Advanced Power BI Modeling Techniques

by Martin Schoombee

28twelve CONSULTING

About Me

"I help people make sense
of their data"

My blog: martinschoombee.com

My company: 28twelve.consulting

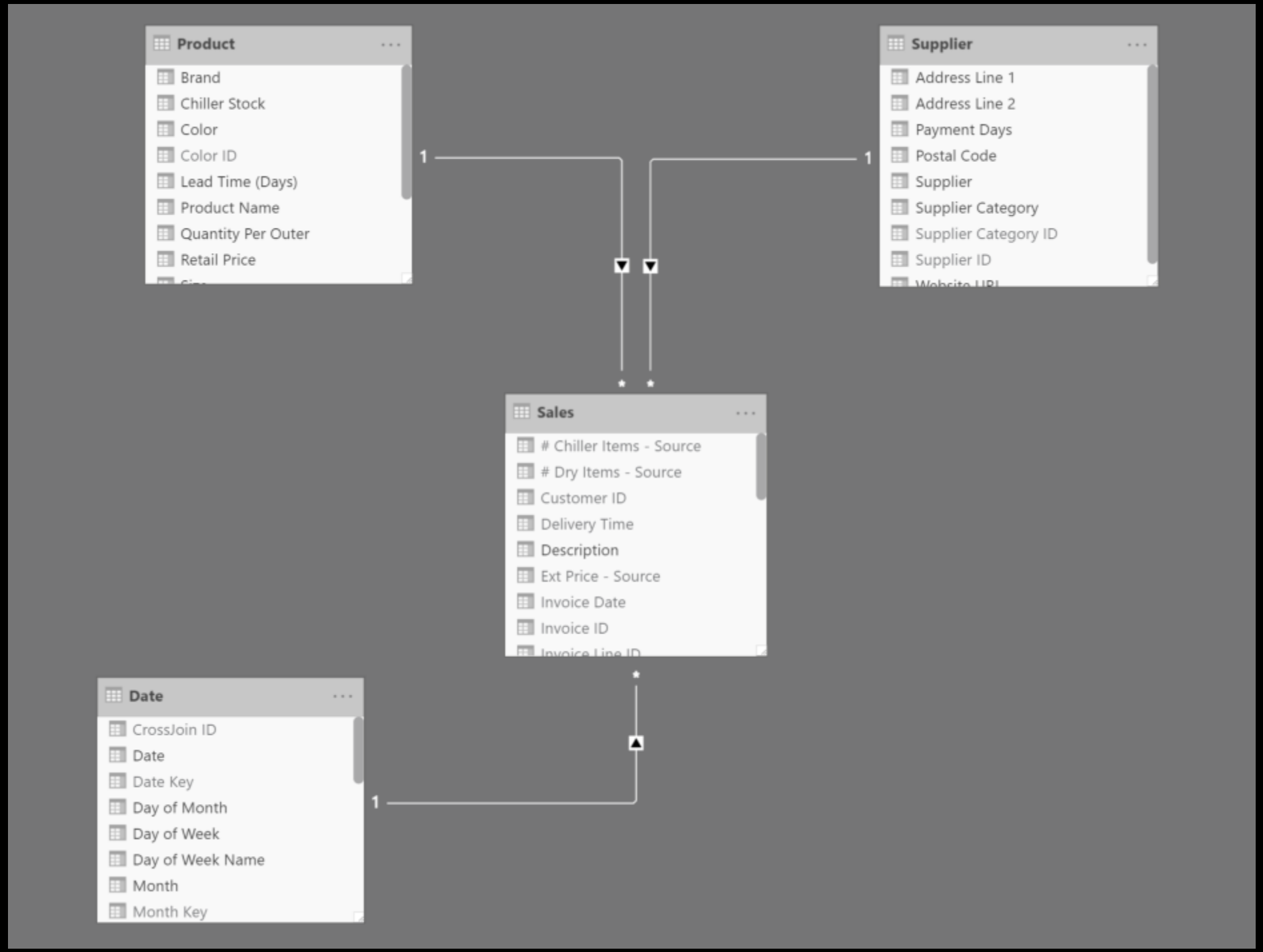
Tweet me: @MartinSchoombee

GitHub Repo: https://github.com/mschoombee/Presentations

Agenda

- Measure Tables
- Dynamic Currency Conversions
- Role-Playing Dimensions
- (Bonus Content) Dynamic Month Bands

Measure Table?


