Toy Sales Analysis

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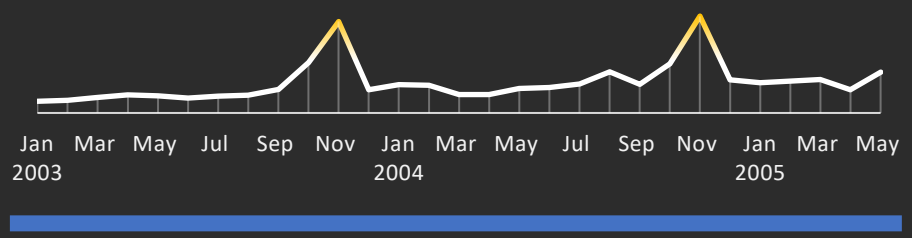
About the data

2.5 years of sales data of transportation toys like trucks, planes, motorcycles, ships, vintage cars, ships, etc.

Source: Kaggle.com

Objectives



1. Understand the quarterly revenue growth
2. Understand customer orders pattern thru segmentation
3. Find out which product price ranges sell more thru clustering
4. Distribution of sales by countries

The Process

Normalization

Table Columns

Field Name
ORDERNUMBER
QUANTITYORDERED
PRICEEACH
ORDERLINENUMBER
SALES
ORDERDATE
STATUS
QTR_ID
MONTH_ID
YEAR_ID
PRODUCTLINE
MSRP
PRODUCTCODE
CUSTOMERNAME
PHONE
ADDRESSLINE1
ADDRESSLINE2
CITY
STATE
POSTALCODE
COUNTRY
TERRITORY
CONTACTLASTNAME
CONTACTFIRSTNAME
DEALSIZE

Type Identification and Columns Clean-Up

Field Name	Type	Null
ORDERNUMBER	int	NOT NULL
QUANTITYORDERED	int	NOT NULL
PRICEEACH	money	NOT NULL
ORDERLINENUMBER	smallint	NOT NULL
SALES	money	NOT NULL
ORDERDATE	date	NOT NULL
STATUS	varchar(10)	NOT NULL
QTR_ID	int	
MONTH_ID	int	
YEAR_ID	int	
PRODUCTLINE	vachar(20)	NOT NULL
MSRP	money	NOT NULL
PRODUCTCODE	varchar(10)	NOT NULL
CUSTOMERNAME	varchar(50)	NOT NULL
PHONE	varchar(20)	NOT NULL
ADDRESSLINE1	varchar(50)	NOT NULL
ADDRESSLINE2	varchar(50)	
CITY	varchar(20)	NOT NULL
STATE	varchar(20)	
POSTALCODE	varchar(10)	
COUNTRY	varchar(20)	NOT NULL
TERRITORY	varchar(20))	
CONTACTLASTNAME	varchar(20))	NOT NULL
CONTACTFIRSTNAME	varchar(20))	NOT NULL
DEALSIZE	varchar(10)	NOT NULL

First normal form (1NF)

Field Name	Type	Null
ORDERNUMBER	int	NOT NULL
QUANTITYORDERED	int	NOT NULL
PRICEEACH	money	NOT NULL
ORDERLINENUMBER	smallint	NOT NULL
SALES	money	NOT NULL
ORDERDATE	date	NOT NULL
STATUS	varchar(10)	NOT NULL
QTR_ID	int	
MONTH_ID	int	
YEAR_ID	int	
PRODUCTLINE	vachar(20)	NOT NULL
MSRP	money	NOT NULL
PRODUCTCODE	varchar(10)	NOT NULL
CUSTOMERNAME	varchar(50)	NOT NULL
PHONE	varchar(20)	NOT NULL
ADDRESSLINE1	varchar(50)	NOT NULL
ADDRESSLINE2	varchar(50)	
CITY	varchar(20)	NOT NULL
STATE	varchar(20)	
POSTALCODE	varchar(10)	
COUNTRY	varchar(20)	NOT NULL
TERRITORY	varchar(20))	
CONTACTLASTNAME	varchar(20))	NOT NULL
CONTACTFIRSTNAME	varchar(20))	NOT NULL
DEALSIZE	varchar(10)	NOT NULL

ProductLine

Field Name	Attribute	Null
ID	smallint	
Line	varchar(20)	NOT NULL

OrderStatus

Field Name	Attribute	Null
ID	smallint	
Status	varchar(10)	NOT NULL

Customers

Field Name	Attribute	Null
ID	int	
BusinessName	varchar(50)	NOT NULL
Address1	varchar(50)	NOT NULL
Address2	varchar(50)	
PostalCode	varchar(10)	
ContactLName	varchar(20))	NOT NULL
ContactFName	varchar(20))	NOT NULL
Phone	varchar(20)	NOT NULL
ID	smallint	
City	varchar(20)	NOT NULL
State	varchar(20)	
Country	varchar(20)	NOT NULL
Territory	varchar(20))	

OrderLines

Field Name	Attribute	Null
ID	int	
Orders_ID	int	NOT NULL
OrderLineNo	int	NOT NULL
Quantity	int	NOT NULL
Products_ID	varchar(10)	NOT NULL
Price	money	NOT NULL
SalesAmount	money	NOT NULL

Products

Field Name	Attribute	Null
ID	varchar(10)	
ProductLine_ID	int	NOT NULL
MSRP	money	NOT NULL

