use Northwind;

--1. List all cities that have both Employees and Customers.

select distinct city

from employees

where city in (

select distinct city

from customers

)

--2. List all cities that have Customers but no Employee.

--a. Use sub-query

--b. Do not use sub-query

select distinct city

from customers

where city not in (

select distinct city

from Employees

)

--3. List all products and their total order quantities throughout all orders

select p.ProductID, p.ProductName, (select sum(o.OrderID) from [Order Details] o where o.ProductID = p.ProductID) [total order quantities] from Products p;

--4. List all Customer Cities and total products ordered by that city.

select distinct City from Customers order by City;

--5. List all Customer Cities that have at least two customers.

--a. Use union

select city from Customers

except

select city from customers

group by city

having COUNT(\*)=1

union

select city from customers

group by city

having COUNT(\*)=0

--b. Use sub-query and no union

select distinct c1.city

from Customers c1

where (select count(c2.CustomerID) from Customers c2 where c2.City = c1.City) >= 2;

--6. List all Customer that have ordered at least two different kinds of products.

select c.CustomerID from Customers c where (select count(\*) from Orders o where o.CustomerID = c.CustomerID) > 1;

--7. List all Customers who have ordered products, but have the ‘ship city’ on the order different from their own customer cities.

select c.CustomerID from Customers c where c.City not in (select o.ShipCity from Orders o where o.CustomerID = c.CustomerID);

--8. List 5 most popular products, their average price, and the customer city that ordered most quantity of it.

select top 5 o.ProductID, o.average, (

SELECT TOP 1 temp.ShipCity

FROM (

SELECT COUNT(o1.OrderID) AS total, o2.ShipCity

FROM [Order Details] o1

LEFT JOIN Orders o2 ON o1.OrderID = o2.OrderID

where o1.ProductID = o.ProductID

GROUP BY o2.ShipCity

) AS temp

ORDER BY temp.total DESC) "city"

from (select productID, avg(UnitPrice) as average, count(\*) as total

from [Order Details] group by ProductID) o

order by total desc;

--9.List all cities that have never ordered something but we have employees there.

--a. Use sub-query

--b. Do not use sub-query

select o.ShipCity as city from (SELECT COUNT(o1.OrderID) AS totalorder, o2.ShipCity, count(o2.EmployeeID) as totalemployee

FROM [Order Details] o1

LEFT JOIN Orders o2 ON o1.OrderID = o2.OrderID

GROUP BY o2.ShipCity) o where o.totalorder = 0 and totalemployee > 0;

--10.List one city, if exists,

--that is the city from where the employee sold most orders (not the product quantity) is,

--and also the city of most total quantity of products ordered from. (tip: join sub-query)

select (select top 1 City from Orders o join [Order Details] od on o.OrderID=od.OrderID join Employees e on e.EmployeeID = o.EmployeeID

group by e.EmployeeID,e.City

order by COUNT(\*) desc) as MostOrderedCity,

(select top 1 City from Orders o join [Order Details] od on o.OrderID=od.OrderID join Employees e on e.EmployeeID = o.EmployeeID

group by e.EmployeeID,e.City

order by sum(Quantity) desc) as MostQunatitySoldCity

--11. How do you remove the duplicates record of a table?

-- I can use the "distinct" keyword