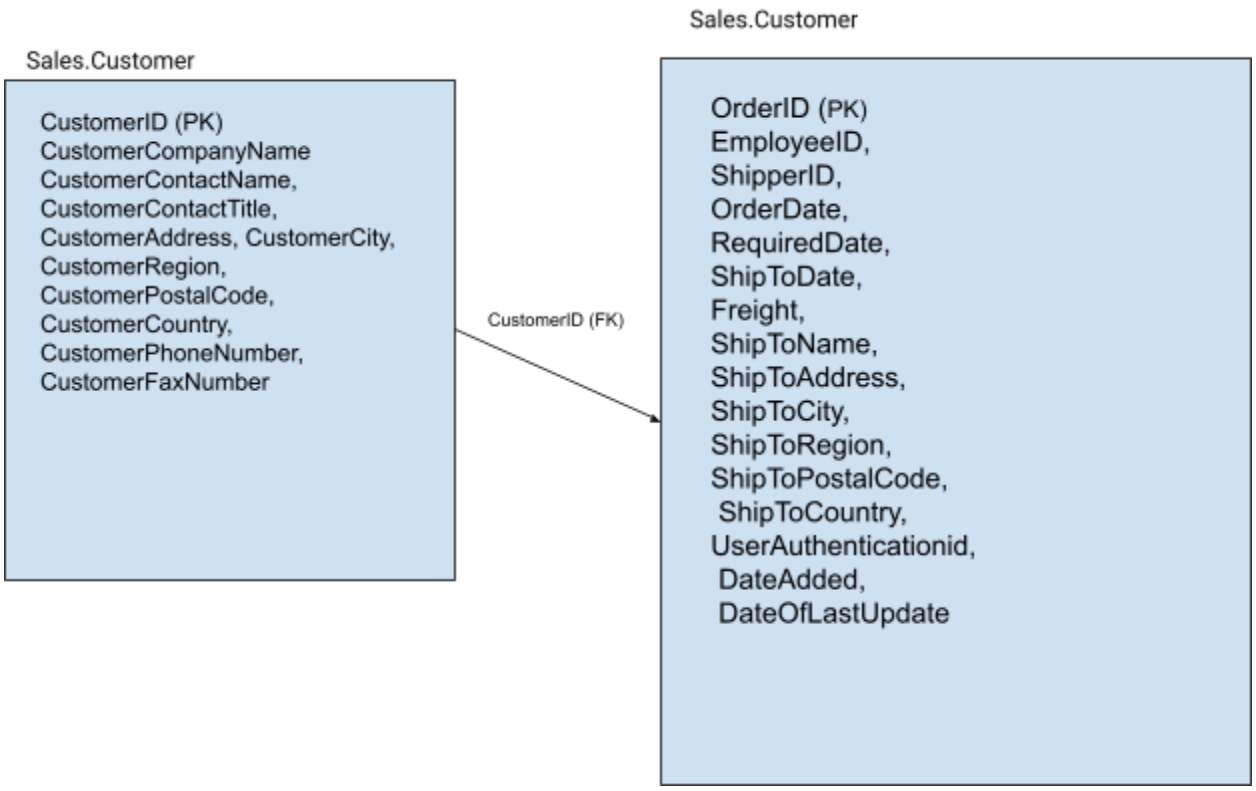
PROJECT ONE

This project aims to utilize database diagrams as key navigation and analysis tools, develop diagram views to separate subsystems for specific information queries, apply diagrammatic subject areas to address real-world business problems, document necessary data for accurate query resolution. Each of the five group member creates 20 queries across six selected databases. Use organized diagram views to facilitate the exploration and solving of complex issues.

CONTENTS

TOP QUERY (1)

USE Northwinds2022TSQLV7;



PROPOSITION: Retrieve customer details with more than 5 orders.

columns from their respective tables in the select clause:

Table Name	Column Name
Sales.Customer	CustomerID (PK) CustomerCompanyName

Sales.Order	OrderID (PK) CustomerID (FK)

Order by :

Table Name	Column Name	Sort Order
Purchasing.Suppliers	TotalPurchaseAmount	Descending

Problem solving Query:

```
USE Northwinds2022TSQLV7;

WITH

 CustomerOrders

 AS

 (

   SELECT

     c.CustomerID,

     c.CustomerCompanyName,

     COUNT(o.OrderID) AS NumberOfOrders

   FROM

     Sales.Customer c

     JOIN Sales.[Order] o ON c.CustomerID = o.CustomerID

   GROUP BY

   c.CustomerID, c.CustomerCompanyName

 )

SELECT

 CustomerID,

 CustomerCompanyName,
```

```
 NumberOfOrders
FROM
 CustomerOrders
WHERE
 CustomerID IN (
   SELECT
 CustomerID
FROM
 CustomerOrders
WHERE
     NumberOfOrders > 5
 )
FOR JSON PATH, ROOT('CustomerOrdersDetails');
```

Sample Relational Output with total number of rows returned:

