SQL PRACTICE 3

Create the corresponding Database tables needed for each question then perform the necessary queries.

1. Which shippers do we have?

We have a table called Shippers. Return all the fields from all the shippers

Expected Results

ShipperID	CompanyName	Phone
1	Speedy Express	(503) 555-9831
2	United Package	(503) 555-3199
3	Federal Shipping	(503) 555-9931

(3 row(s) affected)

Hint

The standard format for a select statement that returns all columns and all rows is “Select * from TableName”.

2. Certain fields from Categories

In the Categories table, selecting all the fields using this SQL:

```
Select * from Categories
```

…will return 4 columns. We only want to see two columns, CategoryName and Description.

Expected Results

```
CategoryName    Description
--------------- ----------------------------------------------------
Beverages       Soft drinks, coffees, teas, beers, and ales
Condiments      Sweet and savory sauces, relishes, spreads, and seasonings
Confections     Desserts, candies, and sweet breads
Dairy Products  Cheeses
Grains/Cereals  Breads, crackers, pasta, and cereal
Meat/Poultry    Prepared meats
Produce         Dried fruit and bean curd
Seafood         Seaweed and fish

(8 row(s) affected)
```

Hint

Instead of * in the Select statement, specify the column names with a comma between them

3. Sales Representatives

We'd like to see just the FirstName, LastName, and HireDate of all the employees with the Title of Sales Representative. Write a SQL statement that returns only those employees.

Expected Results

```
FirstName  LastName            HireDate
---------- ------------------- -----------------------
Nancy      Davolio             2010-05-01 00:00:00.000
Janet      Leverling           2010-04-01 00:00:00.000
Margaret   Peacock             2011-05-03 00:00:00.000
Michael    Suyama              2011-10-17 00:00:00.000
Robert     King                2012-01-02 00:00:00.000
Anne       Dodsworth           2012-11-15 00:00:00.000

(6 row(s) affected)
```

Hint

To filter out only certain rows from a table, use a Where clause. The format for a where clause with a string filter is:

```
Where
   FieldName = 'Filter Text'
```

4. Sales Representatives in the United States

Now we'd like to see the same columns as above, but only for those employees that both have the title of Sales Representative, and also are in the United States.

Expected Results

```
FirstName  LastName            HireDate
---------- ------------------- -----------------------
Nancy      Davolio             2010-05-01 00:00:00.000
Janet      Leverling           2010-04-01 00:00:00.000
Margaret   Peacock             2011-05-03 00:00:00.000

(3 row(s) affected)
```

Hint

To apply multiple filters in a where clause, use “and” to separate the filters.

5. Orders placed by specific EmployeeID

Show all the orders placed by a specific employee. The EmployeeID for this Employee (Steven Buchanan) is 5.

Expected Results

OrderID	OrderDate
10248	2014-07-04 08:00:00.000
10254	2014-07-11 02:00:00.000
10269	2014-07-31 00:00:00.000
10297	2014-09-04 21:00:00.000
10320	2014-10-03 12:00:00.000
10333	2014-10-18 18:00:00.000
10358	2014-11-20 05:00:00.000
10359	2014-11-21 14:00:00.000
10372	2014-12-04 10:00:00.000
10378	2014-12-10 00:00:00.000
10397	2014-12-27 17:00:00.000
10463	2015-03-04 13:00:00.000
10474	2015-03-13 16:00:00.000
10477	2015-03-17 02:00:00.000
10529	2015-05-07 01:00:00.000
10549	2015-05-27 03:00:00.000
10569	2015-06-16 15:00:00.000
10575	2015-06-20 22:00:00.000
10607	2015-07-22 09:00:00.000
10648	2015-08-28 22:00:00.000
10649	2015-08-28 00:00:00.000
10650	2015-08-29 06:00:00.000
10654	2015-09-02 07:00:00.000
10675	2015-09-19 06:00:00.000
10711	2015-10-21 03:00:00.000
10714	2015-10-22 03:00:00.000
10721	2015-10-29 08:00:00.000
10730	2015-11-05 07:00:00.000
10761	2015-12-02 08:00:00.000
10812	2016-01-02 02:00:00.000
10823	2016-01-09 17:00:00.000
10841	2016-01-20 21:00:00.000
10851	2016-01-26 00:00:00.000
10866	2016-02-03 01:00:00.000
10869	2016-02-04 09:00:00.000
10870	2016-02-04 12:00:00.000
10872	2016-02-05 06:00:00.000
10874	2016-02-06 14:00:00.000
10899	2016-02-20 09:00:00.000
10922	2016-03-03 02:00:00.000
10954	2016-03-17 16:00:00.000

11043 2016-04-22 17:00:00.000

(42 row(s) affected)

Hint

The EmployeeID is an integer field, and not a string field. So, the value “5” does not need to be surrounded by single quotes in the where clause.

