

IST 722 - Data Warehouse

Homework Assignment 1

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Topic: Northwind Traders DB, Data
Profiling

Homework Assignment 1

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1 Northwind Traders Database Profile

Profile the following table in the Northwind Traders database.

Table	Type	Row Count	Business Key	One Row Is
Employees	Master Data	9	None (PK used)	An employee
EmployeeTerritories	Business Process	49	None (PKs used)	An employee assigned to a territory
Customers	Master Data	91	CustomerID	An customers company info and primary point of contact
Suppliers	Master Data	29	None (PK used)	An suppliers company info and primary point of contact
Products	Master Data	77	None (PK used)	An product and it's attributes
Shipments (of Orders)	Business Process	830	None (PK used - OrderID)	An order's shipment details.
Details (of an Order)	Business Process	2,155	None (PKs used) (OrderID & ProductID make up the tables composite key)	An Order's Product sold details.

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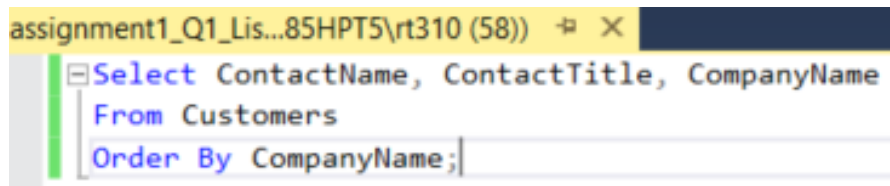
2 Data Profiling SQL

Write SQL queries to answer the following questions that might be associated with functional business requirements in a data warehouse. For each of the following provide a screenshot of the SQL query and its output, making sure your name or NetID appears in the screenshot.

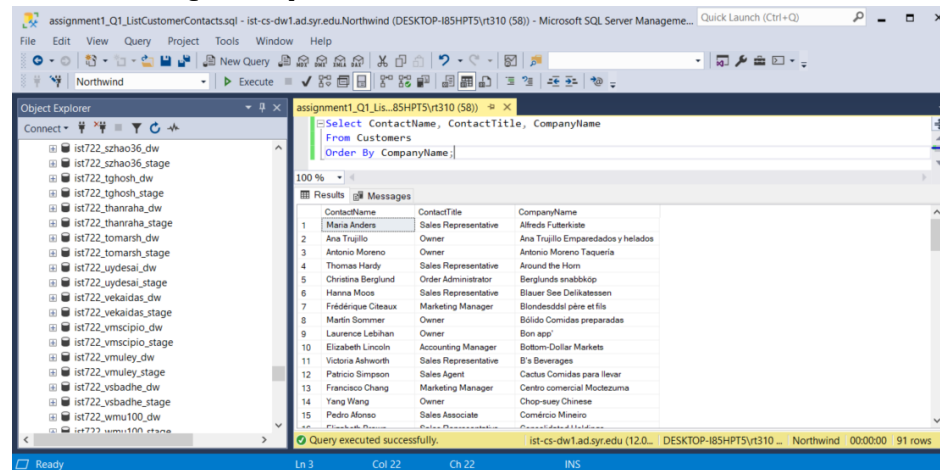
2.1 Question 1: Customer Contacts

List the customer contact names and titles sorted by company name.

2.1.1 SQL Query



2.1.2 SQL Output



2.2 Question 2: Total Products Sold

Factoring in discounts, what is total amount of product sold?

2.2.1 Assumptions:

- Shipping Freight Costs are NOT included in calculation of total amount of product sold.
- Order Details Table, Discount value is applied to each product unit sold.
- Order Details Table, UnitPrice value is used in the calculation and not the Product Tables UnitPrice. There are 658 instances where the Order Details table UnitPrice is different than the Product table UnitPrice for the same Product. See figure 3.2.1 below for details.

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Figure 3.2.1: UnitPrice Differences

SQLQuery4.sql - ist...-I85HPT5\rt310 (65))* SQLQuery3.sql - ist...-I85HPT5\rt310 (52))* SQLQuery2.sql - ist...-I85HPT5\rt310 (64))*

```

Select * From
  (Select od.ProductID as OD_ProductID, od.UnitPrice as OD_UnitPrice, p.ProductID as P_ProductID, p.UnitPrice as P_UnitPrice
   From Products p
   join [Order Details] od on p.ProductID = od.ProductID) AS inner_query
 Where OD_UnitPrice != P_UnitPrice
 Order By OD_ProductID
 ;