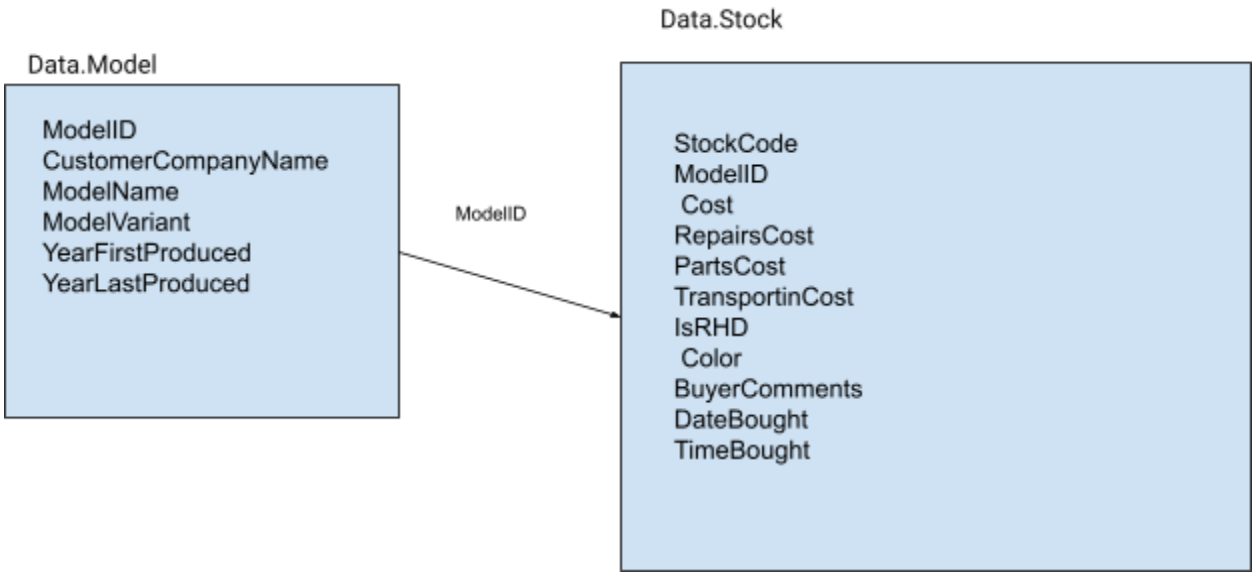
	CustomerID	CustomerCompanyName	NumberOfOrders
1	1	Customer NRZBB	6
2	3	Customer KBUDE	7
3	4	Customer HFBZG	13
4	5	Customer HGVLZ	18
5	6	Customer XHXJV	7
6	7	Customer QXVLA	11
7	9	Customer RTXGC	17
8	10	Customer EEALV	14
9	11	Customer UBHAU	10
10	12	Customer PSNMQ	6
11	14	Customer WNMAF	8
12	17	Customer FEVNN	6
13	19	Customer RFNQC	8
14	20	Customer THHDP	30
15	21	Customer KIDPX	7
16	24	Customer CYZTN	19
17	25	Customer AZJED	15
18	27	Customer WMFEA	6
19	28	Customer XYUFB	8
20	30	Customer KSLQF	10

Sample JSON Output with total number of rows returned:


```
{
    "CustomerOrdersDetails": [
        {
            "CustomerID": 1,
            "CustomerCompanyName": "Customer NRZBB",
            "NumberOfOrders": 6
        },
        {
            "CustomerID": 3,
            "CustomerCompanyName": "Customer KBUDE",
            "NumberOfOrders": 7
        },
        {
            "CustomerID": 4,
            "CustomerCompanyName": "Customer HFBZG",
            "NumberOfOrders": 13
        },
        {
            "CustomerID": 5,
            "CustomerCompanyName": "Customer HGVLZ",
            "NumberOfOrders": 18
        },
        {
            "CustomerID": 6,
            "CustomerCompanyName": "Customer XHXJV",
            "NumberOfOrders": 7
        },
        {
            "CustomerID": 7,
            "CustomerCompanyName": "Customer QXVLA",
            "NumberOfOrders": 11
        },
        {
            "CustomerID": 9,
            "CustomerCompanyName": "Customer RTXGC",
            "NumberOfOrders": 17
        },
        {
            "CustomerID": 10,
            "CustomerCompanyName": "Customer EEALV",
            "NumberOfOrders": 14
        },
        {
            "CustomerID": 11,
            "CustomerCompanyName": "Customer UBHAU",
            "NumberOfOrders": 10
        },
        {
            "CustomerID": 12,
            "CustomerCompanyName": "Customer PSNMQ",
```


TOP QUERY (2)

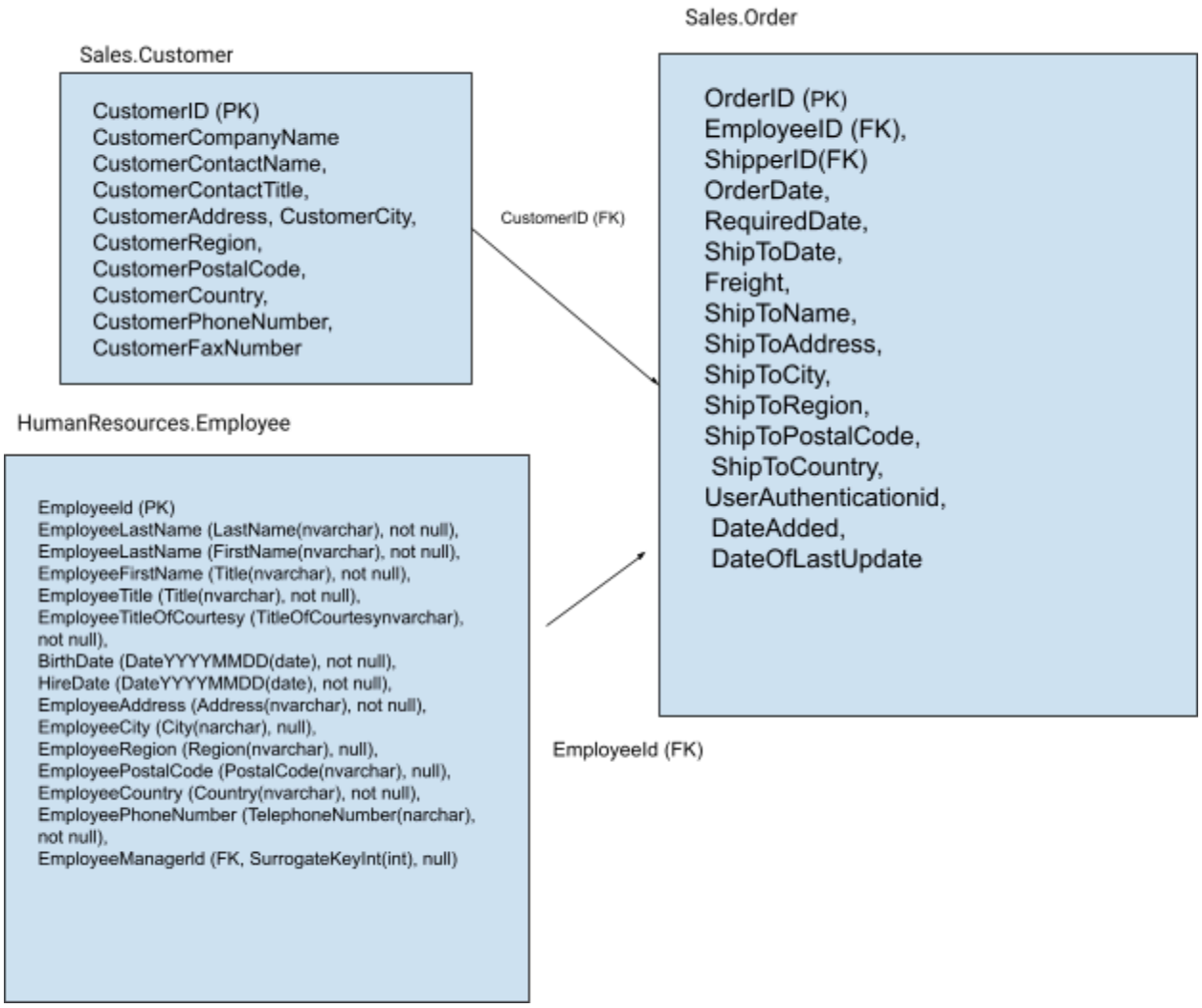
USE PrestigeCars;



PROPOSITION: Retrieve customer details with more than 5 orders.

