Homework 2

Instructions:

- Write your answers in a .doc or .pdf file and then submit it on Brightspace by the due date. The file should include for each question you are answering the following:
  - The question number
  - The SQL query that you created to answer the question
  - A screenshot of the output that your query produces.
- This assignment will require you to use again Northwind database, the one you used in HW1.
- Below each question there is a sample output, either all the rows or just the first few rows for long outputs (so if you output is longer than the one given to you in this homework, it's just because we limit the sample we show you to just a few lines, it doesn't mean that your answer is wrong). This sample output is aimed to guide you towards creating the correct query. Keep in mind though that, even if your output is the same with the given, your query may not be entirely correct, since different queries may lead to the same output. Grading is based on the correctness of the query and not only the correctness of the output.
- Feel free to work in teams. However, each student must submit their own answers.
- Please do not include your name, username or usc id in your submitted file! Grading is anonymized.

Northwind Traders Company

Northwind Traders is a company that imports and exports food globally. The database captures all the sales transactions that occur between the company (Northwind) and its customers, as well as the purchase transactions between Northwind and its suppliers.

The following explains each table (used in this assignment) in the Northwind database:

Table	Description
Customers	who buy from Northwind
Orders	stores transaction sale orders from customers
OrderDetails	stores line items of sale orders
Products	the products that Northwind trades in
Suppliers	who supply to the company
Shippers	details of the shippers who ship the products from the traders to the end-customers
Employees	who work for Northwind

Check the ERD diagram below for more details on each of the above tables.

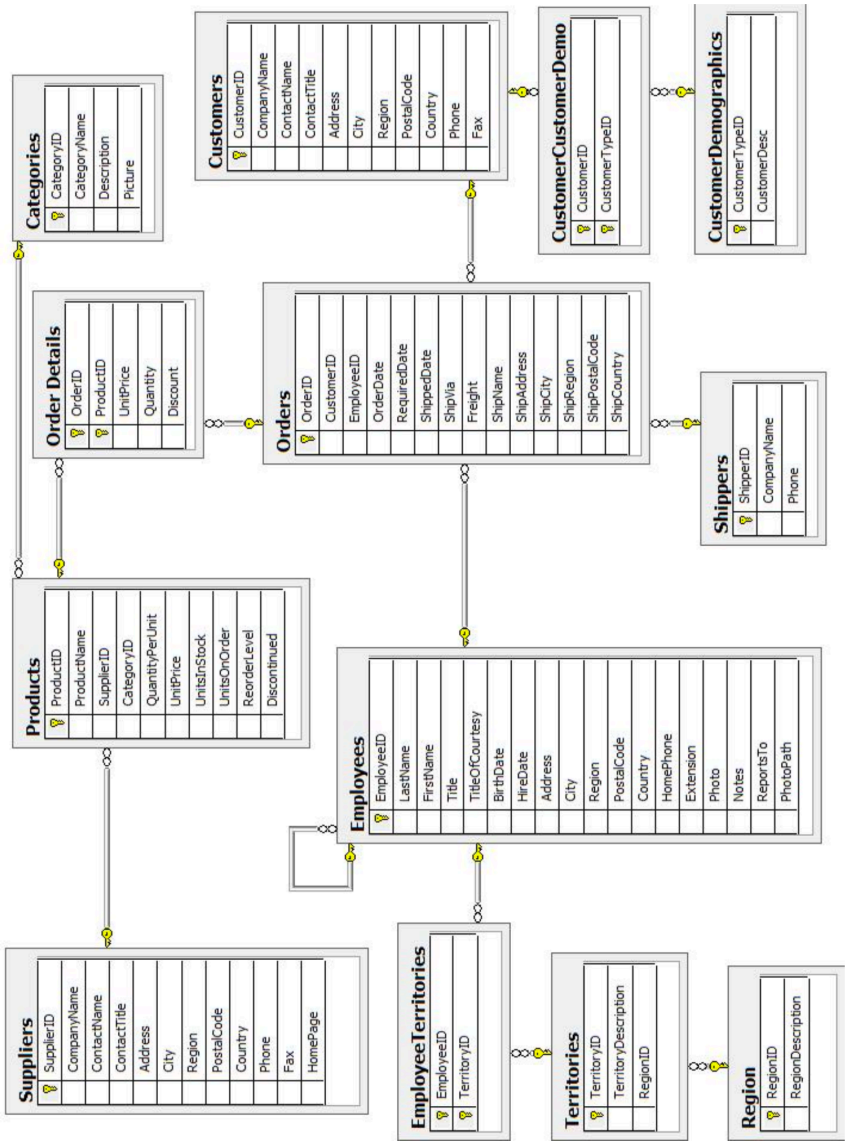

Figure 1: Northwind ERD

1. What is the total number of orders placed by each customer? Only the customer id and total orders per customer should show up in the output, and the column names should be the same with the ones showed in the sample below.

Sample Output:

customerid	totalorders
TOMSP	6
LONEP	8
OLDWO	10
WARTH	15
MAGAA	10
QUEEN	13

2. Write a query to display the total quantity and the average price of products ordered for each order. The output should only display the order id, the total quantity ordered, and the average unit price (simple average, not weighted average) in each order. The column names should be the same with the ones showed in the sample below.

Sample Output:

orderid	totalquantity	avgprice
11,038	37	15.6333332062
10,782	1	12.5
10,725	22	13.5499998728
10,423	34	27
10,518	29	95.816666921
10,356	62	19.3333333333
10,963	2	34

3. Find the top 5 customers with the highest number of orders. Only the customer id and total orders per customer should show up in the output, and the column names should be the same with the ones showed in the sample below.

Sample Output:

customerid	totalorders
SAVEA	31
ERNSH	30
QUICK	28
HUNGO	19
FOLKO	19

4. Find the customers who have placed more than 10 orders. In your output, you should only display the customer ID and the total number of orders for each of those customers. The column names should be the same with the ones showed in the sample below.

Sample Output:

customerid	totalorders
WARTH	15
QUEEN	13
RATTC	18
FRANK	15
LEHMS	15

5. revenue is defined as [units sold * unit price]. The column names should be the same with the ones showed in the sample below.

Sample Output:

productid	revenue
74	2,566
54	5,120.9999489784
29	87,736.4005126953
71	20,876.500328064

6. Which products have average unit price greater than $50? Only display the product ids and their average price. The column names should be the same with the ones showed in the sample below and the price column should have integer values.

Sample Output:

productid	avgprice
29	116
51	51
59	51
9	93
38	246
20	76
18	60

7. What is the highest unit price for each product? Only display the product ids and their highest price. The column names should be the same with the ones showed in the sample below.

Sample Output:

productid	maxprice
74	10
54	7.45
29	123.79
71	21.5
4	22
68	12.5

8. How many different customers did each Northwind employee work with in 1997? The output should only include the employee ID (in an increasing order) and the number of customers each employee worked with in 1997. For dates, use the format `'yyyy-mm-dd'`. The column names should be the same with the ones showed in the sample below.

Sample Output:

employeeid	number_of_customers_in_97
1	40
2	35
3	46
4	57
5	13
6	24
7	30
8	36
9	16