```

100 %

Results Messages

	OD_ProductID	OD_UnitPrice	P_ProductID	P_UnitPrice
313	40	14.70	40	18.40
314	40	14.70	40	18.40
315	40	14.70	40	18.40
316	41	7.70	41	9.65
317	41	7.70	41	9.65
318	41	7.70	41	9.65
319	41	7.70	41	9.65
320	41	7.70	41	9.65
321	41	7.70	41	9.65
322	41	7.70	41	9.65
323	41	7.70	41	9.65
324	41	7.70	41	9.65
325	41	7.70	41	9.65
326	41	7.70	41	9.65
327	42	11.20	42	14.00
328	42	11.20	42	14.00
329	42	11.20	42	14.00
330	42	9.80	42	14.00

Query executed successfully. | ist-cs-dw1.ad.syr.edu (12.0... | DESKTOP-I85HPT5\rt310 ... | Northwind | 00:00:00 | 658 rows

2.2.2 SQL Query

```

Select SUM(TotalOrderProductPriceSold) as Total_Product_Amt_Sold
  From
    (Select OrderID, ProductID, (DiscountedUnitPrice * Quantity) AS TotalOrderProductPriceSold
     From
       (Select OrderID, ProductID, UnitPrice, (UnitPrice - Discount) as DiscountedUnitPrice, Quantity, Discount
        From [Order Details]) as discounted_unit_price) as total_product_price
 ;

```

2.2.3 SQL Output

Results Messages

	Total_Product_Amt_Sold
1	1351136.62996197

Query execut... | ist-cs-dw1.ad.syr.edu (12.0... | DESKTOP-I85HPT5\rt310 ... | Northwind | 00:00:00 | 1 rows

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2.3 Question 3: Product Categories

Provide a list of **product category** names with counts of **products** in each **category**.

2.3.1 SQL Query

```

Select CategoryName as ProductCategoryName, COUNT(ProductID) as ProductCount
From
  (Select p.ProductID, p.ProductName, p.CategoryID, c.CategoryName, c.Description as CategoryDescription
  From Products p
   join Categories c on p.CategoryID = c.CategoryID) as prod_category_name
Group By CategoryName
Order By ProductCount DESC
;

```

2.3.2 SQL Output

	ProductCategoryName	ProductCount
1	Confections	13
2	Beverages	12
3	Condiments	12
4	Seafood	12
5	Dairy Products	10
6	Grains/Cereals	7
7	Meat/Poultry	6
8	Produce	5

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2.4 Question 4: Customer Order Details

Select a specific **customer**, and display that customer's **orders** with **total amount** of **product** sold for **each order**.

2.4.1 SQL Query

```

Select total_order_product_sold.OrderID, o.CustomerID, o.CompanyName, total_order_product_sold.Total_Order_Product_Amt_Sold
From
  (Select OrderID, SUM(TotalOrderProductPriceSold) as Total_Order_Product_Amt_Sold
   From
     (Select OrderID, ProductID, (DiscountedUnitPrice * Quantity) AS TotalOrderProductPriceSold
      From
        (Select OrderID, ProductID, UnitPrice, (UnitPrice - Discount) as DiscountedUnitPrice, Quantity, Discount
         From [Order Details]) as discounted_unit_price) as total_product_price
    Group By OrderID) as total_order_product_sold
  join (Select o.OrderID, o.CustomerID, c.CompanyName
       From Orders o
        join Customers c on o.CustomerID = c.CustomerID
        Where o.CustomerID = 'WHITC') o on total_order_product_sold.OrderID = o.OrderID
;

```

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2.4.2 SQL Output

Results		Messages		
	OrderID	CustomerID	CompanyName	Total_Order_Product_Amt_Sold
1	10269	WHITC	White Clover Markets	672
2	10344	WHITC	White Clover Markets	2838.5
3	10469	WHITC	White Clover Markets	1113.95000076294
4	10483	WHITC	White Clover Markets	700.749969482422
5	10504	WHITC	White Clover Markets	1388.5
6	10596	WHITC	White Clover Markets	1464.30004882813
7	10693	WHITC	White Clover Markets	2318.24996948242
8	10696	WHITC	White Clover Markets	996
9	10723	WHITC	White Clover Markets	468.449981689453
10	10740	WHITC	White Clover Markets	1751.19999694824
11	10861	WHITC	White Clover Markets	3523.39999389648
12	10904	WHITC	White Clover Markets	1924.25
13	11032	WHITC	White Clover Markets	8902.5
14	11066	WHITC	White Clover Markets	928.749996185303

Query executed succ...

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Northwind

00:00:00

14 rows

2.5 Question 5: Employee Order Shipping

Select a specific employee and each order, how it was shipped (shipvia), the company who shipped it, and the total number of days elapsed from order date to shipped date.