TOP QUERY (3)

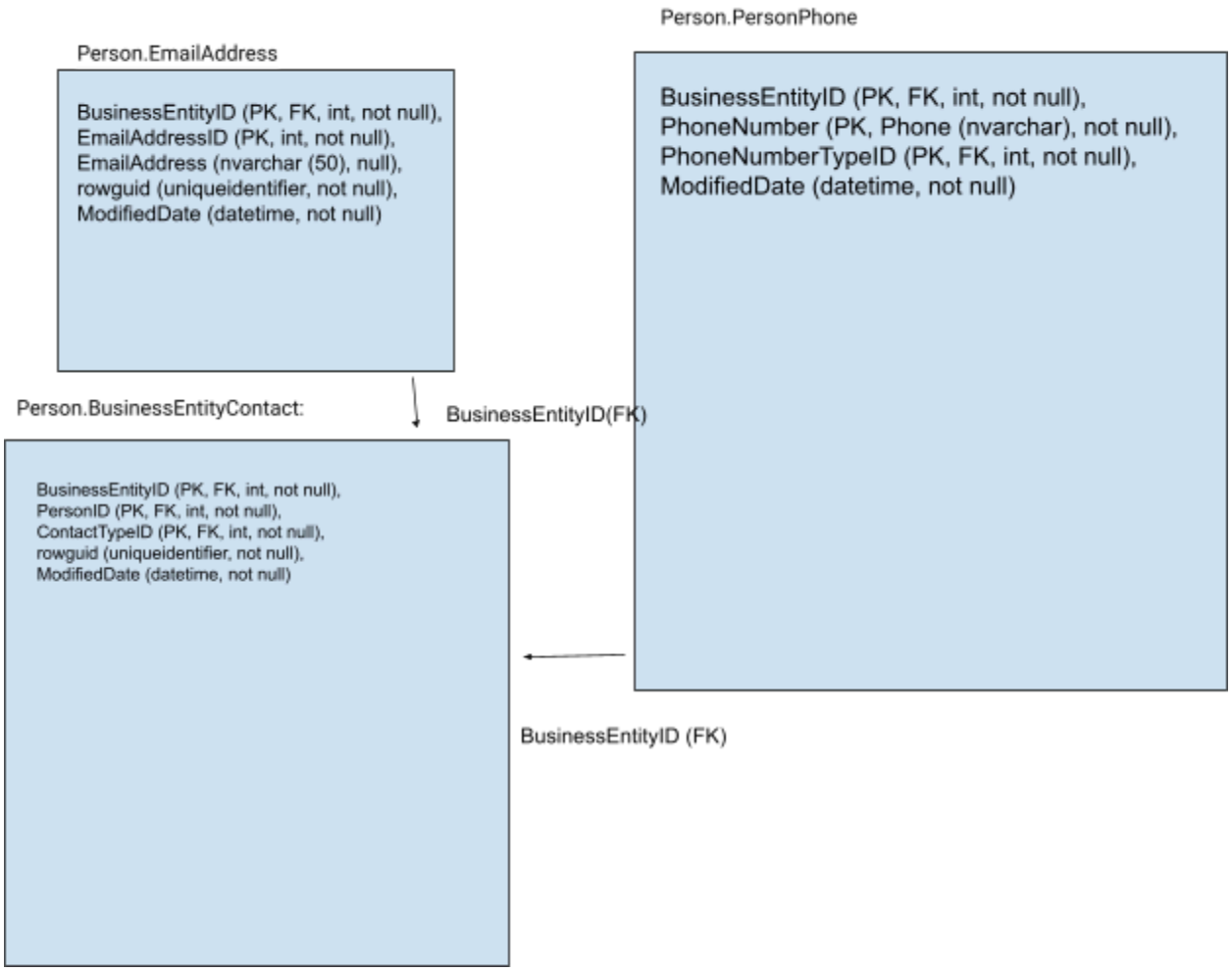
USE Northwinds2022TSQLV7;



PROPOSITION: Calculate the average sales value per employee-customer pair within a specified timeframe using a user-defined function for average calculation.

WORST QUERY (1)