6. Suppliers and ContactTitles

In the Suppliers table, show the SupplierID, ContactName, and ContactTitle for those Suppliers whose ContactTitle is *not* Marketing Manager.

Expected Results

SupplierID	ContactName	ContactTitle
1	Charlotte Cooper	Purchasing Manager
2	Shelley Burke	Order Administrator
3	Regina Murphy	Sales Representative
5	Antonio del Valle Saavedra	Export Administrator
6	Mayumi Ohno	Marketing Representative
8	Peter Wilson	Sales Representative
9	Lars Peterson	Sales Agent
11	Petra Winkler	Sales Manager
12	Martin Bein	International Marketing Mgr.
13	Sven Petersen	Coordinator Foreign Markets
14	Elio Rossi	Sales Representative
16	Cheryl Saylor	Regional Account Rep.
17	Michael Björn	Sales Representative
18	Guylène Nodier	Sales Manager
19	Robb Merchant	Wholesale Account Agent
20	Chandra Leka	Owner
21	Niels Petersen	Sales Manager
22	Dirk Luchte	Accounting Manager
23	Anne Heikkonen	Product Manager
24	Wendy Mackenzie	Sales Representative
26	Giovanni Giudici	Order Administrator
27	Marie Delamare	Sales Manager
28	Eliane Noz	Sales Representative
29	Chantal Goulet	Accounting Manager

(24 row(s) affected)

Hint

To learn how to do the “not”, you can search online for SQL comparison operators.

7. Products with “queso” in ProductName

In the products table, we’d like to see the ProductID and ProductName for those products where the ProductName includes the string “queso”.

Expected Results

```
ProductID   ProductName
----------- -----------------------------------
11          Queso Cabrales
12          Queso Manchego La Pastora

(2 row(s) affected)
```

Hint

In an earlierproblem, we were looking for exact matches — where our filter matched the value in the field exactly. Here, we're looking for rows where the ProductName field has the value "queso" somewhere in it.

Use the "like" operator, with wildcards, in the answer. Feel free to do some research online to find examples.

8. Orders shipping to France or Belgium

Looking at the Orders table, there's a field called ShipCountry. Write a query that shows the OrderID, CustomerID, and ShipCountry for the orders where the ShipCountry is either France or Belgium.

Expected Results

OrderID	CustomerID	ShipCountry
10248	VINET	France
10251	VICTE	France
10252	SUPRD	Belgium
10265	BLONP	France
10274	VINET	France
10295	VINET	France
10297	BLONP	France
10302	SUPRD	Belgium
10311	DUMON	France
10331	BONAP	France
10334	VICTE	France
10340	BONAP	France
10350	LAMAI	France
10358	LAMAI	France

... (skipping some rows)

10923	LAMAI	France
10927	LACOR	France
10930	SUPRD	Belgium
10932	BONAP	France
10940	BONAP	France
10964	SPECD	France
10971	FRANR	France
10972	LACOR	France
10973	LACOR	France
10978	MAISD	Belgium
11004	MAISD	Belgium
11035	SUPRD	Belgium
11038	SUPRD	Belgium
11043	SPECD	France
11051	LAMAI	France
11076	BONAP	France

(96 row(s) affected)

Hint

In the where clause, instead of combining the filters with an “and” use the “or”.

9. Orders shipping to any country in Latin America

Now, instead of just wanting to return all the orders from France of Belgium, we want to show all the orders from any Latin American country. But we don't have a list of Latin American countries in a table in the Northwind database. So, we're going to just use this list of Latin American countries that happen to be in the Orders table:

Brazil

Mexico

Argentina

Venezuela

It doesn't make sense to use multiple Or statements anymore, it would get too convoluted. Use the In statement.