2.5.1 SQL Query

```

Select o.OrderID, e.EmployeeName, DATEDIFF(day, o.OrderDate, o.ShippedDate) as DaysToShip, s.CompanyName as ShippingCompany, o.ShipName as CompanyOrderedShipment
From Orders o
  join Shippers s on o.ShipVia = s.ShipperID
  join (Select EmployeeID, concat(FirstName, ' ', LastName) as EmployeeName
From Employees
Where EmployeeID = 3) e on o.EmployeeID = e.EmployeeID
Where o.EmployeeID = 3]
Order By DaysToShip DESC
;

```

2.5.2 SQL Output

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Results		Messages			
	OrderID	EmployeeName	DaysToShip	ShippingCompany	CompanyOrderedShipment
1	10924	Janet Leverling	35	United Package	Berglunds snabbköp
2	10309	Janet Leverling	34	Speedy Express	Hungry Owl All-Night Grocers
3	10441	Janet Leverling	32	United Package	Old World Delicatessen
4	10433	Janet Leverling	29	Federal Shipping	Princesa Isabel Vinhos
5	10779	Janet Leverling	29	United Package	Morgenstern Gesundkost
6	10568	Janet Leverling	26	Federal Shipping	Galería del gastronómo
7	10723	Janet Leverling	26	Speedy Express	White Clover Markets
8	10540	Janet Leverling	25	Federal Shipping	QUICK-Stop
9	10514	Janet Leverling	24	United Package	Ernst Handel
10	10536	Janet Leverling	23	United Package	Lehmanns Marktstand
11	10796	Janet Leverling	20	Speedy Express	HILARION-Abastos
12	10960	Janet Leverling	20	Speedy Express	HILARION-Abastos
13	10582	Janet Leverling	17	United Package	Blauer See Delikatessen
14	10793	Janet Leverling	15	Federal Shipping	Around the Horn
15	10759	Janet Leverling	14	Federal Shipping	Ana Trujillo Emparedados y helados
16	10856	Janet Leverling	13	United Package	Antonio Moreno Taquería
17	11004	Janet Leverling	13	Speedy Express	Maison Dewey
18	10638	Janet Leverling	12	Speedy Express	LINO-Delicatessen
19	10330	Janet Leverling	12	Speedy Express	LILA-Supermercado
20	10434	Janet Leverling	10	United Package	Folk och få HB
21	10712	Janet Leverling	10	Speedy Express	Hungry Owl All-Night Grocers
22	10492	Janet Leverling	10	Speedy Express	Bottom-Dollar Markets
23	10547	Janet Leverling	10	United Package	Seven Seas Imports
24	10988	Janet Leverling	10	United Package	Rattlesnake Canyon Grocery
25	11049	Janet Leverling	10	Speedy Express	Gourmet Lanchonetes
26	10974	Janet Leverling	9	Federal Shipping	Split Rail Beer & Ale
27	10918	Janet Leverling	9	Federal Shipping	Bottom-Dollar Markets
28	10831	Janet Leverling	9	United Package	Santé Gourmet
29	10854	Janet Leverling	9	United Package	Ernst Handel
30	10925	Janet Leverling	9	Speedy Express	Hanari Carnes
31	10936	Janet Leverling	9	United Package	Great Lakes Food Market
32	10751	Janet Leverling	9	Federal Shipping	Richter Supermarket
33	10772	Janet Leverling	9	United Package	Lehmanns Marktstand
34	10814	Janet Leverling	9	Federal Shipping	Victuailles en stock
35	10662	Janet Leverling	9	United Package	Lonesome Pine Restaurant
36	10429	Janet Leverling	9	United Package	Hungry Owl All-Night Grocers
37	10415	Janet Leverling	9	Speedy Express	Hungry Coyote Import Store
38	10444	Janet Leverling	9	Federal Shipping	Berglunds snabbköp
39	10449	Janet Leverling	9	United Package	Blondel père et fils
40	10438	Janet Leverling	8	United Package	Toms Spezialitäten
41	10484	Janet Leverling	8	Federal Shipping	B's Beverages
42	10321	Janet Leverling	8	United Package	Island Trading
43	10391	Janet Leverling	8	Federal Shipping	Drachenblut Delikatessen
44	10748	Janet Leverling	8	Speedy Express	Save-a-lot Markets
45	10495	Janet Leverling	8	Federal Shipping	Laughing Bacchus Wine Cellars
46	10592	Janet Leverling	8	Speedy Express	Lehmanns Marktstand
47	10778	Janet Leverling	8	Speedy Express	Berglunds snabbköp
48	10903	Janet Leverling	8	Federal Shipping	Hanari Carnes
49	10855	Janet Leverling	8	Speedy Express	Old World Delicatessen

Query executed successfully. | ist-cs-dw1.ad.syr.edu (12.0... | DESKTOP-I85HPT5\rt310 ... | Northwind | 00:00:00 | 127 rows