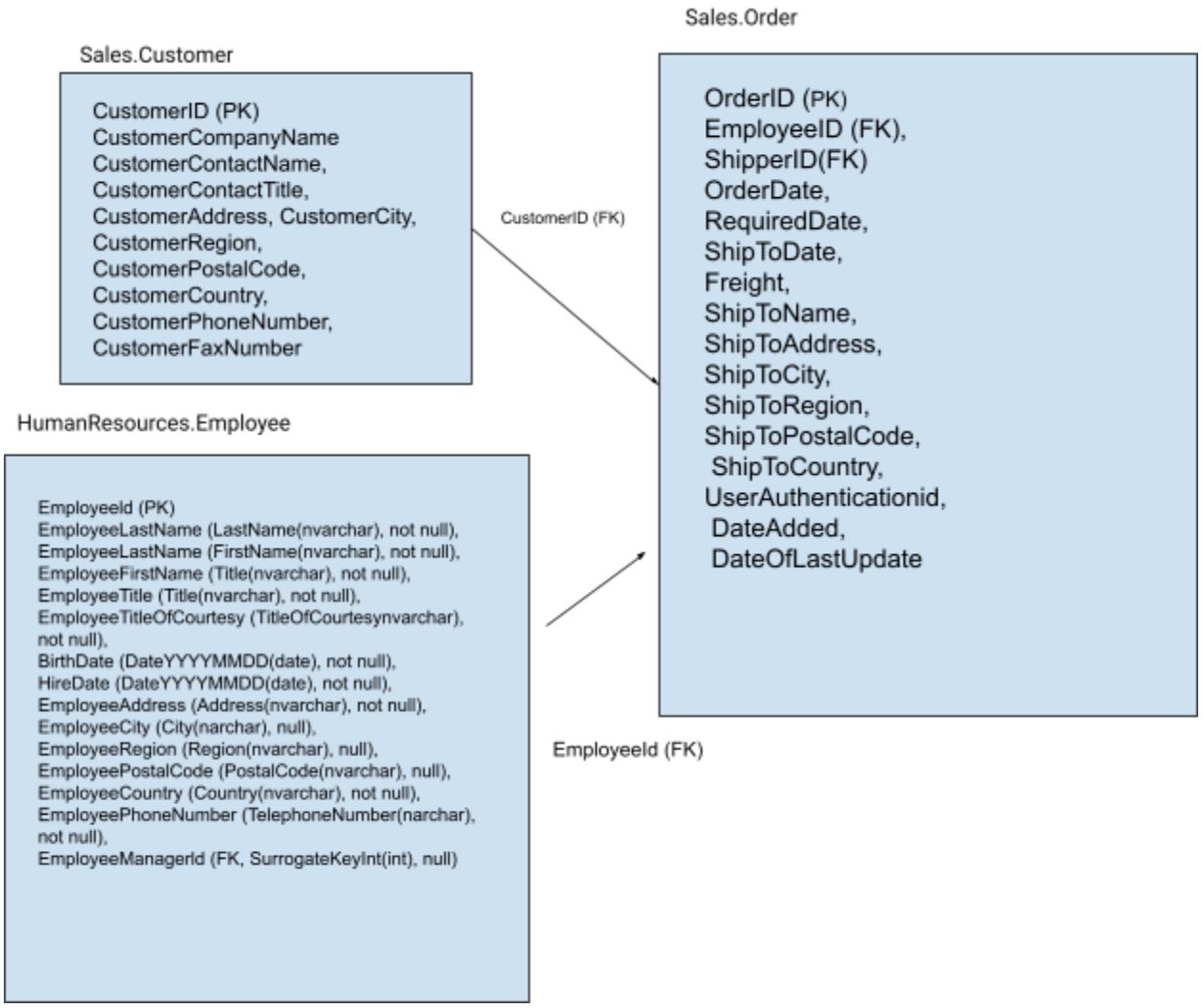
USE AdventureWorks2017;



PROPOSITION: Write a query that retrieves each business entity's total email addresses and phone numbers.

WORST QUERY (2)

USE Northwinds2022TSQLV7;



PROPOSITION: Aggregate total sales per customer by summarizing sales from all their orders.

WORST QUERY (3)

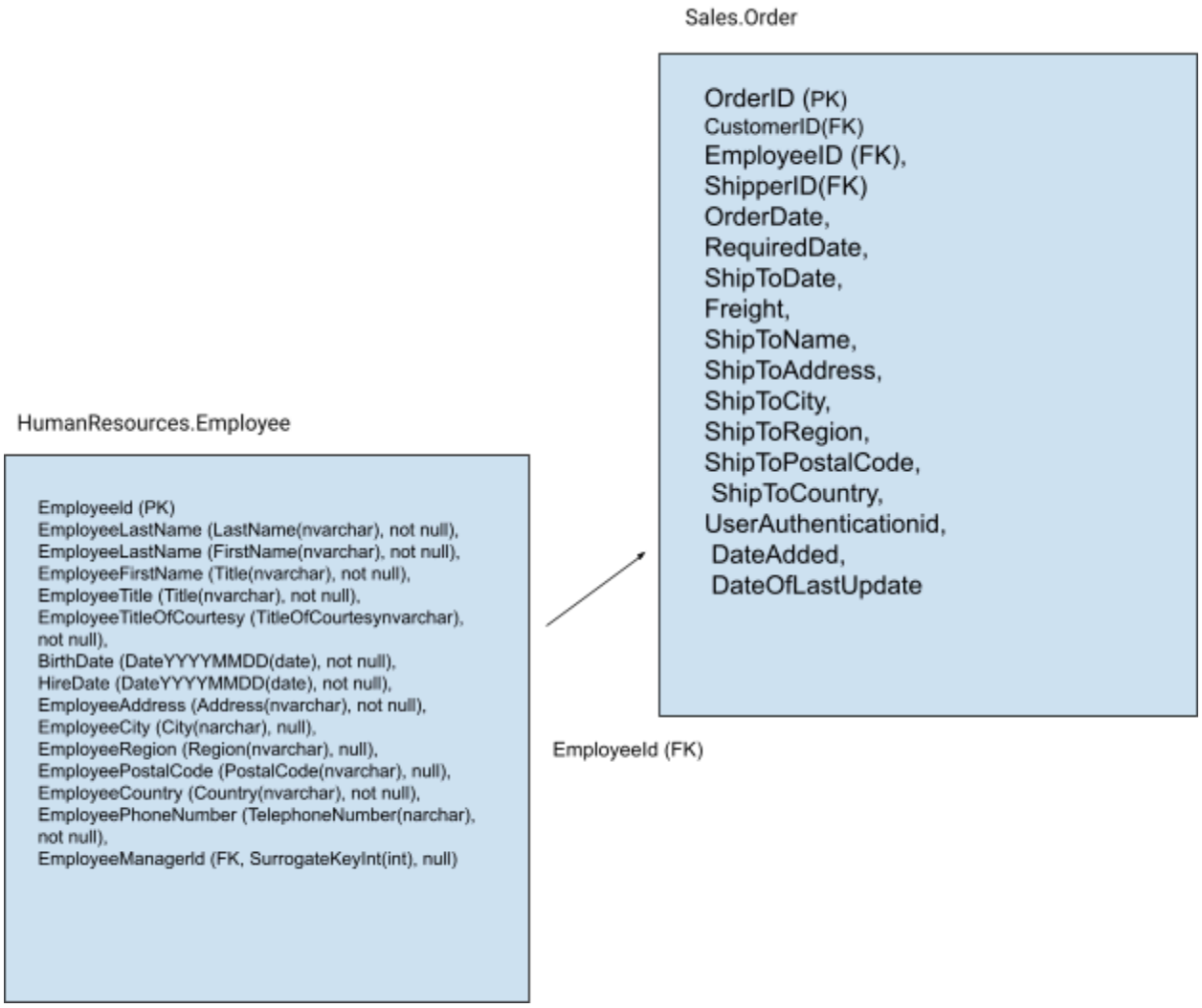
USE AdventureWorksDW2017;

ER DIAGRAM

PROPOSITION: Retrieve the average sales amount by currency for orders placed in 2014, sorted by the overall average sales amount in descending order.