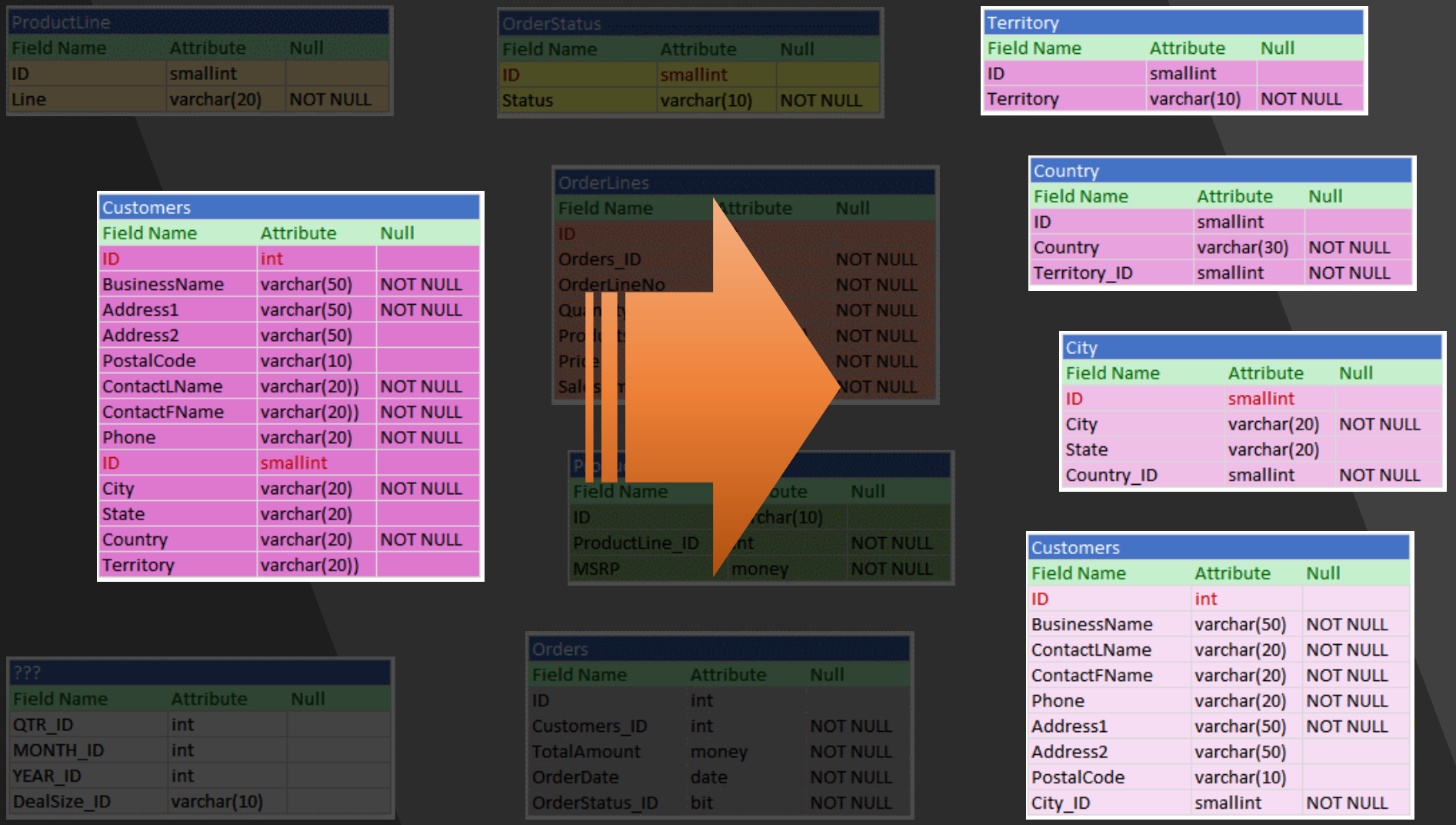
???

Field Name	Attribute	Null
QTR_ID	int	
MONTH_ID	int	
YEAR_ID	int	
DealSize_ID	varchar(10)	

Orders

Field Name	Attribute	Null
ID	int	
Customers_ID	int	NOT NULL
TotalAmount	money	NOT NULL
OrderDate	date	NOT NULL
OrderStatus_ID	bit	NOT NULL

Second normal form (2NF)



ProductLine

Field Name	Attribute	Null
ID	smallint	
Line	varchar(20)	NOT NULL

OrderStatus

Field Name	Attribute	Null
ID	smallint	
Status	varchar(10)	NOT NULL

Territory

Field Name	Attribute	Null
ID	smallint	
Territory	varchar(10)	NOT NULL

Customers

Field Name	Attribute	Null
ID	int	
BusinessName	varchar(50)	NOT NULL
Address1	varchar(50)	NOT NULL
Address2	varchar(50)	
PostalCode	varchar(10)	
ContactLName	varchar(20))	NOT NULL
ContactFName	varchar(20))	NOT NULL
Phone	varchar(20)	NOT NULL
ID	smallint	
City	varchar(20)	NOT NULL
State	varchar(20)	
Country	varchar(20)	NOT NULL
Territory	varchar(20))	

OrderLines

Field Name	Attribute	Null
ID		
Orders_ID		NOT NULL
OrderLineNo		NOT NULL
Qua		NOT NULL
Pro		NOT NULL
Pric		NOT NULL
Sal		NOT NULL

Field Name	ute	Null
ID	char(10)	
ProductLine_ID	nt	NOT NULL
MSRP	money	NOT NULL

Country

Field Name	Attribute	Null
ID	smallint	
Country	varchar(30)	NOT NULL
Territory_ID	smallint	NOT NULL

City

Field Name	Attribute	Null
ID	smallint	
City	varchar(20)	NOT NULL
State	varchar(20)	
Country_ID	smallint	NOT NULL

Customers

Field Name	Attribute	Null
ID	int	
BusinessName	varchar(50)	NOT NULL
ContactLName	varchar(20)	NOT NULL
ContactFName	varchar(20)	NOT NULL
Phone	varchar(20)	NOT NULL
Address1	varchar(50)	NOT NULL
Address2	varchar(50)	
PostalCode	varchar(10)	
City_ID	smallint	NOT NULL

???

Field Name	Attribute	Null
QTR_ID	int	
MONTH_ID	int	
YEAR_ID	int	
DealSize_ID	varchar(10)	

Orders

Field Name	Attribute	Null
ID	int	
Customers_ID	int	NOT NULL
TotalAmount	money	NOT NULL
OrderDate	date	NOT NULL
OrderStatus_ID	bit	NOT NULL

Third normal form (3NF)

Customers		
Field Name	Attribute	Null
ID	int	
BusinessName	varchar(50)	NOT NULL
ContactLName	varchar(20)	NOT NULL
ContactFName	varchar(20)	NOT NULL
Phone	varchar(20)	NOT NULL
Address1	varchar(50)	NOT NULL
Address2	varchar(50)	
PostalCode	varchar(10)	
City_ID	smallint	NOT NULL

Territory		
Field Name	Attribute	Null
ID	smallint	
Territory	varchar(10)	NOT NULL

Country		
Field Name	Attribute	Null
ID	smallint	
Country	varchar(30)	NOT NULL
Territory_ID	smallint	NOT NULL

City		
Field Name	Attribute	Null
ID	smallint	
City	varchar(20)	NOT NULL
State	varchar(20)	
Country_ID	smallint	NOT NULL

OrderStatus		
Field Name	Attribute	Null
ID	smallint	
Status	varchar(10)	NOT NULL

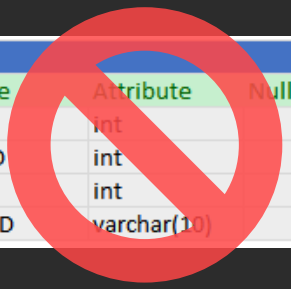
OrderLines		
Field Name	Attribute	Null
ID	int	
Orders_ID	int	NOT NULL
OrderLineNo	int	NOT NULL
Quantity	int	NOT NULL
Products_ID	varchar(10)	NOT NULL
Price	money	NOT NULL
SalesAmount	money	NOT NULL

