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

Query:

```
WITH used_data AS (
      SELECT CustomerID, MONTH(OrderDate) as MonthOrder
      FROM dbo.Orders
      WHERE YEAR(OrderDate) = 1997
)
SELECT MonthOrder, COUNT(DISTINCT CustomerID) as CostumerCount
FROM used_data
GROUP BY MonthOrder
ORDER BY MonthOrder;
```

Result:

	MonthOrder	CostumerCount
1	1	27
2	2	21
3	3	24
4	4	27
5	5	26
6	6	25
7	7	25
8	8	30
9	9	27
10	10	28
11	11	27
12	12	37

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

Query:

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

Result:

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

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

Query:

```
WITH january_order AS (
        SELECT *
        FROM dbo.Orders
        WHERE MONTH(OrderDate) = 1 AND YEAR(OrderDate) = 1997
), order_detail AS (
        SELECT o.OrderID, od.ProductID
        FROM dbo.Orders as o
        JOIN dbo.[Order Details] as od
                ON o.OrderID = od.OrderID
), top_5_order AS (
        SELECT ProductID, COUNT(*) as OrderCount
        FROM order_detail
        GROUP BY ProductID
        ORDER BY OrderCount DESC
        OFFSET 0 ROWS FETCH NEXT 5 ROWS ONLY
), product_detail AS (
        SELECT p.ProductName
        FROM top_5_order as t5
        JOIN dbo.Products as p
                ON t5.ProductID = p.ProductID
)
SELECT * FROM product_detail;
```

Result:

	ProductName
1	Raclette Courdavault
2	Guaraná Fantástica
3	Gorgonzola Telino
4	Camembert Pierrot
5	Gnocchi di nonna Alice

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

Query:

```
WITH chai_data AS (
       SELECT ProductID
       FROM dbo.Products
       WHERE ProductName = 'Chai'
), filtered_order_detail AS (
       SELECT *
       FROM dbo.[Order Details]
       WHERE ProductID = (
               SELECT ProductID FROM chai_data
       )
), filtered_order AS (
       SELECT *
       FROM dbo.Orders
       WHERE MONTH(OrderDate) = 6 AND YEAR(OrderDate) = 1997
), used_order AS (
       SELECT o.OrderID, o.CustomerID
       FROM filtered_order as o
       JOIN filtered_order_detail as od
               ON o.OrderID = od.OrderID
), company_detail AS (
       SELECT DISTINCT c.CompanyName
       FROM used_order as uo
       JOIN dbo.Customers as c
               ON uo.CustomerID = c.CustomerID
)
SELECT CompanyName FROM company_detail;
```

Result:

	CompanyName
1	Tortuga Restaurante

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

Query:

```
WITH merged_data AS (
        SELECT o.OrderID, SUM(od.UnitPrice * od.Quantity) as sales
        FROM dbo.Orders as o
        JOIN dbo.[Order Details] as od
                ON o.OrderID = od.OrderID
        GROUP BY o.OrderID
), categorized_data AS (
        SELECT OrderID, sales,
        CASE
                WHEN sales <= 100 THEN '<= 100'
                WHEN 100 < sales AND sales <= 250 THEN '100 < x <= 250'
                WHEN 250 < sales AND sales <= 500 THEN '250 < x <= 500'
                WHEN sales > 500 THEN '> 500'
        END as category
        FROM merged_data
), grouped_data AS (
        SELECT category, COUNT(OrderID) as count
        FROM categorized_data
        GROUP BY category
)
SELECT * FROM grouped_data;
```

Result:

	category	count
1	> 500	611
2	<= 100	37
3	250 < x <= 500	118
4	100 < x <= 250	64

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

Query:

```
WITH filtered_order AS (
        SELECT *
        FROM dbo.Orders
        WHERE YEAR(OrderDate) = 1997
), merged_data AS (
        SELECT o.OrderID, o.CustomerID, SUM(od.UnitPrice * od.Quantity) as sales
        FROM filtered_order as o
        JOIN dbo.[Order Details] as od
                ON o.OrderID = od.OrderID
        GROUP BY o.OrderID, o.CustomerID
        HAVING SUM(od.UnitPrice * od.Quantity) > 500
), company_data AS (
        SELECT DISTINCT c.CompanyName
        FROM merged_data as m
        JOIN dbo.Customers as c
                ON m.CustomerID = c.CustomerID
)
SELECT * FROM company_data;
```

Result:

	CompanyName
1	Alfreds Futterkiste
2	Antonio Moreno Taquería
3	Around the Horn
4	Berglunds snabbköp
5	Blondesddsl 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

	CompanyName
13	Die Wandernde Kuh
14	Eastern Connection
15	Ernst Handel
16	Familia Arquibaldo
17	Folies gourmandes
18	Folk och fä HB
19	France restauration
20	Frankenversand
21	Furia Bacalhau e Frutos d...
22	Godos Cocina Típica
23	Gourmet Lanchonetes
24	Great Lakes Food Market
25	Hanari Carnes
26	HILARION-Abastos
27	Hungry Coyote Import Store