REST OF MEDIUM (1)

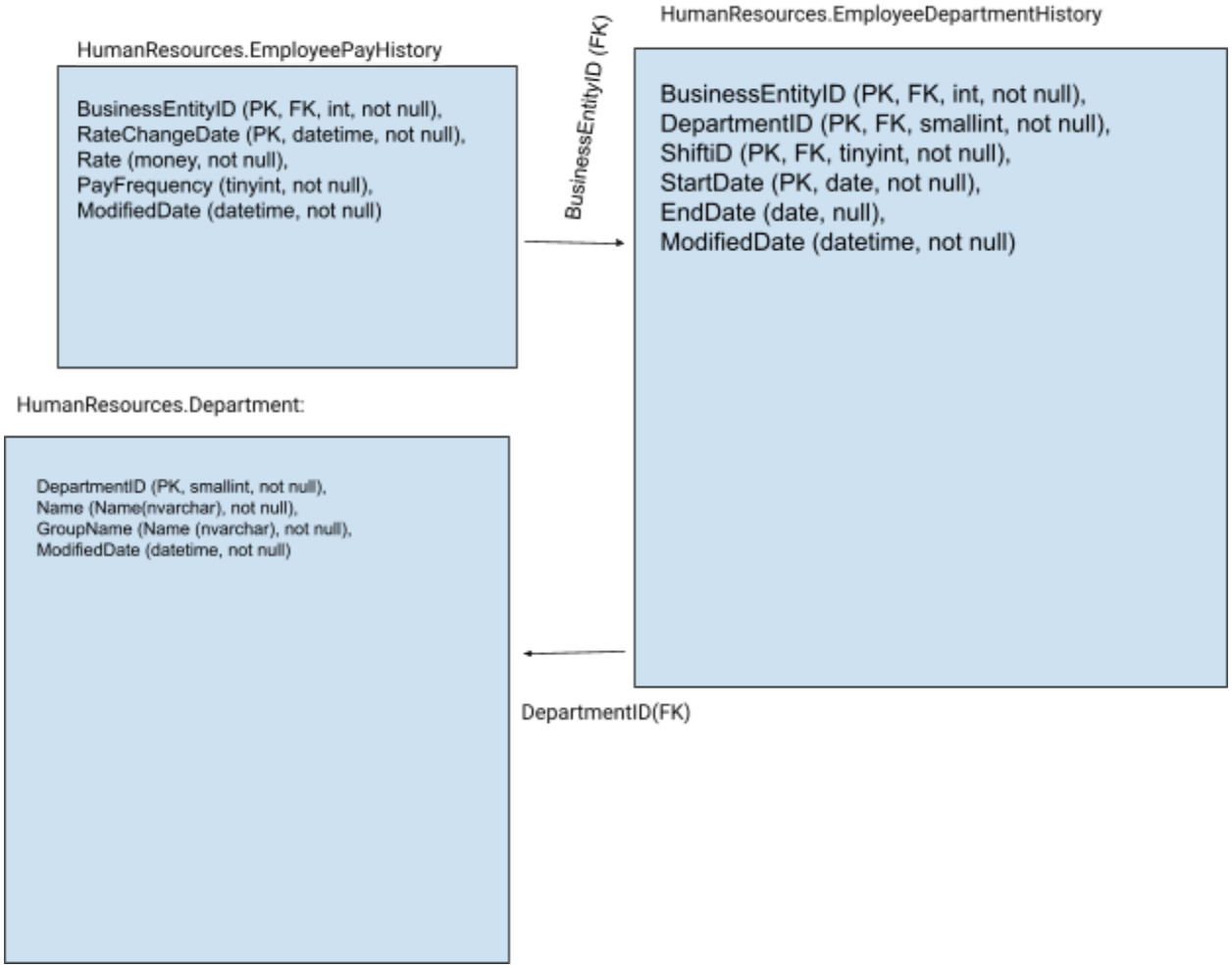
USE Northwinds2022TSQLV7;



Proposition: Retrieve sales employee details with total orders since hiring after January 1, 2012, ordered by total orders in descending order.

REST OF MEDIUM (2)

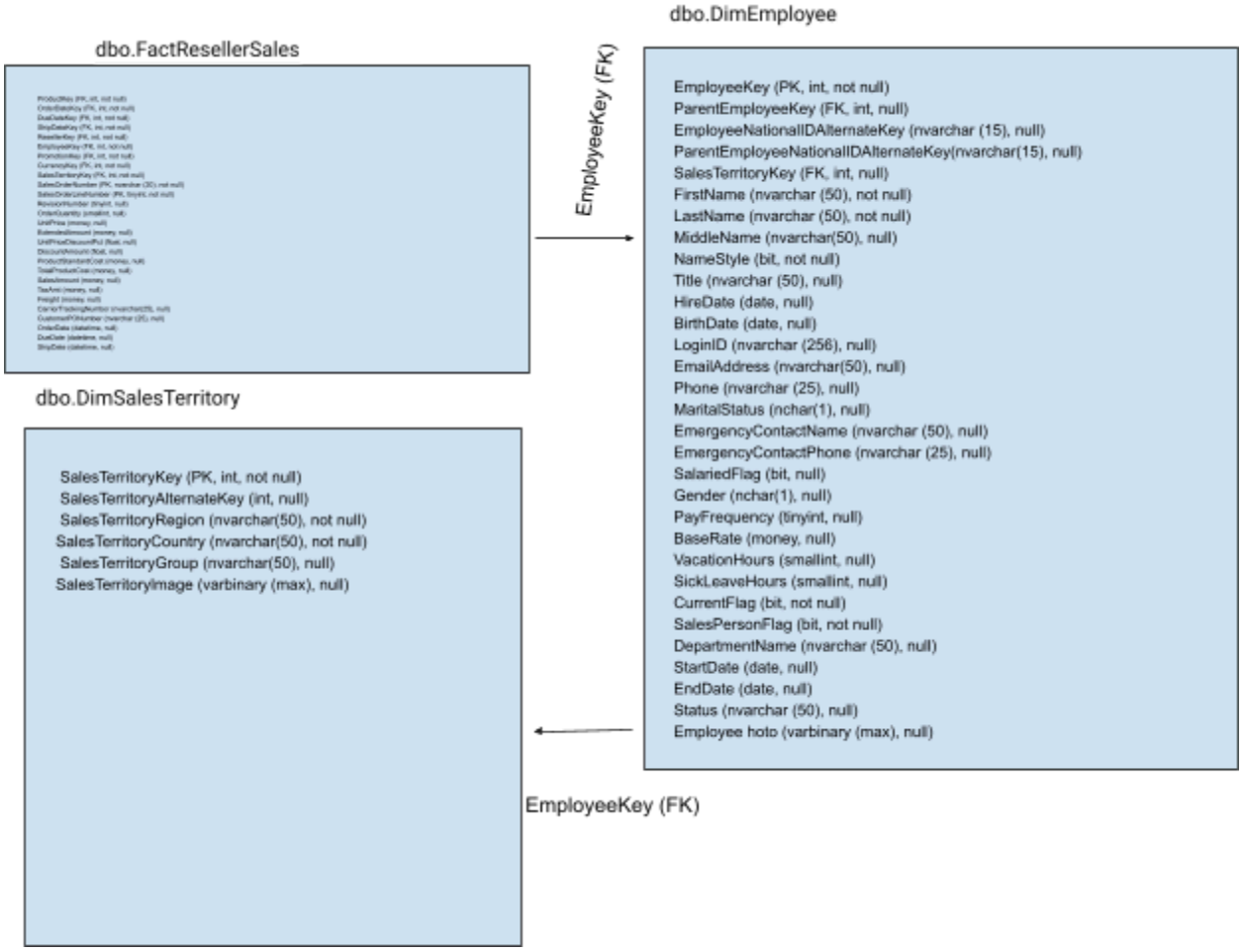
USE AdventureWorks2017;