Products		
Field Name	Attribute	Null
ID	varchar(10)	
ProductLine_ID	int	NOT NULL
MSRP	money	NOT NULL

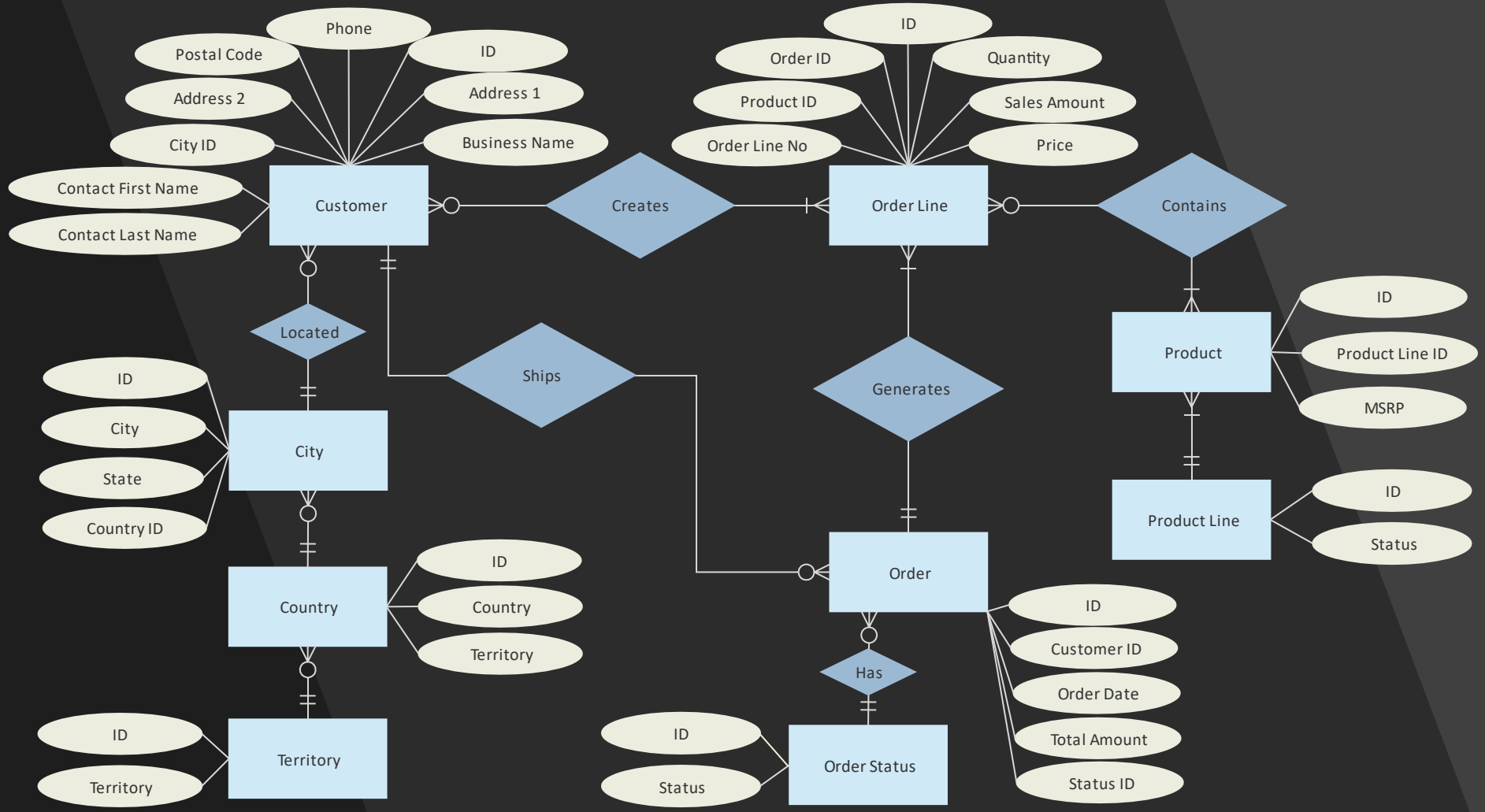
Orders		
Field Name	Attribute	Null
ID	int	
Customers_ID	int	NOT NULL
TotalAmount	money	NOT NULL
OrderDate	date	NOT NULL
OrderStatus_ID	bit	NOT NULL

ProductLine		
Field Name	Attribute	Null
ID	smallint	
Line	varchar(20)	NOT NULL

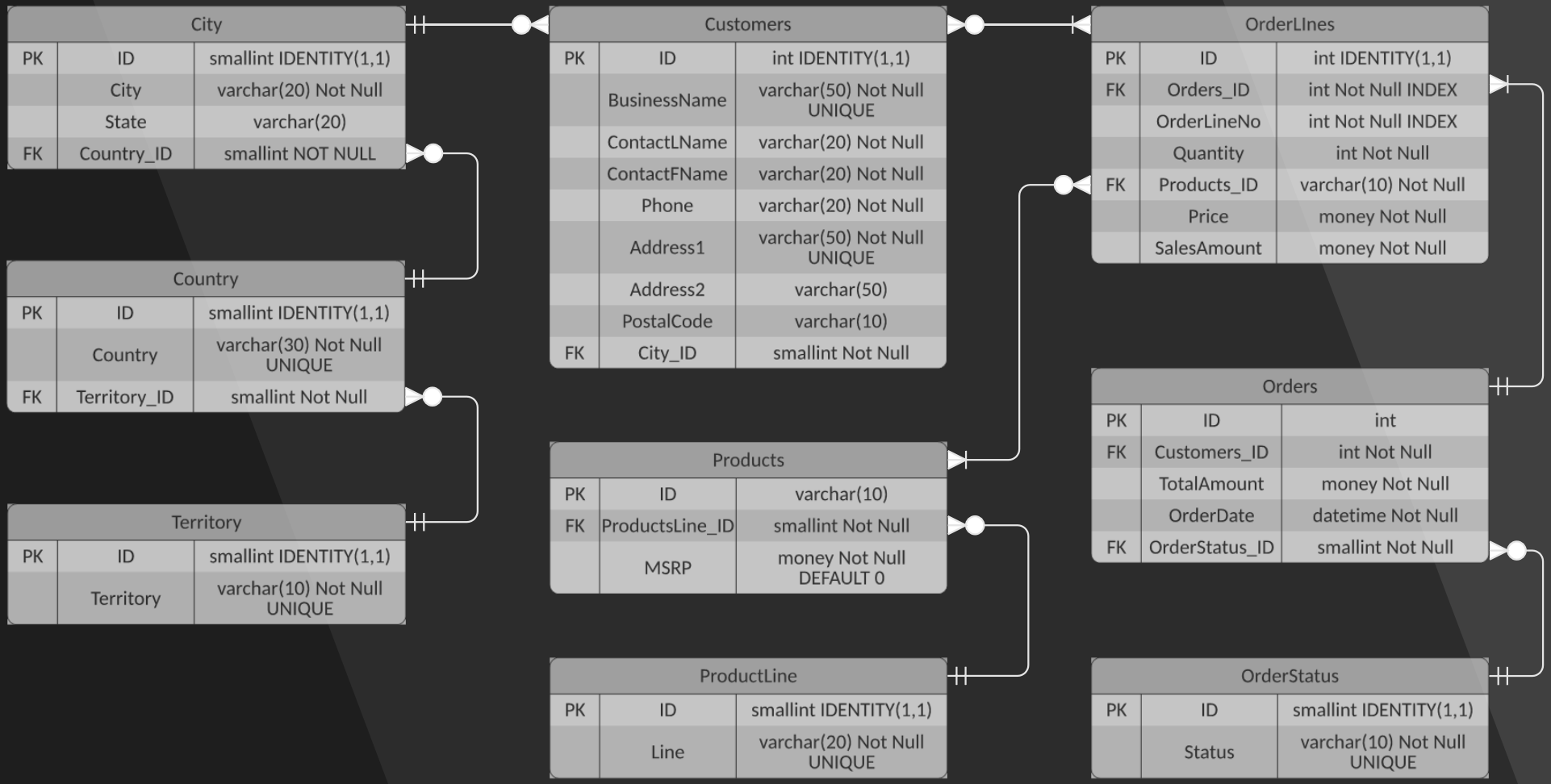
???		
Field Name	Attribute	Null
QTR_ID	int	
MONTH_ID	int	
YEAR_ID	int	
DealSize_ID	varchar(10)	