Expected Results

OrderID	CustomerID	ShipCountry
10250	HANAR	Brazil
10253	HANAR	Brazil
10256	WELLI	Brazil
10257	HILAA	Venezuela
10259	CENTC	Mexico
10261	QUEDE	Brazil
10268	GROSR	Venezuela
10276	TORTU	Mexico
10283	LILAS	Venezuela
10287	RICAR	Brazil
10997	LILAS	Venezuela

... (skipping some rows)

11014	LINOD	Venezuela
11019	RANCH	Argentina
11022	HANAR	Brazil
11039	LINOD	Venezuela
11042	COMMI	Brazil
11049	GOURL	Brazil
11052	HANAR	Brazil
11054	CACTU	Argentina
11055	HILAA	Venezuela
11059	RICAR	Brazil
11065	LILAS	Venezuela
11068	QUEEN	Brazil
11069	TORTU	Mexico
11071	LILAS	Venezuela
11073	PERIC	Mexico

(173 row(s) affected)

Hint

Here's an example of the previous questions, about orders shipping to France or Belgium, done as an In statement instead of using multiple Where clauses.

```
Select
    OrderID
    ,CustomerID
    ,OrderDate
    ,ShipCountry
From Orders
where
    ShipCountry in ('France','Belgium')
```

10. Employees, in order of age

For all the employees in the Employees table, show the FirstName, LastName, Title, and BirthDate. Order the results by BirthDate, so we have the oldest employees first.

Expected Results

FirstName	LastName	Title	BirthDate
Margaret	Peacock	Sales Representative	1955-09-19 00:00:00.000
Nancy	Davolio	Sales Representative	1966-12-08 00:00:00.000
Andrew	Fuller	Vice President, Sales	1970-02-19 00:00:00.000
Steven	Buchanan	Sales Manager	1973-03-04 00:00:00.000
Laura	Callahan	Inside Sales Coordinator	1976-01-09 00:00:00.000
Robert	King	Sales Representative	1978-05-29 00:00:00.000
Michael	Suyama	Sales Representative	1981-07-02 00:00:00.000
Janet	Leverling	Sales Representative	1981-08-30 00:00:00.000
Anne	Dodsworth	Sales Representative	1984-01-27 00:00:00.000

(9 row(s) affected)

Hint

You'll need to use the Order by clause here for sorting the results. Look online for examples.

11. Showing only the Date with a DateTime field

In the output of the query above, showing the Employees in order of BirthDate, we see the time of the BirthDate field, which we don't want. Show only the date portion of the BirthDate field.

Expected Results

FirstName	LastName	Title	DateOnlyBirthDate
Margaret	Peacock	Sales Representative	1955-09-19
Nancy	Davolio	Sales Representative	1966-12-08
Andrew	Fuller	Vice President, Sales	1970-02-19
Steven	Buchanan	Sales Manager	1973-03-04
Laura	Callahan	Inside Sales Coordinator	1976-01-09
Robert	King	Sales Representative	1978-05-29
Michael	Suyama	Sales Representative	1981-07-02
Janet	Leverling	Sales Representative	1981-08-30
Anne	Dodsworth	Sales Representative	1984-01-27

(9 row(s) affected)

Hint

Use the Convert function to convert the BirthDate column (originally a DateTime column) to a Date column.

12. Employees full name

Show the FirstName and LastName columns from the Employees table, and then create a new column called FullName, showing FirstName and LastName joined together in one column, with a space in-between.

Expected Results

```
FirstName  LastName            FullName
---------- ------------------- ------------------------------
Nancy      Davolio             Nancy Davolio
Andrew     Fuller              Andrew Fuller
Janet      Leverling           Janet Leverling
Margaret   Peacock             Margaret Peacock
Steven     Buchanan            Steven Buchanan
Michael    Suyama              Michael Suyama
Robert     King                Robert King
Laura      Callahan            Laura Callahan
Anne       Dodsworth           Anne Dodsworth

(9 row(s) affected)
```

Hint

Joining two fields like this is called concatenation.

13. OrderDetails amount per line item

In the OrderDetails table, we have the fields UnitPrice and Quantity. Create a new field, TotalPrice, that multiplies these two together. We'll ignore the Discount field for now.