Proposition: Retrieve average pay rates per department, including the number of unique positions in each, ordered by average pay rate in descending order.

REST OF MEDIUM (3)

USE AdventureWorksDW2017;



Proposition: Write a query that calculates and retrieves the total sales by each employee in a specific fiscal year, ordered by the total sales in descending order.

REST OF MEDIUM (4)

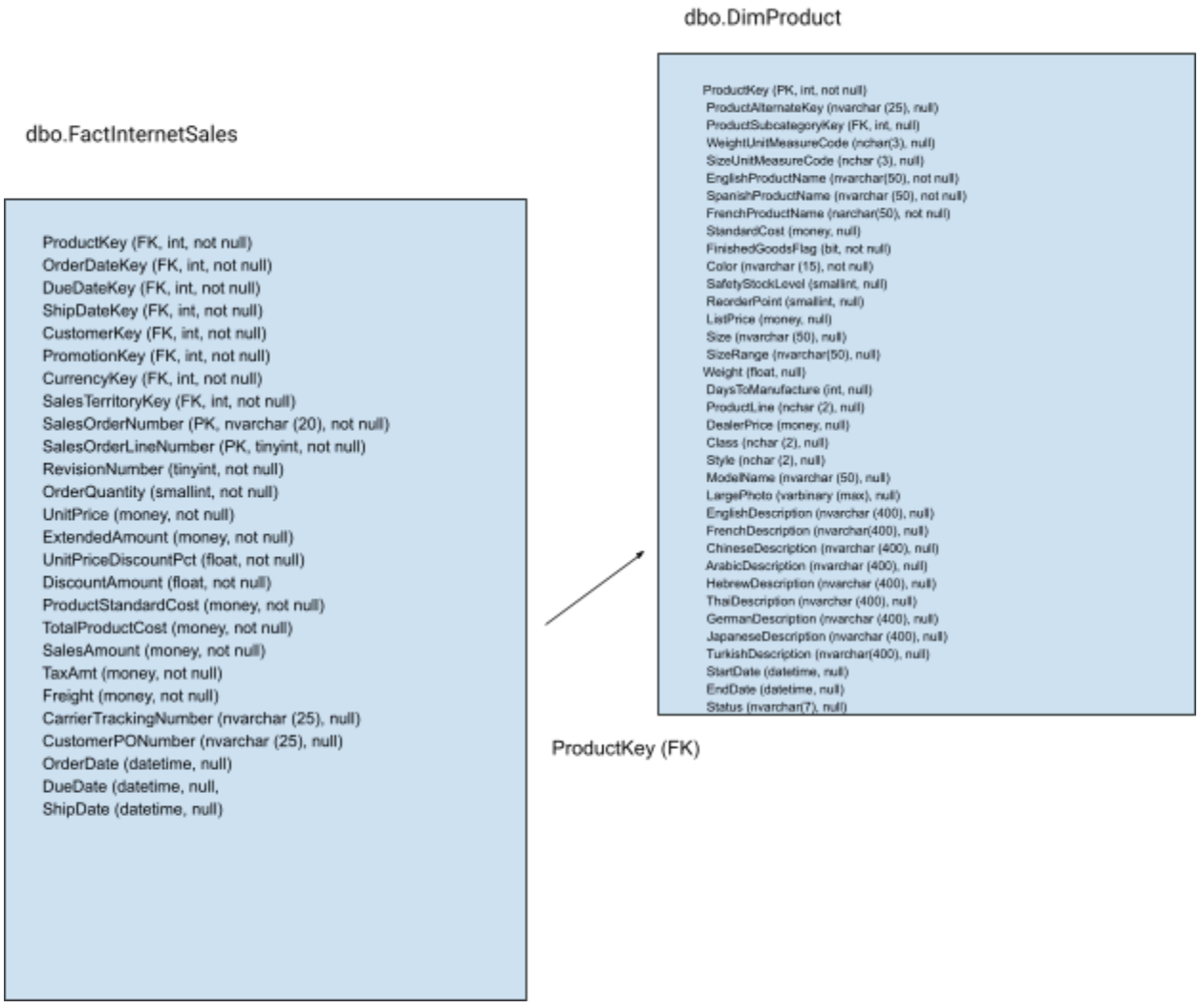
USE WideWorldimporters;

ER DIAGRAM

Proposition: Retrieve detailed summary of purchase orders, including the latest receipt date for each order.

REST OF MEDIUM (5)

USE AdventureWorksDW2017;



Proposition: Retrieve the total sales for each product sold in a specific sales territory during the year 2014, ordered by total sales in descending order.

REST OF MEDIUM (6)

USE WideWorldimporters;

ER DIAGRAM

Proposition: Aggregate and report on the total quantities on hand for each purchase order, sorted by these totals in descending order.