Entity relationship diagram



Relational schematic diagram



Data cleanup using PowerQuery (1 of 3)

Some Price values does not match [QUANTITY / SALES] values

$ Price	ABC 123 Price_
95.70	95.7
81.35	81.35
94.74	94.74
83.26	83.26
100.00	106.23
96.66	96.66
86.13	86.13
100.00	114.84
98.57	98.57
100.00	114.84
100.00	107.18
100.00	101.44
100.00	113.88
100.00	108.14
92.83	92.83

New Column using [QUANTITY / SALES] and changed Data Type to Currency

$ Price
95.70
81.35
94.74
83.26
106.23
96.66
86.13
114.84
98.57
114.84
107.18
101.44
113.88
108.14
92.83

Data cleanup using PowerQuery (2 of 3)

Some Singapore records are tagged to Japan territory

Country	Territory
Singapore	Japan
Singapore	Japan
Singapore	APAC
Singapore	APAC
Singapore	Japan
Singapore	Japan
Singapore	Japan
Singapore	Japan
Singapore	Japan
Singapore	Japan
Singapore	Japan
Singapore	Japan
Singapore	Japan
Singapore	APAC
Singapore	Japan
Singapore	Japan

Replaced affected 'Japan' values with Singapore and Japan columns filtered

Country	Territory
Singapore	APAC
Singapore	APAC
Singapore	APAC
Singapore	APAC
Singapore	APAC
Singapore	APAC
Singapore	APAC
Singapore	APAC
Singapore	APAC
Singapore	APAC
Singapore	APAC
Singapore	APAC
Singapore	APAC
Singapore	APAC
Singapore	APAC
Singapore	APAC

Data cleanup using PowerQuery (3 of 3)

Correcting date column to follow machine date format

OrderDate
2/24/2003 0:00
05/07/2003 00:00:00
07/01/2003 00:00:00
8/25/2003 0:00
10/10/2003 00:00:00
10/28/2003 0:00
11/11/2003 00:00:00
11/18/2003 0:00
12/01/2003 00:00:00
1/15/2004 0:00
2/20/2004 0:00
04/05/2004 00:00:00
5/18/2004 0:00
6/28/2004 0:00
7/23/2004 0:00

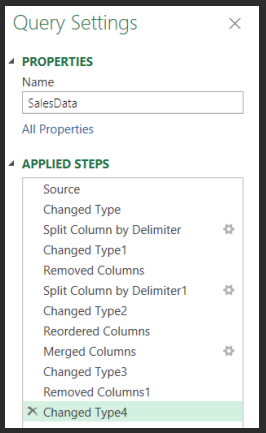
OrderDate.1	OrderDate.2
2/24/2003	00:00:00
05/07/2003	00:00:00
07/01/2003	00:00:00
8/25/2003	00:00:00
10/10/2003	00:00:00
10/28/2003	00:00:00
11/11/2003	00:00:00
11/18/2003	00:00:00
12/01/2003	00:00:00
1/15/2004	00:00:00
2/20/2004	00:00:00
04/05/2004	00:00:00
5/18/2004	00:00:00
6/28/2004	00:00:00
7/23/2004	00:00:00

OrderDate.1.2	OrderDate.1.1	OrderDate.1.3
24	2	2003
7	5	2003
1	7	2003
25	8	2003
10	10	2003
28	10	2003
11	11	2003
18	11	2003
1	12	2003
15	1	2004
20	2	2004
5	4	2004
18	5	2004
28	6	2004
23	7	2004

OrderDate
24/02/2003
07/05/2003
01/07/2003
25/08/2003
10/10/2003
28/10/2003
11/11/2003
18/11/2003
01/12/2003
15/01/2004
20/02/2004
05/04/2004
18/05/2004
28/06/2004
23/07/2004

Deletion of unnecessary columns and data type change

QTR_ID	MONTH_ID	YEAR_ID
1	2	2003
2	5	2003
3	7	2003
3	8	2003
4	10	2003
4	10	2003
4	11	2003
4	11	2003
4	12	2003
1	1	2004
1	2	2004
2	4	2004
2	5	2004
2	6	2004
3	7	2004



