Base de données Northwind
SQL

1. ```
   select FirstName, LastName, Address, City, Region
   from Employees
   ```

2. ```
   select distinct FirstName, LastName, Customers.CompanyName
   from Employees, Orders, Customers, Shippers
   where Employees.EmployeeID = Orders.EmployeeID
   and Orders.CustomerID = Customers.CustomerID
   and ShipVia = ShipperID and Customers.City = 'Bruxelles'
   and Shippers.CompanyName = 'Speedy Express'
   ```

3. ```
   select distinct Title, FirstName, LastName
   from Employees, Orders, [Order Details], Products
   where Employees.EmployeeID = Orders.EmployeeID
   and Orders.OrderID = [Order Details].OrderID
   and [Order Details].ProductID = Products.ProductID
   and ( ProductName = 'Gravad Lax' or ProductName = 'Mishi Kobe Niku' )
   ```

4. ```
   select distinct E.Title, E.LastName, M.Title, M.LastName
   from Employees E, Employees M
   where E.ReportsTo = M.EmployeeID
   union
   select distinct E.Title, E.LastName, NULL, NULL
   from Employees E
   where ReportsTo IS NULL
   ```

   Autre version

   ```
   select distinct E.Title, E.LastName, M.Title, M.LastName
   from Employees E left outer join Employees M on E.ReportsTo = M.EmployeeID
   ```

5. ```
   select distinct C.CompanyName, ProductName, S.CompanyName
   from Customers C, Orders O, [Order Details] D, Products P, Suppliers S
   where C.City = 'London' and C.CustomerID = O.CustomerID
   and O.OrderID = D.OrderID and D.ProductID = P.ProductID
   and P.SupplierID = S.SupplierID
   and ( S.CompanyName = 'Pavlova, Ltd.' or S.CompanyName = 'Karkki Oy' )
   ```

6. ```
   select P.ProductName
   from Employees E, Orders O, [Order Details] D, Products P
   where E.EmployeeID = O.EmployeeID
   and O.OrderID = D.OrderID
   and D.ProductID = P.ProductID
   and E.City = 'London'
   union
   ```

```
select P.ProductName
from Customers C, Orders O, [Order Details] D, Products P
where C.CustomerID = O.CustomerID
and O.OrderID = D.OrderID
and D.ProductID = P.ProductID
and C.City = 'London'
```

Autre version

```
select P.ProductName
from Products P
where P.ProductID in
   ( select D.ProductID
     from Employees E, Orders O, [Order Details] D
     where E.EmployeeID = O.EmployeeID
     and O.OrderID = D.OrderID
     and E.City = 'London' )
   OR P.ProductID in
   ( select D.ProductID
     from Customers C, Orders O, [Order Details] D
     where C.CustomerID = O.CustomerID
     and O.OrderID = D.OrderID
     and C.City = 'London' )
```

Autre version

```
select distinct P.ProductName
from Employees E, Orders O, [Order Details] D, Products P, Customers C
where E.EmployeeID = O.EmployeeID
and C.CustomerID = O.CustomerID
and O.OrderID = D.OrderID
and D.ProductID = P.ProductID
and (E.City = 'London' or C.City = 'London')
```

7. (a)
```
select E1.FirstName, E1.LastName
from Employees E1
where E1.BirthDate < any
  ( select E2.BirthDate
    from Employees E2
    where E2.City = 'London' )
```

   (b)
```
select E1.FirstName, E1.LastName
from Employees E1
where E1.BirthDate < all
  ( select E2.BirthDate
    from Employees E2
    where E2.City = 'London')
```

8.
```
select E1.FirstName, E1.LastName
from Employees E1
where E1.HireDate < all
   ( select E2.HireDate
     from Employees E2
     where E2.City = 'London' )
```

9.
```
select distinct E.LastName, E.City
from Employees E, Orders O, Customers C
where E.EmployeeID = O.EmployeeID
and O.CustomerID = C.CustomerID
and E.City = C.City
```

   Autre version avec in

```
select E1.FirstName, E1.LastName
from Employees E
where E.EmployeeID in
  ( select O.EmployeeID
    from Orders O, Customers C
    where E.EmployeeID = O.EmployeeID
    and O.CustomerID = C.CustomerID
    and E.City = C.City )
```

   Autre version avec exists

```
select distinct E.LastName, E.City
from Employees E
where exists
  ( select *
    from Orders O, Customers C
    where E.EmployeeID = O.EmployeeID
    and O.CustomerID = C.CustomerID
    and E.City = C.City )
```

10.
```
select distinct C.CompanyName
from Customers C
where not exists
  ( select *
    from Orders O
    where C.CustomerID = O.CustomerID )
```

   Autre version avec `not in`

```
select distinct C.CompanyName
from Customers C
where C.CustomerID not in
  ( select O.CustomerID
    from Orders O )
```

11.
```
select C.CompanyName
from Customers C
where not exists
  ( select *
    from Products P
    where UnitPrice < 5
and not exists
     ( select * from
       Orders O, [Order Details] D
       where C.CustomerID = O.CustomerID
       and O.OrderID = D.OrderID
       and P.ProductID = D.ProductID ) )
```

Autre version avec `group by` et `having`

```
select distinct C.CompanyName
from Customers C, Orders O, [Order Details] D, Products P
where C.CustomerID = O.CustomerID
and O.OrderID = D.OrderID
and D.ProductID = P.ProductID
and P.UnitPrice < 5
group by C.CustomerID, C.CompanyName
having count(distinct D.ProductID) =
  ( select count(*)
    from Products P2 where UnitPrice < 5 )
```

12.
```
select P.ProductName
from Products P
where not exists
  ( select *
    from Employees E
    where not exists
     ( select * from
       Orders O, [Order Details] D
       where E.EmployeeID = O.EmployeeID
       and O.OrderID = D.OrderID
       and P.ProductID = D.ProductID ) )
```