REST OF MEDIUM (7)

USE WideWorldImportersDW;

ER DIAGRAM

Proposition: Analyze sales performance of stock items, focusing on total quantity sold and the most recent sale amount for each item.

REST OF MEDIUM (8)

USE WideWorldImportersDW;

ER DIAGRAM

Proposition: Analyze the relationship between orders and movements by supplier and package, aggregating quantities and movement counts.

REST OF COMPLEX (1)

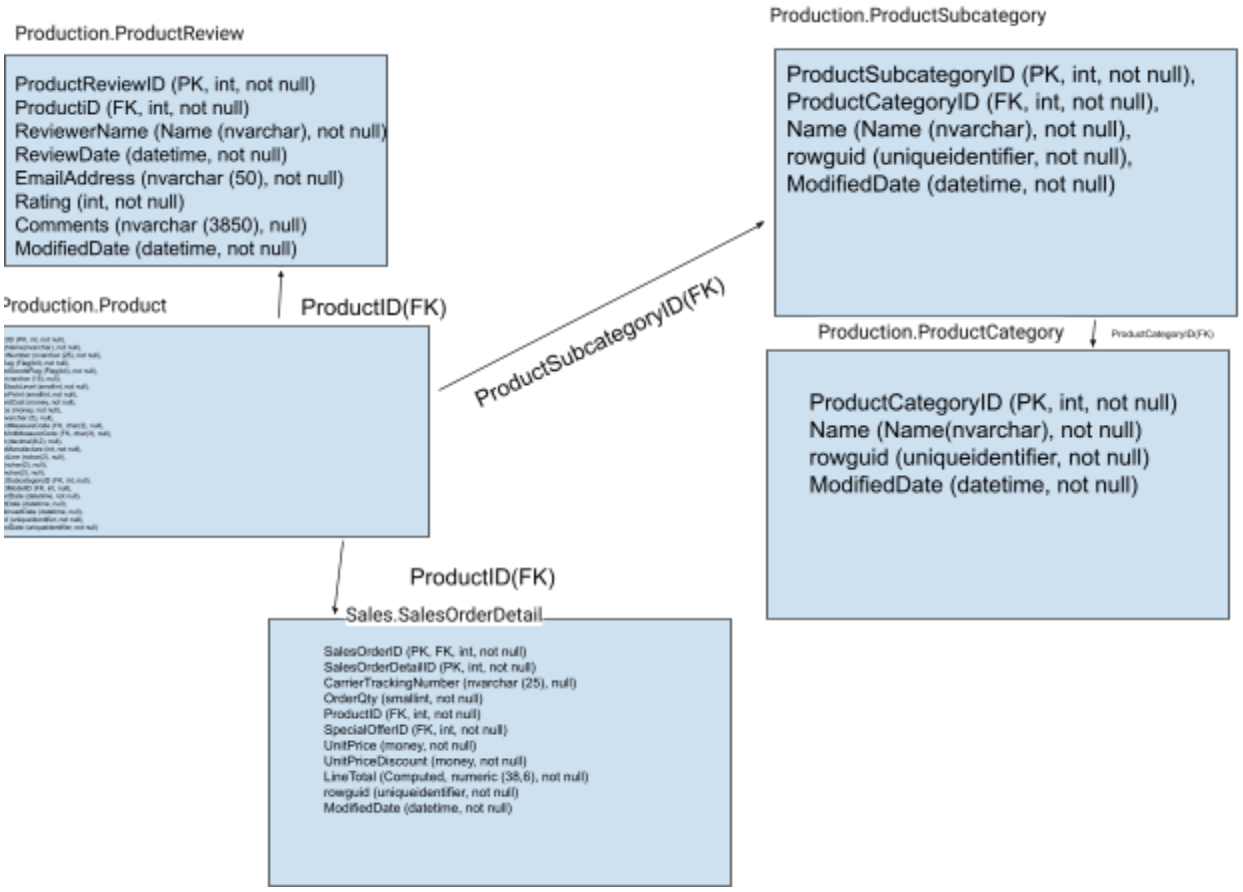
USE PrestigeCars ;

ER DIAGRAM

Proposition: Adjust total sales for tax based on the country using a user-defined function for tax adjustment, ensuring that sales data is accurately matched with the correct country information.

REST OF COMPLEX (2)

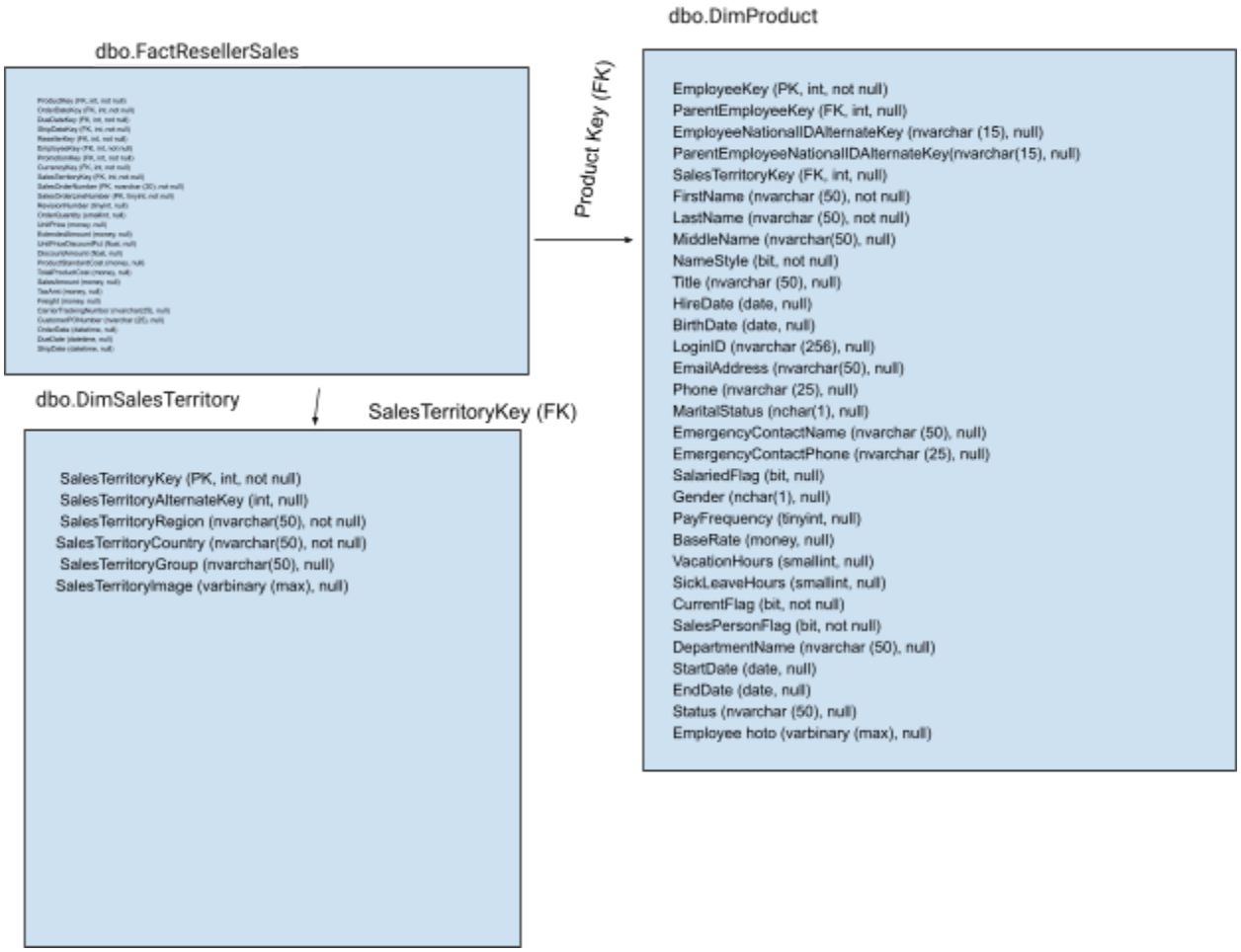
USE AdventureWorks2017;