	CompanyName
25	Hanari Carnes
26	HILARION-Abastos
27	Hungry Coyote Import Store
28	Hungry Owl All-Night Gro...
29	Island Trading
30	Königlich Essen
31	La maison d'Asie
32	Lehmanns Marktstand
33	Let's Stop N Shop
34	LILA-Supermercado
35	LINO-Delicateses
36	Lonesome Pine Restaurant
37	Magazzini Alimentari Riuniti
38	Maison Dewey
39	Mère Paillarde

	CompanyName
40	Morgenstern Gesundkost
41	Old World Delicatessen
42	Ottilies Käseladen
43	Pericles Comidas clásicas
44	Piccolo und mehr
45	Princesa Isabel Vinhos
46	Que Delícia
47	Queen Cozinha
48	QUICK-Stop
49	Rancho grande
50	Rattlesnake Canyon Gro...
51	Reggiani Caseifici
52	Ricardo Adocicados
53	Richter Supermarkt
54	Save-a-lot Markets

	CompanyName
55	Seven Seas Imports
56	Simons bistro
57	Split Rail Beer & Ale
58	Suprêmes délices
59	The Big Cheese
60	The Cracker Box
61	Toms Spezialitäten
62	Tortuga Restaurante
63	Tradição Hipermercados
64	Trail's Head Gourmet Pro...
65	Vaffeljernet
66	Victuailles en stock
67	Wartian Herkku
68	Wellington Importadora
69	White Clover Markets

	CompanyName
58	Suprêmes délices
59	The Big Cheese
60	The Cracker Box
61	Toms Spezialitäten
62	Tortuga Restaurante
63	Tradição Hipermercados
64	Trail's Head Gourmet Pro...
65	Vaffeljernet
66	Victuailles en stock
67	Wartian Herkku
68	Wellington Importadora
69	White Clover Markets
70	Wilman Kala
71	Wolski Zajazd

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

Query:

```
WITH used_order AS (
      SELECT *
      FROM dbo.Orders
      WHERE YEAR(OrderDate) = 1997
), order_data AS (
      SELECT o.OrderID, MONTH(o.OrderDate) as month,
      od.ProductID, (od.Quantity * od.UnitPrice) as sales
      FROM used_order as o
      JOIN dbo.[Order Details] as od
            ON o.OrderID = od.OrderID
), grouped_data AS (
      SELECT month, ProductID, SUM(sales) as total_sales
      FROM order_data
      GROUP BY month, ProductID
), ranked_data AS (
      SELECT *,
      ROW_NUMBER() OVER(PARTITION BY month ORDER BY total_sales
DESC) as rank
      FROM grouped_data
), filtered_data AS (
      SELECT month, ProductID, total_sales
      FROM ranked_data
      WHERE rank < 6
), final_data AS (
      SELECT fd.month, fd.ProductID,
      p.ProductName, fd.total_sales
      FROM filtered_data as fd
      JOIN dbo.Products as p
            ON fd.ProductID = p.ProductID
)
SELECT * FROM final_data
ORDER BY month, total_sales DESC
```

Result:

#	month	ProductID	ProductName	total_sales
1	1	38	Côte de Blaye	20869,20
2	1	59	Raclette Courdavault	5060,00
3	1	63	Vegie-spread	3510,00
4	1	56	Gnocchi di nonna Alice	3192,00
5	1	17	Alice Mutton	3026,40
6	2	55	Pâté chinois	3456,00
7	2	61	Sirop d'érable	2622,00
8	2	56	Gnocchi di nonna Alice	2523,20
9	2	29	Thüringer Rostbratwurst	2376,00
10	2	28	Rössle Sauerkraut	2074,80
11	3	59	Raclette Courdavault	7128,00
12	3	38	Côte de Blaye	6324,00
13	3	51	Manjimup Dried Apples	1950,40
14	3	29	Thüringer Rostbratwurst	1782,00
15	3	60	Camembert Pierrot	1632,00
16	4	56	Gnocchi di nonna Alice	5517,60
17	4	27	Schoggi Schokolade	5268,00
18	4	29	Thüringer Rostbratwurst	4456,44
19	4	38	Côte de Blaye	3952,50
20	4	60	Camembert Pierrot	3604,00

#	month	ProductID	ProductName	total_sales
22	5	43	Ipoh Coffee	3910,00
23	5	62	Tarte au sucre	2958,00
24	5	51	Manjimup Dried Apples	2862,00
25	5	17	Alice Mutton	2847,00
26	6	51	Manjimup Dried Apples	4929,00
27	6	56	Gnocchi di nonna Alice	3800,00
28	6	59	Raclette Courdavault	2860,00
29	6	31	Gorgonzola Telino	2137,50
30	6	72	Mozzarella di Giovanni	1879,20
31	7	59	Raclette Courdavault	4675,00
32	7	60	Camembert Pierrot	4250,00
33	7	38	Côte de Blaye	3952,50
34	7	17	Alice Mutton	3900,00
35	7	61	Sirop d'érable	3420,00
36	8	18	Carnarvon Tigers	5125,00
37	8	62	Tarte au sucre	4683,50
38	8	29	Thüringer Rostbratwurst	3218,54
39	8	56	Gnocchi di nonna Alice	3040,00
40	8	72	Mozzarella di Giovanni	2610,00