In addition, show the OrderID, ProductID, UnitPrice, and Quantity. Order by OrderID and ProductID.

Expected Results

OrderID	ProductID	UnitPrice	Quantity	TotalPrice
10248	11	14.00	12	168.00
10248	42	9.80	10	98.00
10248	72	34.80	5	174.00
10249	14	18.60	9	167.40
10249	51	42.40	40	1696.00
10250	41	7.70	10	77.00
10250	51	42.40	35	1484.00
10250	65	16.80	15	252.00
10251	22	16.80	6	100.80
10251	57	15.60	15	234.00
10251	65	16.80	20	336.00

... (skipping some rows)

11077	13	6.00	4	24.00
11077	14	23.25	1	23.25
11077	16	17.45	2	34.90
11077	20	81.00	1	81.00
11077	23	9.00	2	18.00
11077	32	32.00	1	32.00
11077	39	18.00	2	36.00
11077	41	9.65	3	28.95
11077	46	12.00	3	36.00
11077	52	7.00	2	14.00
11077	55	24.00	2	48.00
11077	60	34.00	2	68.00
11077	64	33.25	2	66.50
11077	66	17.00	1	17.00
11077	73	15.00	2	30.00
11077	75	7.75	4	31.00
11077	77	13.00	2	26.00

(2155 row(s) affected)

Hint

In this computed column, you need to use the arithmetic operator for multiplication.

14. How many customers?

How many customers do we have in the Customers table? Show one value only, and don’t rely on getting the recordcount at the end of a resultset.

Expected Results

```
TotalCustomers
--------------
91

(1 row(s) affected)
```

Hint

In order to get the total number of customers, we need to use what's called an aggregate function. Look online for an aggregate function that would work for this problem.

15. When was the first order?

Show the date of the first order ever made in the Orders table.

Expected Results

```
FirstOrder
----------------------
2014-07-04 08:00:00.000

(1 row(s) affected)
```

Hint

There’s a aggregate function called Min that you need to use for this problem.

16. Countries where there are customers

Show a list of countries where the Northwind company has customers.

Expected Results

```
Country
--------------
Argentina
Austria
Belgium
Brazil
Canada
Denmark
Finland
France
Germany
Ireland
Italy
Mexico
Norway
Poland
Portugal
Spain
Sweden
Switzerland
UK
USA
Venezuela

(21 row(s) affected)
```

Hint

You'll want to use the Group By clause for this query.

17. Contact titles for customers

Show a list of all the different values in the Customers table for ContactTitles. Also include a count for each ContactTitle.

This is similar in concept to the previous question “Countries where there are customers”, except we now want a count for each ContactTitle.

Expected Results

ContactTitle	TotalContactTitle
Owner	17
Sales Representative	17
Marketing Manager	12
Sales Manager	11
Accounting Manager	10
Sales Associate	7
Marketing Assistant	6
Sales Agent	5
Assistant Sales Agent	2
Order Administrator	2
Assistant Sales Representative	1
Owner/Marketing Assistant	1

(12 row(s) affected)