Proposition: Analyze sales and customer ratings across product categories, utilizing a user-defined function for average rating calculation.

REST OF COMPLEX (3)

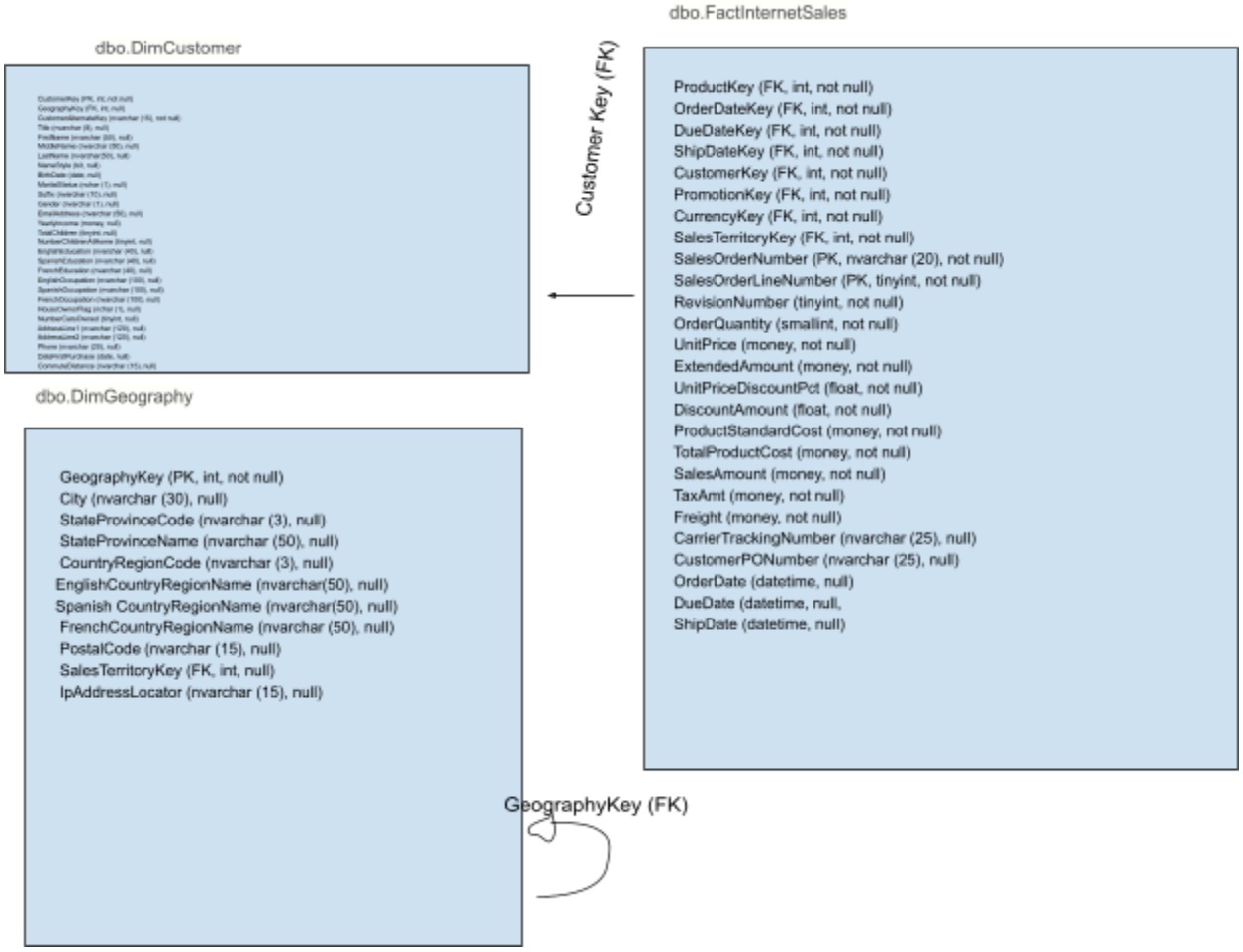
USE AdventureWorksDW2017;



Proposition: Categorize sales performance per product within sales territories using a user-defined function to determine sales categories based on total sales.

REST OF COMPLEX (4)

USE AdventureWorksDW2017;



Proposition: Calculate net sales after applying geographical discounts for customers in the United States using a user-defined function for discount calculation.

REST OF COMPLEX (5)

USE WideWorldimporters;

ER DIAGRAM

Proposition: Apply supplier discounts based on total expected cost of orders placed in the year 2013.

REST OF COMPLEX (6)

USE WideWorldImportersDW;

ER DIAGRAM

Proposition: Analyze sales data for a specific period, calculating total and average sales per category with a user-defined function for sales amount calculation.