DDL queries

Capstone2.sql

Database and table definitions

```
Use master

IF EXISTS (SELECT * FROM sys.databases WHERE name = N'Capstone2')
    DROP DATABASE Capstone2
GO

CREATE DATABASE Capstone2
GO
USE Capstone2
GO

CREATE SCHEMA refTable
GO
CREATE SCHEMA Products
GO
CREATE SCHEMA Customers
GO
CREATE SCHEMA Orders
GO
```

```
CREATE TABLE refTable.Territory
(
    ID smallint IDENTITY(1, 1)
    , Territory varchar(10) NOT NULL UNIQUE
)
```

```
CREATE TABLE refTable.Country
(
    ID smallint IDENTITY(1, 1)
    , Country varchar(30) NOT NULL
    , Territory_ID smallint
)
```

```
CREATE TABLE refTable.City
(
    ID smallint IDENTITY(1,1)
    , City varchar(20) NOT NULL
    , State varchar(20)
    , Country_ID smallint NOT NULL
)
```

```
CREATE TABLE Customers.Customers
(
    ID int IDENTITY(1, 1)
    , BusinessName varchar(50) NOT NULL
    , ContactLName varchar(20) NOT NULL
    , ContactFName varchar(20) NOT NULL
    , Phone varchar(20) NOT NULL
    , Address1 varchar(50) NOT NULL
    , Address2 varchar(50)
    , PostalCode varchar(10)
    , City_ID smallint NOT NULL
)
```

```
CREATE TABLE Orders.OrderStatus
(
    ID smallint IDENTITY(1,1)
    , Status varchar(10) NOT NULL
)
```

```
CREATE TABLE Orders.Orders
(
    ID int NOT NULL
    , Customers_ID int NOT NULL
    , TotalAmount money NOT NULL
    , OrderDate datetime NOT NULL
    , OrderStatus_ID smallint NOT NULL
)
```

```
CREATE TABLE Orders.OrderLines
(
    ID int IDENTITY(1, 1)
    , Orders_ID int NOT NULL
    , OrderLineNo int NOT NULL
    , Quantity int NOT NULL
    , Products_ID varchar(10) NOT NULL
    , Price money NOT NULL
    , SalesAmount money NOT NULL
)
```

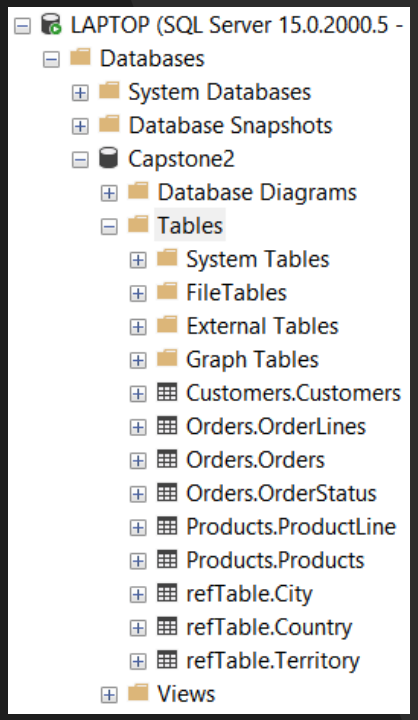
```
CREATE TABLE Products.ProductLine
(
    ID smallint IDENTITY(1,1)
    , Line varchar(20) NOT NULL
)
```

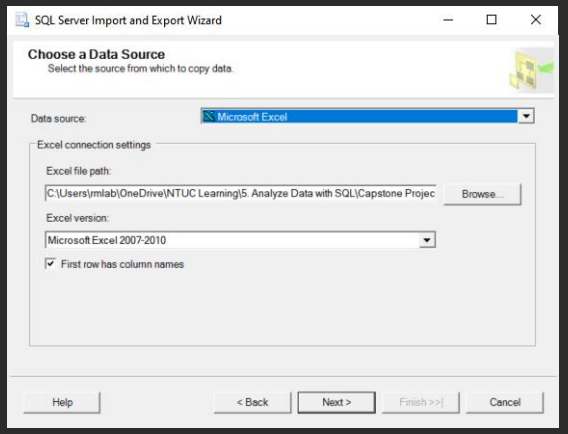
```
CREATE TABLE Products.Products
(
    ID varchar(10) NOT NULL
    , ProductLine_ID smallint NOT NULL
    , MSRP money NOT NULL DEFAULT 0
)
```

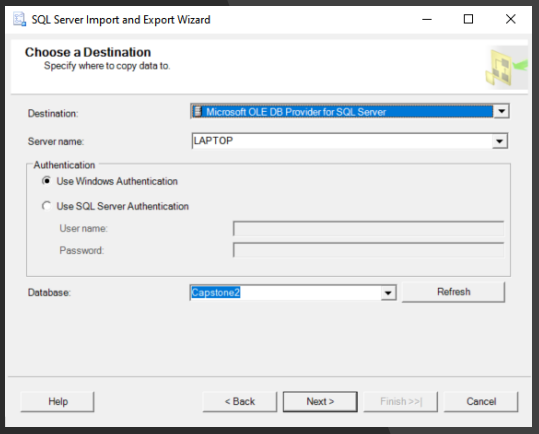
Constraints and indexes definitions

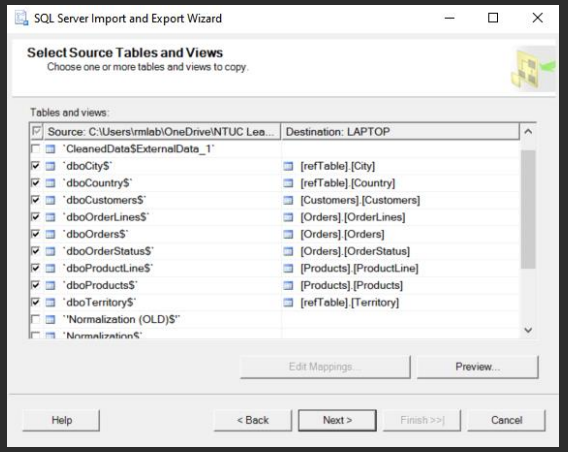
```
ALTER TABLE refTable.Territory
    ADD CONSTRAINT [Territory_ID_pk] PRIMARY KEY ([ID])
    , CONSTRAINT [Territory_Territory_uq] UNIQUE ([Territory])

ALTER TABLE refTable.Country
    ADD CONSTRAINT [Country_ID_pk] PRIMARY KEY ([ID])
    , CONSTRAINT [Country_Territory_ID_fk] FOREIGN KEY ([Territory_ID]) REFERENCES refTable.Territory ([ID])
    , CONSTRAINT [Country_Country_uq] UNIQUE ([Country])

ALTER TABLE refTable.City
    ADD CONSTRAINT [City_ID_pk] PRIMARY KEY ([ID])
    , CONSTRAINT [City_Country_ID_fk] FOREIGN KEY ([Country_ID]) REFERENCES refTable.Country ([ID])

ALTER TABLE Products.ProductLine
    ADD CONSTRAINT [ProductLine_ID_pk] PRIMARY KEY ([ID])
    , CONSTRAINT [ProductLine_Line_uq] UNIQUE ([Line])

ALTER TABLE Products.Products
    ADD CONSTRAINT [Products_ID_pk] PRIMARY KEY ([ID])
    , CONSTRAINT [Products_ProductLine_ID_fk] FOREIGN KEY ([ProductLine_ID]) REFERENCES Products.ProductLine ([ID])

ALTER TABLE Customers.Customers
    ADD CONSTRAINT [Customers_ID_pk] PRIMARY KEY ([ID])
    , CONSTRAINT [Customers_City_ID_fk] FOREIGN KEY ([City_ID]) REFERENCES refTable.City ([ID])
    , CONSTRAINT [Customers_BusinessName_uq] UNIQUE ([BusinessName], [Address1])

ALTER TABLE Orders.OrderStatus
    ADD CONSTRAINT [OrderStatus_ID_pk] PRIMARY KEY ([ID])
    , CONSTRAINT [OrderStatus_Status_uq] UNIQUE ([Status])

ALTER TABLE  Orders.Orders
    ADD CONSTRAINT [Orders_ID_pk] PRIMARY KEY ([ID])
    , CONSTRAINT [Orders_Customers_ID_fk] FOREIGN KEY ([Customers_ID]) REFERENCES Customers.Customers ([ID])
    , CONSTRAINT [Orders_OrderStatus_ID_fk] FOREIGN KEY ([OrderStatus_ID]) REFERENCES Orders.OrderStatus ([ID])

ALTER TABLE Orders.OrderLines
    ADD CONSTRAINT [OrderLines_ID_pk] PRIMARY KEY ([ID])
    , CONSTRAINT [OrderLines_Orders_ID_fk] FOREIGN KEY ([Orders_ID]) REFERENCES  Orders.Orders ([ID])
    , CONSTRAINT [OrderLines_Products_ID_fk] FOREIGN KEY ([Products_ID]) REFERENCES Products.Products ([ID])

CREATE INDEX [OrderLines_Orders_ID_OrderLineNo_idx] ON Orders.OrderLines ([Orders_ID], [OrderLineNo])
```