#	month	ProductID	ProductName	total_sales
41	9	29	Thüringer Rostbratwurst	5694,34
42	9	9	Mishi Kobe Niku	4850,00
43	9	60	Camembert Pierrot	4590,00
44	9	38	Côte de Blaye	3952,50
45	9	12	Queso Manchego La ...	3800,00
46	10	29	Thüringer Rostbratwurst	6437,08
47	10	59	Raclette Courdavault	6050,00
48	10	53	Perth Pasties	4034,40
49	10	62	Tarte au sucre	3352,40
50	10	43	Ipoh Coffee	2944,00
51	11	59	Raclette Courdavault	5115,00
52	11	69	Gudbrandsdalsost	4248,00
53	11	56	Gnocchi di nonna Alice	3686,00
54	11	18	Carnarvon Tigers	2812,50
55	11	60	Camembert Pierrot	2210,00
56	12	51	Manjimup Dried Apples	9964,00
57	12	29	Thüringer Rostbratwurst	8912,88
58	12	17	Alice Mutton	4212,00
59	12	38	Côte de Blaye	3952,50
60	12	56	Gnocchi di nonna Alice	3800,00

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

Query:

```
CREATE VIEW dbo.OrderDetailsView
AS
SELECT o.OrderID, o.ProductID, p.ProductName,
o.UnitPrice, o.Quantity,
o.Discount,(o.UnitPrice - o.Discount) as FinalPrice
FROM dbo.[Order Details] as o
JOIN dbo.Products as p
        ON o.ProductID = p.ProductID

SELECT * FROM dbo.OrderDetailsView -- Check the view
```

Result:

	OrderID	ProductID	ProductName	UnitPrice	Quantity	Discount	FinalPrice
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	42,25
8	10250	65	Louisiana Fiery Hot Pepper Sauce	16,80	15	0,15	16,65
9	10251	22	Gustaf's Knäckebröd	16,80	6	0,05	16,75
10	10251	57	Ravioli Angelo	15,60	15	0,05	15,55
11	10251	65	Louisiana Fiery Hot Pepper Sauce	16,80	20	0	16,8
12	10252	20	Sir Rodney's Marmalade	64,80	40	0,05	64,75
13	10252	33	Geitost	2,00	25	0,05	1,95
14	10252	60	Camembert Pierrot	27,20	40	0	27,2
15	10252	31	Gorgonzola Telino	10,00	20	0	10

Query executed successfully.   DESKTOP-B02E15A\SQLEXPRESS ...   DESKTOP-B02E15A\Gibran...   Northwind   00:00:00   2.155 rows

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

Query:

```
CREATE PROCEDURE dbo.GetInvoice
    @CustomerID nchar(5)
AS
SELECT c.CustomerID, c.CompanyName,
o.OrderID, o.OrderDate,
o.RequiredDate, o.ShippedDate
FROM dbo.Orders as o
JOIN dbo.Customers as c
        ON o.CustomerID = c.CustomerID
WHERE c.CustomerID = @CustomerID

EXECUTE dbo.GetInvoice N'ANTON';  -- Check the Procedure
```

Result:

	CustomerID	CompanyName	OrderID	OrderDate	RequiredDate	ShippedDate
1	ANTON	Antonio Moreno Taquería	10365	1996-11-27 00:00:00.000	1996-12-25 00:00:00.000	1996-12-02 00:00:00.000
2	ANTON	Antonio Moreno Taquería	10507	1997-04-15 00:00:00.000	1997-05-13 00:00:00.000	1997-04-22 00:00:00.000
3	ANTON	Antonio Moreno Taquería	10535	1997-05-13 00:00:00.000	1997-06-10 00:00:00.000	1997-05-21 00:00:00.000
4	ANTON	Antonio Moreno Taquería	10573	1997-06-19 00:00:00.000	1997-07-17 00:00:00.000	1997-06-20 00:00:00.000
5	ANTON	Antonio Moreno Taquería	10677	1997-09-22 00:00:00.000	1997-10-20 00:00:00.000	1997-09-26 00:00:00.000
6	ANTON	Antonio Moreno Taquería	10682	1997-09-25 00:00:00.000	1997-10-23 00:00:00.000	1997-10-01 00:00:00.000
7	ANTON	Antonio Moreno Taquería	10856	1998-01-28 00:00:00.000	1998-02-25 00:00:00.000	1998-02-10 00:00:00.000