Hint

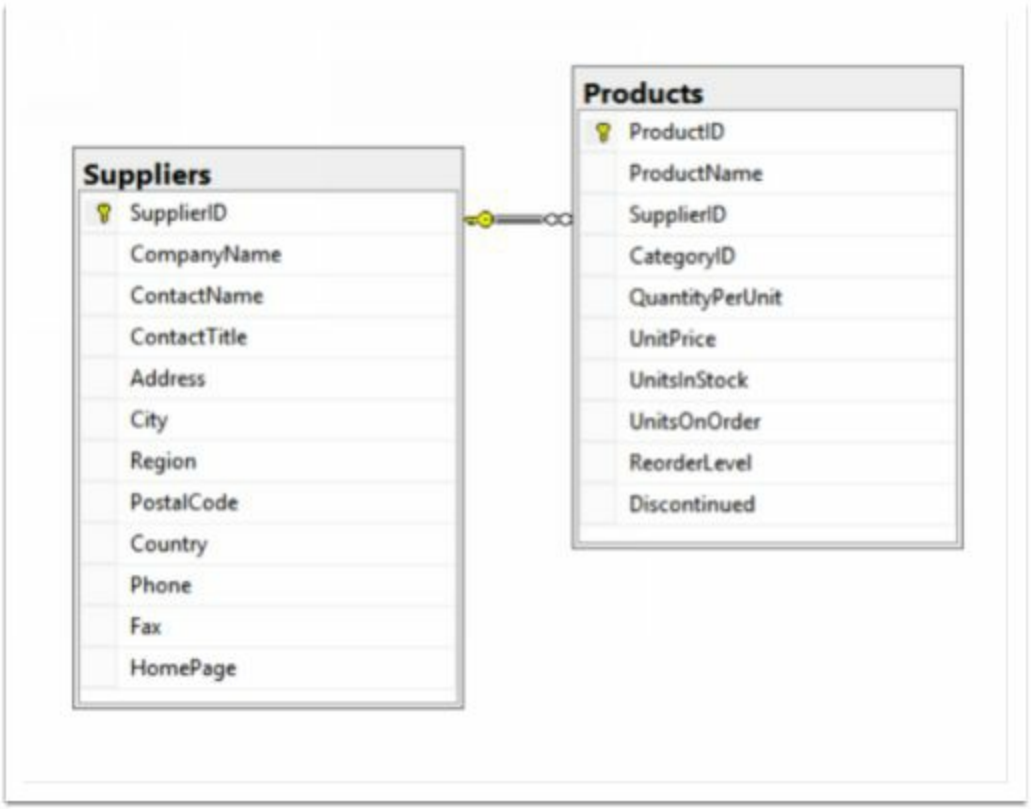
The answer for this problem builds on multiple concepts introduced in previous problem, such as grouping, aggregate functions, and aliases.

18. Products with associated supplier names

We'd like to show, for each product, the associated Supplier. Show the ProductID, ProductName, and the CompanyName of the Supplier. Sort by ProductID.

This question will introduce what may be a new concept, the Join clause in SQL. The Join clause is used to join two or more relational database tables together in a logical way.

Here's a data model of the relationship between Products and Suppliers.



Expected Results

ProductID	ProductName	Supplier
1	Chai	Exotic Liquids
2	Chang	Exotic Liquids
3	Aniseed Syrup	Exotic Liquids
4	Chef Anton's Cajun Seasoning	New Orleans Cajun Delights
5	Chef Anton's Gumbo Mix	New Orleans Cajun Delights
6	Grandma's Boysenberry Spread	Grandma Kelly's Homestead
7	Uncle Bob's Organic Dried Pears	Grandma Kelly's Homestead
8	Northwoods Cranberry Sauce	Grandma Kelly's Homestead
9	Mishi Kobe Niku	Tokyo Traders
10	Ikura	Tokyo Traders

... (skipping some rows)

66	Louisiana Hot Spiced Okra	New Orleans Cajun Delights
67	Laughing Lumberjack Lager	Bigfoot Breweries
68	Scottish Longbreads	Specialty Biscuits, Ltd.
69	Gudbrandsdalsost	Norske Meierier
70	Outback Lager	Pavlova, Ltd.
71	Flotemysost	Norske Meierier
72	Mozzarella di Giovanni	Formaggi Fortini s.r.l.
73	Röd Kaviar	Svensk Sjöföda AB
74	Longlife Tofu	Tokyo Traders
75	Rhönbräu Klosterbier	Plutzer Lebensmittelgroßmärkte AG
76	Lakkalikööri	Karkki Oy
77	Original Frankfurter grüne Soße	Plutzer Lebensmittelgroßmärkte AG

(77 row(s) affected)

Hint

Just as a reference, here's an example of what the syntax for the Join looks like, using different tables from the Northwind database. It will show all the products, with the associated CategoryName.

```
Select
   ProductID
   ,ProductName
   ,CategoryName
From Products
   Join Categories
      on Products.CategoryID = Categories.CategoryID
```

19. Orders and the Shipper that was used

We'd like to show a list of the Orders that were made, including the Shipper that was used. Show the OrderID, OrderDate (date only), and CompanyName of the Shipper, and sort by OrderID.

In order to not show all the orders , show only those rows with an OrderID of less than 10300.