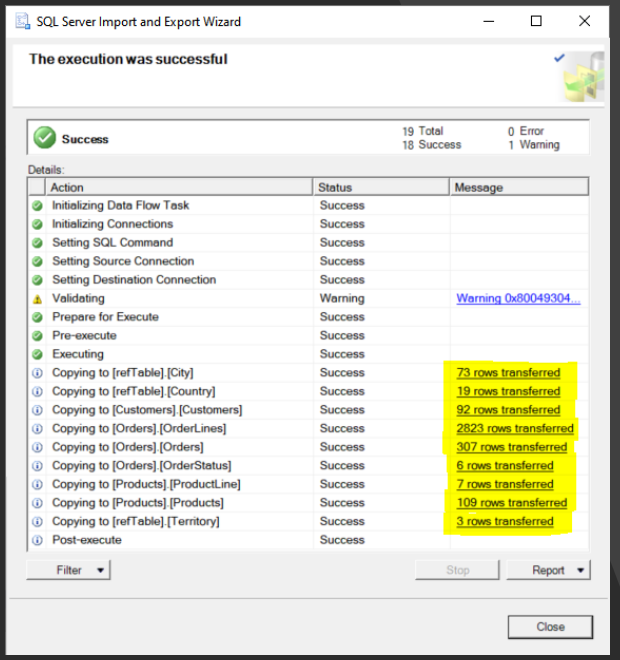
Data import using Tasks > Import Data









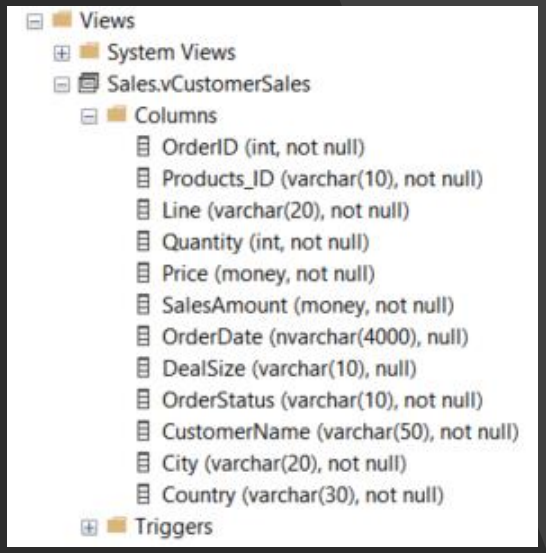


DML Queries – Create View

vCustomerSales.sql

View ‘Sales.vCustomerSales’ will be the source of the Excel dashboard

```
IF Object_ID('Sales.vCustomerSales') IS NOT NULL DROP VIEW Sales.vCustomerSales
IF EXISTS (select * from sys.schemas WHERE name='Sales') DROP SCHEMA Sales
GO
CREATE SCHEMA Sales
GO

CREATE VIEW Sales.vCustomerSales AS
SELECT o.ID AS OrderID
     , ol.Products_ID
     , pl.Line
     , ol.Quantity
     , ol.Price
     , ol.SalesAmount
     , FORMAT(o.OrderDate, 'dd/MM/yyyy') AS OrderDate
     , Orders.svfDealSize(ol.SalesAmount) as 'DealSize'
     , os.Status AS OrderStatus
     , c.BusinessName AS CustomerName
     , ct.City
     , co.Country
FROM Orders.Orders o
JOIN Customers.Customers c
    ON o.Customers_ID = c.ID
JOIN refTable.City ct
    ON c.City_ID = ct.ID
JOIN refTable.Country co
    ON ct.Country_ID = co.ID
JOIN Orders.OrderStatus os
    ON o.OrderStatus_ID = os.ID
JOIN Orders.OrderLines ol
    ON ol.Orders_ID = o.ID
JOIN Products.Products p
    ON ol.Products_ID = p.ID
JOIN Products.ProductLine pl
    ON p.ProductLine_ID = pl.ID
```



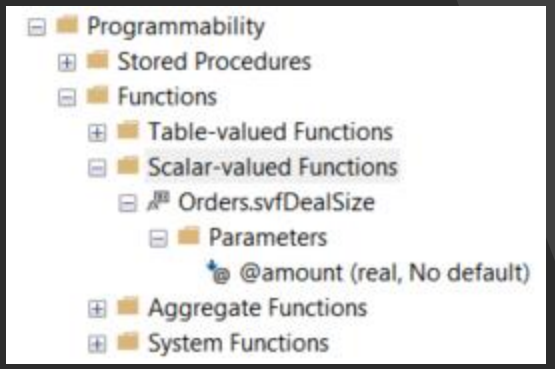
DML Queries – Create Function

svfDealSize.sql

Function ‘Orders.svfDealSize’ to classify ranges of sales amount into:

