Example of Sales Database in Several Countries

1. We have learned about the concept of primary keys and foreign keys. Often in field practice, databases are implemented without using foreign keys because using foreign keys will increase the database load in carrying out write operations (writing data into the database). In the ER Diagram, we will see tables that are not connected. Approximately, what are the relationships between tables? Complete the following table

Tabel1	Relationship	**Tabel2**	join key
customers	many to one	employees	customers.sales_rep_employee_number = employees.employee_number
customers	one to many	payments	customers.customer_number = payments. Customer_number
customers	one to many	orders	Customers.customer_number = orders.customer_number
orders	one to many	orderdetails	orders.order_number = orderdetails.order_number
orderdetails	many to one	products	orderdetails.product_code = products.product_code
products	many to one	product_lines	products.product_line = product_lines.product_line

2. Look for the product with the highest MSRP (Don't just show the price, but also tell us what the product is about)

```
SELECT product_name, msrp
FROM products p
ORDER BY msrp DESC
```

products 1

SELECT product_name, msrp FROM products p ORDER BY

	ABC product_name	123 msrp
1	Alpine Renault 1300	214.3
2	2001 Ferrari Enzo	207.8
3	1968 Fods Mustang	194.57
4	2003 Harley-Davidson Eagle Drag Bike	193.66
5	1960 Ford Falcon	173.02
6	1917 Grand Touring Sedan	170

3. Each customer will be handled by an agent. Information about who the agent is serving the customer is stored in the sales_rep_employee_number column in the customers table.

The company wants to give bonuses to employees who have served more than 3 customers. Look for sales_rep_employee_number with many customers > 3.

```
SELECT sales_rep_employee_number, COUNT(customer_name)
FROM customers c
GROUP BY sales_rep_employee_number
HAVING COUNT(customer_name)>3
```

customers 1

SELECT sales_rep_employee_number, COUNT(customer_n | Enter a SQL expression to filte

	123 sales_rep_employee_number	123 count
1	[NULL]	22
2	1,401	10
3	1,611	5
4	1,612	5
5	1,702	6
6	1,188	6

4. Which city has the highest number of orders? **HINT** : Use count(distinct column_name) for count aggregation

```
SELECT c.city, COUNT(DISTINCT p.amount) AS Jumlah
FROM customers c left join payments p
ON c.customer_number = p.customer_number
GROUP BY c.city
ORDER BY Jumlah DESC
```

customers 1

SELECT c.city, COUNT(DISTINCT p.amount) AS Jumlah FR | Enter a SQL expression

	ABC city	123 jumlah
1	Madrid	18
2	NYC	15
3	Paris	9
4	San Rafael	9
5	Brickhaven	8
6	Auckland	7

5. Basket Size is a term that is often used in the retail industry, namely the number of items purchased in a transaction. In this question, you are asked to calculate the average basketball size in each city.

Example: In a city, there are 2 transactions. The first transaction contains 1 item A and 2 items B, while the second transaction contains 2 items C. This means that the first transaction has a basket size = 3 and the second transaction has a basket size = 2. If averaged, the average basket size in that city is 2.5.

```
WITH rataan_city AS
    (SELECT o.customer_number, SUM(o2.quantity_ordered) AS order_per_barang
    FROM orders o LEFT JOIN orderdetails o2
    ON o.order_number = o2.order_number
    GROUP BY o.customer_number)
SELECT c.city, AVG(rataan_city.order_per_barang) AS basket_size
FROM customers c RIGHT JOIN rataan_city
ON c.customer_number = rataan_city.customer_number
GROUP BY c.city
ORDER BY c.city
```

customers 1

WITH rataan_city AS (SELECT o.customer_number, SUM(o; Enter a SQL expression to filter results (use Ctrl+Space)

	ABC city	123 basket_size
1	Allentown	1,111
2	Auckland	1,003
3	Auckland	1,669
4	Barcelona	882
5	Bergamo	1,650
6	Bergen	973