Expected Results

OrderID	OrderDate	Shipper
10248	2014-07-04	Federal Shipping
10249	2014-07-05	Speedy Express
10250	2014-07-08	United Package
10251	2014-07-08	Speedy Express
10252	2014-07-09	United Package
10253	2014-07-10	United Package
10254	2014-07-11	United Package
10255	2014-07-12	Federal Shipping
10256	2014-07-15	United Package
10257	2014-07-16	Federal Shipping
10258	2014-07-17	Speedy Express
10259	2014-07-18	Federal Shipping
10260	2014-07-19	Speedy Express
10261	2014-07-19	United Package
10262	2014-07-22	Federal Shipping
10263	2014-07-23	Federal Shipping
10264	2014-07-24	Federal Shipping

... (skipping some rows)

10284	2014-08-19	Speedy Express
10285	2014-08-20	United Package
10286	2014-08-21	Federal Shipping
10287	2014-08-22	Federal Shipping
10288	2014-08-23	Speedy Express
10289	2014-08-26	Federal Shipping
10290	2014-08-27	Speedy Express
10291	2014-08-27	United Package
10292	2014-08-28	United Package
10293	2014-08-29	Federal Shipping
10294	2014-08-30	United Package
10295	2014-09-02	United Package
10296	2014-09-03	Speedy Express
10297	2014-09-04	United Package
10298	2014-09-05	United Package
10299	2014-09-06	United Package

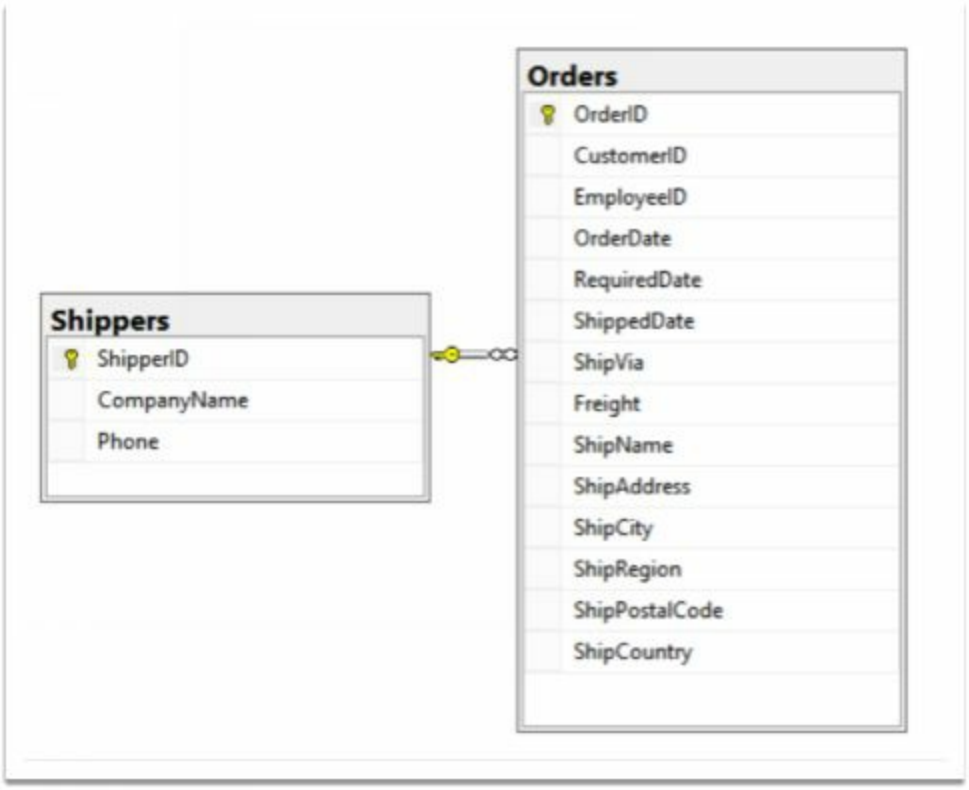
(52 row(s) affected)

Hint

First, create a SQL statement that shows only the rows and columns you need from the Orders table.

Then, work on adding the join to the Shipper table, and the necessary field from that table.

This data model should help you visualize the join between the Orders table and the Shippers table.



Hint

One thing to note for this problem is that when you join two tables, the field that's joined on does not necessarily need to have the same name. Usually, they do. However, in this case, the ShipVia field in Orders is joined to ShipperID in Shippers.