Autre version avec `group by` et `having`

```
select distinct P.ProductName
from Products P
where P.ProductID in
  ( select D.ProductID
    from Orders O, [Order Details] D
    where O.OrderID = D.OrderID
    group by D.ProductID
```

```
    having count(distinct O.EmployeeID) =
     ( select count(*)
       from Employees ) )
```

13.
```
select C.CustomerID, C.CompanyName
from Customers C
where not exists
 ( select *
   from Orders O1, [Order Details] D1
   where O1.OrderID = D1.OrderID and O1.CustomerID = 'LAZYK'
   and not exists
     ( select *
       from Orders O2, [Order Details] D2
       where C.CustomerID = O2.CustomerID and O2.OrderID = D2.OrderID
       and D1.ProductID = D2.ProductID  ) )
order by C.CustomerID
```

Autre version

```
select C.CustomerID, C.CompanyName
from Customers C
where CustomerID <> 'LAZYK'
and not exists
 ( select *
   from [Order Details] D1
   where D1.ProductID in
    (  select D2.ProductID
       from Orders O2, [Order Details] D2
       where O2.OrderID = D2.OrderID
       and O2.CustomerID = 'LAZYK' )
   and not exists
     ( select *
      from Orders O3, [Order Details] D3
      where C.CustomerID = O3.CustomerID
      and O3.OrderID = D3.OrderID
      and D1.ProductID = D3.ProductID ) )
order by C.CustomerID
```

14.
```
select C.CustomerID, C.CompanyName
from Customers C
where CustomerID <> 'LAZYK'
and not exists
 ( select *
   from Orders O1, [Order Details] D1
   where O1.OrderID = D1.OrderID and O1.CustomerID = 'LAZYK'
   and not exists
```

```
      ( select *
        from Orders O2, [Order Details] D2
        where C.CustomerID = O2.CustomerID and O2.OrderID = D2.OrderID
        and D1.ProductID = D2.ProductID  ) )
  and not exists
   ( select *
     from Orders O3, [Order Details] D3
     where C.CustomerID = O3.CustomerID and O3.OrderID = D3.OrderID
     and not exists
       ( select *
         from Orders O4, [Order Details] D4
         where O4.CustomerID = 'LAZYK' and O4.OrderID = D4.OrderID
         and D3.ProductID = D4.ProductID  ) )
  order by C.CustomerID
```

15.
```
  select CategoryID, 'Avg' = avg(UnitPrice)
  from Products
  group by CategoryID
```

16.
```
  select C.CategoryName, avg(P.UnitPrice)
  from Products P, Categories C
  where P.CategoryID = C.CategoryID
  group by C.CategoryName
```

17.
```
  select S.SupplierID, S.CompanyName
  from Suppliers S, Products P
  where S.SupplierID = P.SupplierID
  group by  S.SupplierID, S.CompanyName
  having count(*) > 3
```

18.
```
  select E.EmployeeID, E.LastName,
    'Sales' = sum((D.UnitPrice*D.Quantity)*(1-Discount))
  from Employees E, Orders O, [Order Details] D
  where E.EmployeeID = O.EmployeeID
  and O.OrderID = D.OrderID
  group by E.EmployeeID, E.LastName
  order by E.EmployeeID
```

19.
```
  select E.EmployeeID, E.LastName,
    'Sales' = sum((D.UnitPrice*D.Quantity)*(1-Discount))
  from Employees E, Orders O, [Order Details] D
  where E.EmployeeID = O.EmployeeID
  and O.OrderID = D.OrderID
  group by E.EmployeeID, E.LastName
  having count(distinct D.ProductID) > 70
  order by  E.EmployeeID
```

20.
```
select E.FirstName, E.LastName
from Employees E
where E.EmployeeID in
  ( select distinct O.EmployeeID
    from Orders O, [Order Details] D, Products P
    where O.OrderID = D.OrderID
    and D.ProductID = P.ProductID
    group by O.EmployeeID
    having count(distinct P.SupplierID)>7 )
```

Autre version

```
select E.FirstName, E.LastName
from Employees E, Orders O, [Order Details] D, Products P
where E.EmployeeID = O.EmployeeID
and O.OrderID = D.OrderID
and D.ProductID = P.ProductID
group by O.EmployeeID, E.FirstName, E.LastName
having count(distinct P.SupplierID)>7 )
```

21.
```
select distinct C.CompanyName, P.ProductName
from Customers C, Orders O, [Order Details] D1, Products P
where C.CustomerID = O.CustomerID
and O.OrderID = D1.OrderID
and D1.ProductID = P.ProductID
and D1.Quantity >
   ( select 5*avg(Quantity)
     from [Order Details] D2
     where D1.ProductID = D2.ProductID )
order by C.CompanyName, P.ProductName
```

Autre version de la requête où la somme totale doit être supérieure à 5 fois la moyenne

```
select C.CompanyName, P.ProductName
from Customers C, Orders O, [Order Details] D1, Products P
where C.CustomerID = O.CustomerID
and O.OrderID = D1.OrderID
and D1.ProductID = P.ProductID
group by C.CompanyName, P.ProductID, P.ProductName
having sum(D1.Quantity) >
   ( select 5*avg(Quantity)
     from [Order Details] D2
     where P.ProductID = D2.ProductID )
order by C.CompanyName, P.ProductName
```

Requête	Nombre Réponses
1	9
2	2
3	6 4
4	9
5	9
6	76
7	a) 8
	b) 3
8	4
9	6
10	2
11	9
12	27
13	10
14	0
15	8
16	8
17	4
18	9
	Davolio 192 107
19	3
20	9
21	3