Small : Less than $3000
Medium : More than $3000 and less than $7000
Large : Above $7000

```
3  IF Object_ID('Orders.svfDealSize') IS NOT NULL DROP FUNCTION dbo.DealSize
4  GO
5
6  CREATE FUNCTION Orders.svfDealSize(@amount real)
7  RETURNS varchar(10)
8  AS
9  BEGIN
10     DECLARE @size varchar(10)
11     IF @amount > 7000
12         SET @size = 'Large'
13     ELSE IF @amount > 3000
14         SET @size = 'Medium'
15     ELSE
16         SET @size = 'Small'
17     RETURN @size
18 END;
```



View ‘Sales.vCustomerSales’ data

View ‘Sales.vCustomerSales’ to be referenced by Excel dashboard

```
22  Select * from Sales.vCustomerSales
```

100 %

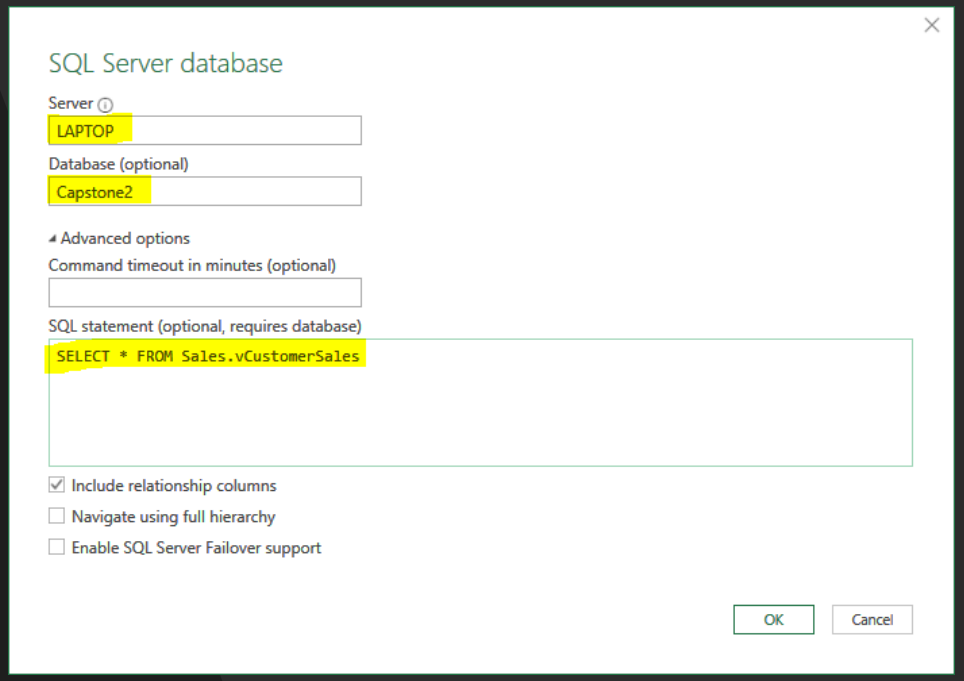
Results | Messages

	OrderID	Products_ID	Line	Quantity	Price	SalesAmount	OrderDate	DealSize	OrderStatus	CustomerName	City	Country
1	10100	S24_3969	Vintage Cars	49	34.47	1689.03	06/01/2003	Small	Shipped	Online Diecast Creations Co.	Nashua	USA
2	10100	S18_2248	Vintage Cars	50	67.80	3390.00	06/01/2003	Medium	Shipped	Online Diecast Creations Co.	Nashua	USA
3	10100	S18_1749	Vintage Cars	30	171.70	5151.00	06/01/2003	Medium	Shipped	Online Diecast Creations Co.	Nashua	USA
4	10100	S18_4409	Vintage Cars	22	86.51	1903.22	06/01/2003	Small	Shipped	Online Diecast Creations Co.	Nashua	USA
5	10101	S18_2795	Vintage Cars	26	145.13	3773.38	09/01/2003	Medium	Shipped	Blauer See Auto, Co.	Frankfurt	Germany
6	10101	S24_2022	Vintage Cars	46	53.76	2472.96	09/01/2003	Small	Shipped	Blauer See Auto, Co.	Frankfurt	Germany
7	10101	S24_1937	Vintage Cars	45	31.20	1404.00	09/01/2003	Small	Shipped	Blauer See Auto, Co.	Frankfurt	Germany
8	10101	S18_2325	Vintage Cars	25	151.28	3782.00	09/01/2003	Medium	Shipped	Blauer See Auto, Co.	Frankfurt	Germany
9	10102	S18_1367	Vintage Cars	41	50.14	2055.74	10/01/2003	Small	Shipped	Vitachrome Inc.	NYC	USA
10	10102	S18_1342	Vintage Cars	39	123.29	4808.31	10/01/2003	Medium	Shipped	Vitachrome Inc.	NYC	USA
11	10103	S24_2300	Trucks and Buses	36	102.23	3680.28	29/01/2003	Medium	Shipped	Baane Mini Imports	Stavern	Norway
12	10103	S18_2432	Trucks and Buses	22	54.09	1189.98	29/01/2003	Small	Shipped	Baane Mini Imports	Stavern	Norway
13	10103	S32_1268	Trucks and Buses	31	104.01	3224.31	29/01/2003	Medium	Shipped	Baane Mini Imports	Stavern	Norway
14	10103	S10_4962	Classic Cars	42	128.53	5398.26	29/01/2003	Medium	Shipped	Baane Mini Imports	Stavern	Norway
15	10103	S18_4600	Trucks and Buses	36	117.45	4228.20	29/01/2003	Medium	Shipped	Baane Mini Imports	Stavern	Norway
16	10103	S700_2824	Classic Cars	42	106.21	4460.82	29/01/2003	Medium	Shipped	Baane Mini Imports	Stavern	Norway
17	10103	S32_3522	Trucks and Buses	45	75.63	3403.35	29/01/2003	Medium	Shipped	Baane Mini Imports	Stavern	Norway

