Exercise

a) Retrieve the product names and their corresponding quantities in stock for products with quantities below 50. Sort the list by quantity in ascending order. (Table: Products)

Solution:

```
use Northwind;
SELECT ProductName,
UnitsInStock FROM Products
WHERE UnitsInStock < 50
ORDER BY UnitsInStock ASC;
```

Output:

	ProductName	UnitsInStock
12	Mascarpone Fabioli	9
13	Nord-Ost Matjeshering	10
14	Maxilaku	10
15	Gravad lax	11
16	Aniseed Syrup	13
17	Mozzarella di Giovanni	14
18	Outback Lager	15
19	Uncle Bob's Organic Dried ...	15
20	Chocolade	15
21	Gumbär Gummibärchen	15
22	Côte de Blaye	17
23	Ipoh Coffee	17

b) List the employee names and their hire dates for employees hired in the year 2023. Order the results by hire date in descending order. (Table: Employees).

Solution:

```
use Northwind;
SELECT FirstName,
HireDate FROM Employees
WHERE YEAR(HireDate) = 2023 ORDER BY HireDate DESC;
```

Output:

	FirstName	HireDate
1	Andrew	1992-08-14 00:00:00.000
2	Nancy	1992-05-01 00:00:00.000
3	Janet	1992-04-01 00:00:00.000

c) Display the highest, lowest, sum and average UnitPrice of each Category, where highest UnitPrice lies in the range of 50$ to 100$. Label column as CategoryId, Maximum, Minimum, Sum and Average, respectively. (Table: Products)

Solution:

```
use Northwind;
SELECT CategoryID,
MIN(UnitPrice) AS [Min Unit Price],
MAX(UnitPrice) AS [Max Unit Price],
AVG(UnitPrice) AS [Average Unit Price],
SUM(UnitPrice) AS [Sum of Unit Price]
FROM Products GROUP BY CategoryID
HAVING MAX(UnitPrice) BETWEEN 50 AND 100;
```

Output:

	CategoryID	Min Unit Price	Max Unit Price	Average Unit Price	Sum of Unit Price
1	3	9.20	81.00	25.16	327.08
2	4	2.50	55.00	28.73	287.30
3	7	10.00	53.00	32.37	161.85
4	8	6.00	62.50	20.6825	248.19

d) From customers table, Count all customers in each region where region is not null. (Table: Customers).

Solution:

```
SELECT Region,COUNT(*) AS Total_Customer FROM Customers WHERE Region IS NOT NULL GROUP BY Region;
```

Output:

	Region	Total_Customer
8	Lara	1
9	MT	1
10	NM	1
11	Nueva Esparta	1
12	OR	4
13	Québec	1
14	RJ	3
15	SP	6
16	Táchira	1
17	WA	3

e) Write a query to display the number of ContactName with same ContactTitle. Sort contact title in descending order. (Table: Customers).

Solution:

```
SELECT ContactTitle, COUNT(ContactName) AS NumberOfContacts
FROM Customers
GROUP BY ContactTitle
ORDER BY ContactTitle DESC;
```

Output:

	ContactTitle	NumberOfContacts
1	Sales Representative	17
2	Sales Manager	11
3	Sales Associate	7
4	Sales Agent	5
5	Owner/Marketing Assistant	1
6	Owner	17
7	Order Administrator	2
8	Marketing Manager	12
9	Marketing Assistant	6
10	Assistant Sales Representative	1
11	Assistant Sales Agent	2
12	Accounting Manager	10

f) Write a query that count all orders against each product id. No of orders should be greater than 50. (Table: [Order Details]).

Solution:

```
use Northwind
SELECT ProductID,count(*)
AS NumberOfOrders
FROM [Order Details]
GROUP BY ProductID HAVING count(*) > 50;
```

Output:

	ProductID	NumberOfOrders
1	24	51
2	31	51
3	59	54
4	60	51

g) How many people are in each unique city in the employee table that have more than one person in the city? Select the city and display the number of how many people are in each if it's greater than 1. (Table: Employees)

Solution:

```
use Northwind;
SELECT City, COUNT(*) AS NumberOfPeople
FROM Employees
GROUP BY City
HAVING COUNT(*) > 1;
```

Output:

	City	NumberOfPeople
1	London	4
2	Seattle	2

h) Find the product name, maximum price and minimum price of each product having maximum price greater than 20.00 $. Order by maximum price.

Solution:

```
SELECT ProductName,MAX(UnitPrice) AS MaxPrice, MIN(UnitPrice)
AS MinPrice FROM Products
WHERE ProductID IN
(SELECT ProductID FROM [Order Details]GROUP BY ProductID HAVING MAX(UnitPrice) > 20.00
)GROUP BY ProductName ORDER BY MaxPrice;
```

Output:

	ProductName	MaxPrice	MinPrice
1	Gustaf's Knäckebröd	21.00	21.00
2	Queso Cabrales	21.00	21.00
3	Louisiana Fiery Hot Pepper Sauce	21.05	21.05
4	Chef Anton's Gumbo Mix	21.35	21.35
5	Flotemysost	21.50	21.50
6	Chef Anton's Cajun Seasoning	22.00	22.00
7	Tofu	23.25	23.25

i) Write a query to list no of customers with same ContactTitle if No of customers is greater than 5. However their ContactTitle does not contain Manager. Order by contact title in Descending order(Table: Customers)

Solution:

```
SELECT ContactTitle,
COUNT(*) AS
NumberOfCustomers FROM Customers
WHERE ContactTitle NOT LIKE '%Manager%'
GROUP BY ContactTitle HAVING COUNT(*) > 5 ORDER BY ContactTitle DESC;
```

Output:

	ContactTitle	NumberOfCustomers
1	Sales Representative	17
2	Sales Associate	7
3	Owner	17
4	Marketing Assistant	6

j) Retrieve the count of products in each category where the unit price is less than 30 dollars. Label the columns as CategoryID and ProductCount. (Tables: Products)

Solution:

```
SELECT CategoryID,COUNT(*)
 AS ProductCount FROM Products
WHERE UnitPrice < 30.00 GROUP BY CategoryID;
```

Output:

Results Messages

	CategoryID	ProductCount
1	1	10
2	2	10
3	3	9
4	4	4