    when (UnitPrice*Quantity) between 250 and 500 then '250 < x <= 500'
    else '> 500'
  end;
```

Result:

	Price Range	Jumlah OrderID
1	<=	269
2	> 500	502
3	100 < x <= 250	382
4	250 < x <= 500	425

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

Query:

```
select
  a.CompanyName, SUM(c.Quantity) Total_Quantity
from
  Customers a
  join Orders b
    on a.CustomerID = b.CustomerID
  join [Order Details] c
    on b.OrderID = c.OrderID
where
  year(b.OrderDate) = 1997
group by
  a.CompanyName
having
  SUM(c.Quantity) > 500;
```

Result:

	CompanyName	Total_Quantity
1	HILARION-Abastos	650
2	Wartian Herkku	550
3	Queen Cozinha	527
4	QUICK-Stop	2172
5	Frankenversand	597
6	Save-a-lot Markets	2574
7	White Clover Markets	518
8	Mère Paillarde	750
9	Ernst Handel	1950
10	Rattlesnake Canyo...	540
11	Hungry Owl All-Nigh...	799

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

Query:

```
WITH top_5_per_month AS (
    SELECT
        c.ProductName,
        MONTH(a.OrderDate) AS Bulan,
        SUM(b.Quantity) AS Total_Quantity,
        ROW_NUMBER() OVER (PARTITION BY MONTH(a.OrderDate) ORDER BY SUM(b.Quantity) DESC) AS rank
    FROM Orders a
    JOIN [Order Details] b ON a.OrderID = b.OrderID
    JOIN Products c ON b.ProductID = c.ProductID
    WHERE YEAR(a.OrderDate) = 1997
    GROUP BY c.ProductName, MONTH(a.OrderDate)
)
SELECT
    Bulan, ProductName, Total_Quantity
FROM
    top_5_per_month
WHERE
    rank <= 5
ORDER BY
    Bulan ASC, Total_Quantity DESC;
```

Result:

	Bulan	ProductName	Total_Quantity
1	1	Geitost	119
2	1	Raclette Courdavault	115
3	1	Gnocchi di nonna Alice	105
4	1	Vegie-spread	100
5	1	Côte de Blaye	99
6	2	Pâté chinois	180
7	2	Sirop d'érable	115
8	2	Tourtière	101
9	2	Gula Malacca	100
10	2	Pavlova	85
11	3	Raclette Courdavault	162
12	3	Guaraná Fantástica	133
13	3	Outback Lager	72
14	3	Boston Crab Meat	61
15	3	Camembert Pierrot	60
16	4	Gnocchi di nonna Alice	154
17	4	Schoggi Schokolade	120
18	4	Jack's New England ...	110
19	4	Camembert Pierrot	106
20	4	Rhönbräu Klosterbier	86

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

Query:

```
select
    a.OrderID, a.ProductID, b.ProductName, a.UnitPrice, a.Quantity, a.Discount,
    (a.UnitPrice-(a.UnitPrice*a.Discount)) 'Harga Setelah Diskon'
from
    [Order Details] a
join Products b
on a.ProductID = b.ProductID
join Orders c
on a.OrderID = c.OrderID;
```

Result:

	OrderID	ProductID	ProductName	UnitPrice	Quantity	Discount	Harga Setelah Diskon
1	10248	11	Queso Cabrales	14.00	12	0	14
2	10248	42	Singaporean Hokkien Fried Mee	9.80	10	0	9.8
3	10248	72	Mozzarella di Giovanni	34.80	5	0	34.8
4	10249	14	Tofu	18.60	9	0	18.6
5	10249	51	Manjimup Dried Apples	42.40	40	0	42.4
6	10250	41	Jack's New England Clam Chowder	7.70	10	0	7.7
7	10250	51	Manjimup Dried Apples	42.40	35	0.15	36.04
8	10250	65	Louisiana Fiery Hot Pepper Sauce	16.80	15	0.15	14.28
9	10251	22	Gustaf's Knäckebröd	16.80	6	0.05	15.96

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

Query:

```
CREATE PROCEDURE Invoice1 (@CustomerID varchar(5))
AS
BEGIN
    SELECT
        a.CustomerID, b.CompanyName, a.OrderID, a.OrderDate, a.RequiredDate, a.ShippedDate
    FROM
        Orders a
    JOIN Customers b
    ON a.CustomerID = b.CustomerID
    WHERE
        a.CustomerID = @CustomerID
END

EXEC Invoice1 @CustomerID = 'LEHMS'
```

Result:

	CustomerID	CompanyName	OrderID	OrderDate	RequiredDate	ShippedDate
1	LEHMS	Lehmanns Marktstand	10279	1996-08-13 00:00:00.000	1996-09-10 00:00:00.000	1996-08-16 00:00:00.000
2	LEHMS	Lehmanns Marktstand	10284	1996-08-19 00:00:00.000	1996-09-16 00:00:00.000	1996-08-27 00:00:00.000
3	LEHMS	Lehmanns Marktstand	10343	1996-10-31 00:00:00.000	1996-11-28 00:00:00.000	1996-11-06 00:00:00.000
4	LEHMS	Lehmanns Marktstand	10497	1997-04-04 00:00:00.000	1997-05-02 00:00:00.000	1997-04-07 00:00:00.000
5	LEHMS	Lehmanns Marktstand	10522	1997-04-30 00:00:00.000	1997-05-28 00:00:00.000	1997-05-06 00:00:00.000
6	LEHMS	Lehmanns Marktstand	10534	1997-05-12 00:00:00.000	1997-06-09 00:00:00.000	1997-05-14 00:00:00.000
7	LEHMS	Lehmanns Marktstand	10536	1997-05-14 00:00:00.000	1997-06-11 00:00:00.000	1997-06-06 00:00:00.000
8	LEHMS	Lehmanns Marktstand	10557	1997-06-03 00:00:00.000	1997-06-17 00:00:00.000	1997-06-06 00:00:00.000