Data Import using Excel PowerQuery

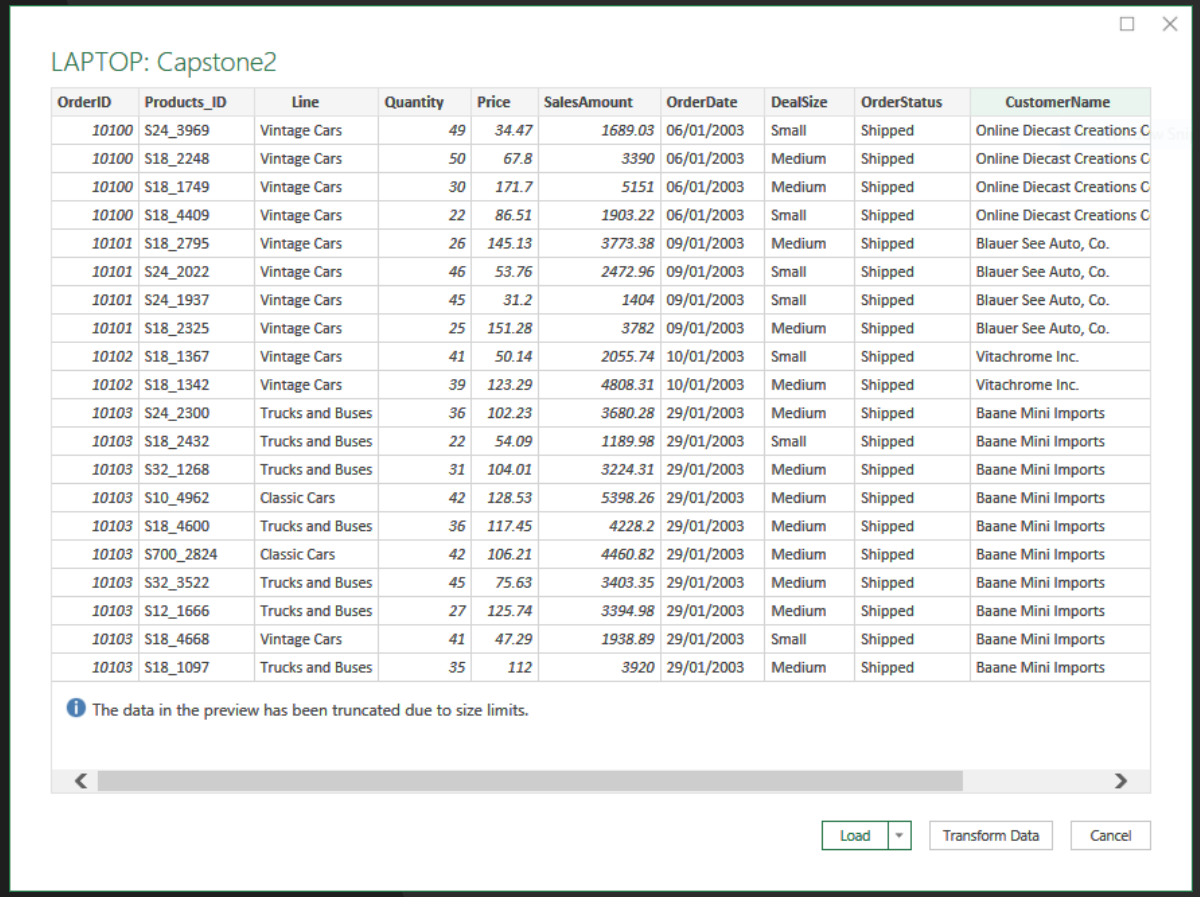
PowerQuery – Importing data from SQL server

Referencing ‘Sales.vCustomerSales’ data



PowerQuery – Data preview

Loading imported data thru PowerQuery:



OrderID	Products_ID	Line	Quantity	Price	SalesAmount	OrderDate	DealSize	OrderStatus	CustomerName
10100	S24_3969	Vintage Cars	49	34.47	1689.03	06/01/2003	Small	Shipped	Online Diecast Creations C
10100	S18_2248	Vintage Cars	50	67.8	3390	06/01/2003	Medium	Shipped	Online Diecast Creations C
10100	S18_1749	Vintage Cars	30	171.7	5151	06/01/2003	Medium	Shipped	Online Diecast Creations C
10100	S18_4409	Vintage Cars	22	86.51	1903.22	06/01/2003	Small	Shipped	Online Diecast Creations C
10101	S18_2795	Vintage Cars	26	145.13	3773.38	09/01/2003	Medium	Shipped	Blauer See Auto, Co.
10101	S24_2022	Vintage Cars	46	53.76	2472.96	09/01/2003	Small	Shipped	Blauer See Auto, Co.
10101	S24_1937	Vintage Cars	45	31.2	1404	09/01/2003	Small	Shipped	Blauer See Auto, Co.
10101	S18_2325	Vintage Cars	25	151.28	3782	09/01/2003	Medium	Shipped	Blauer See Auto, Co.
10102	S18_1367	Vintage Cars	41	50.14	2055.74	10/01/2003	Small	Shipped	Vitachrome Inc.
10102	S18_1342	Vintage Cars	39	123.29	4808.31	10/01/2003	Medium	Shipped	Vitachrome Inc.
10103	S24_2300	Trucks and Buses	36	102.23	3680.28	29/01/2003	Medium	Shipped	Baane Mini Imports
10103	S18_2432	Trucks and Buses	22	54.09	1189.98	29/01/2003	Small	Shipped	Baane Mini Imports
10103	S32_1268	Trucks and Buses	31	104.01	3224.31	29/01/2003	Medium	Shipped	Baane Mini Imports
10103	S10_4962	Classic Cars	42	128.53	5398.26	29/01/2003	Medium	Shipped	Baane Mini Imports
10103	S18_4600	Trucks and Buses	36	117.45	4228.2	29/01/2003	Medium	Shipped	Baane Mini Imports
10103	S700_2824	Classic Cars	42	106.21	4460.82	29/01/2003	Medium	Shipped	Baane Mini Imports
10103	S32_3522	Trucks and Buses	45	75.63	3403.35	29/01/2003	Medium	Shipped	Baane Mini Imports
10103	S12_1666	Trucks and Buses	27	125.74	3394.98	29/01/2003	Medium	Shipped	Baane Mini Imports
10103	S18_4668	Vintage Cars	41	47.29	1938.89	29/01/2003	Small	Shipped	Baane Mini Imports
10103	S18_1097	Trucks and Buses	35	112	3920	29/01/2003	Medium	Shipped	Baane Mini Imports

Continued in Excel Dashboard…

So, were the objectives met?

In summary

Understand the quarterly revenue growth

Outliers in Q4 growth are seasonal and are driven by thanksgiving season sale, surge in 2005 Q2 is something to be monitored if sustainable outside of the usual Q4 outliers

Understand customer orders pattern thru segmentation

Surprisingly, most companies' orders are in the amount of $37k-$47k range. Study the recency of the high-value customers; proactively engage high-value customers but order less frequent

Find out which product price ranges sell more thru clustering

Overall, products with prices ranging $57-$87 sell the most followed by even higher price range of $87-$117. Something to investigate why the cheapest range of $27-$57 sells poorly than products in the next price ranges

Distribution of sales by countries

Biggest source of revenue comes from USA while more than 50 % of revenue is already covered by 5 countries (USA, Spain, France, Australia, UK). Look into advertising in smaller revenue countries or do further research in their toy markets

Q&A