Product
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Chiller Stock
Color
Color ID
Lead Time (Days)
Product Name
Quantity Per Outer
Retail Price
Supplier
Address Line 1
Address Line 2
Payment Days
Postal Code
Supplier
Supplier Category
Supplier Category ID
Supplier ID
Sales
Chiller Items - Source
Dry Items - Source
Customer ID
Delivery Time
Description
Ext Price - Source
Invoice Date
Invoice ID
Date
CrossJoin ID
Date
Date Key
Day of Month
Day of Week
Day of Week Name
Month
Month Key
1
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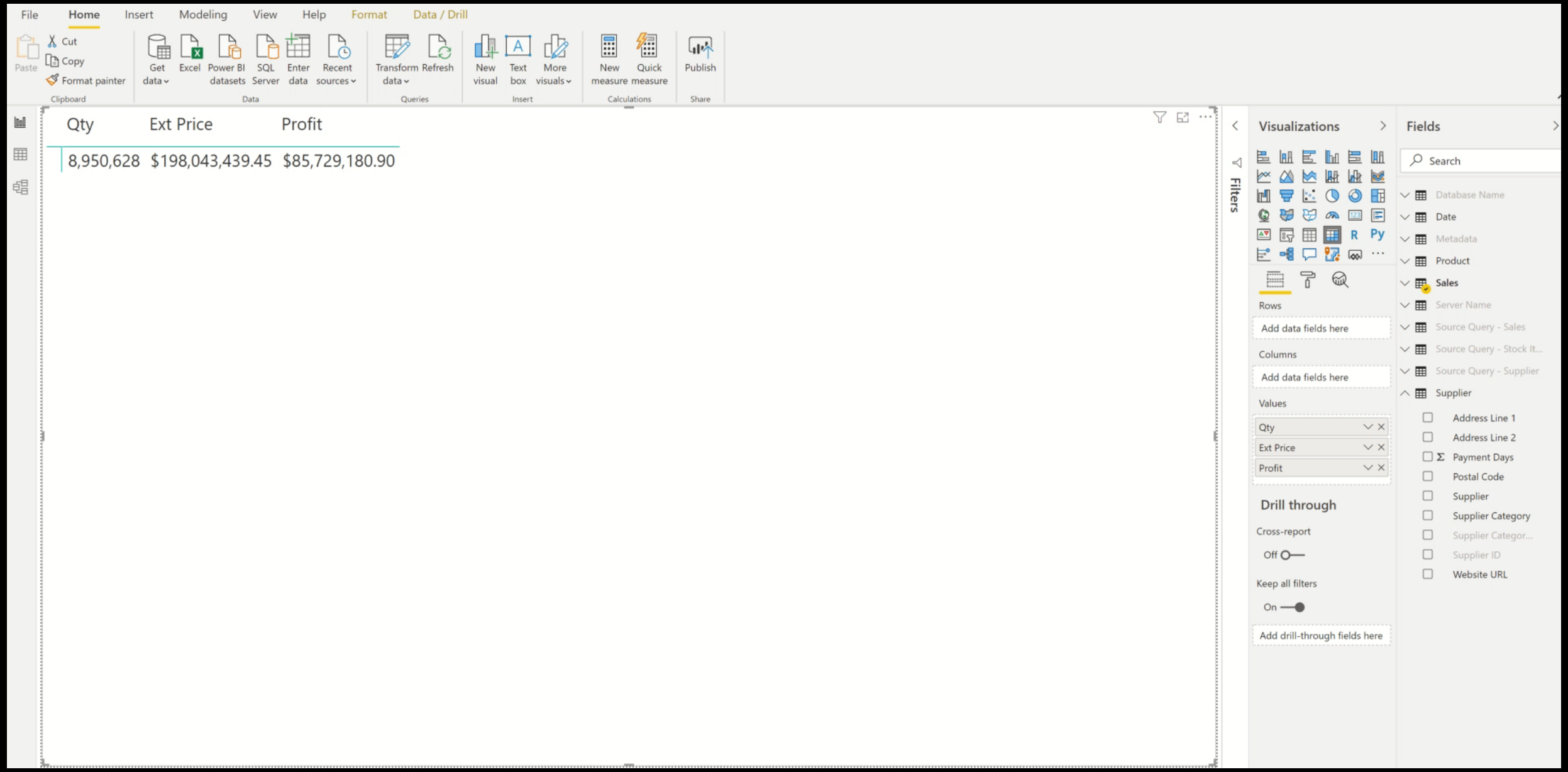
1

Supplier Category	Qty	Ext Price	Profit
Clothing Supplier	2,624,338	$53,407,430.60	$21,929,432.50
Novelty Goods Supplier	525,778	$11,849,641.64	$6,071,706.15
Packaging Supplier	5,696,347	$115,763,819.96	$51,663,616.75
Toy Supplier	104,165	$17,022,547.25	$6,064,425.50
Total	**8,950,628**	**$198,043,439.45**	**$85,729,180.90**

Measure Name	Clothing Supplier	Novelty Goods Supplier	Packaging Supplier	Toy Supplier	**Total**
Qty	2,624,338	525,778	5,696,347	104,165	**8,950,628**
Ext Price	53,407,431	11,849,642	115,763,820	17,022,547	**198,043,439**
Profit	21,929,433	6,071,706	51,663,617	6,064,426	**85,729,181**

Demo Time


File
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Insert
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Help
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Data / Drill
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Format painter
Clipboard
Get data
Excel
Power BI datasets
SQL Server
Enter data
Recent sources
Data
Transform data
Refresh
Queries
New visual
Text box
More visuals
Insert
New measure
Quick measure
Calculations
Publish
Share
Qty
Ext Price
Profit
8,950,628
$198,043,439.45
$85,729,180.90
Filters
Visualizations
Rows
Add data fields here
Columns
Add data fields here
Values
Qty
Ext Price
Profit
Drill through
Cross-report
Off
Keep all filters
On
Add drill-through fields here
Fields
Search
Database Name
Date
Metadata
Product
Sales
Server Name
Source Query - Sales
Source Query - Stock It...
Source Query - Supplier
Supplier
Address Line 1
Address Line 2
Payment Days
Postal Code
Supplier
Supplier Category
Supplier Categor...
Supplier ID
Website URL

Step 1

Create a calculated table

ROW DAX Function (Table manipulation)

Syntax | Return values | Examples | Articles

Returns a single row table with new columns specified by the DAX expressions.

Syntax

```
ROW ( <Name>, <Expression> [, <Name>, <Expression> [, … ] ] )
```

PARAMETER	ATTRIBUTES	DESCRIPTION
Name	Repeatable	Name of the new column.
Expression	Repeatable	The expression for the column.

Return values

TABLE An entire table or a table with one or more columns.

A single row table.

UNION DAX Function (Table manipulation)

Syntax | Return values | Remarks | Related

Returns the union of the two tables whose columns match.

Syntax

```
UNION ( <Table> [, <Table> [, … ] ] )
```

PARAMETER	ATTRIBUTES	DESCRIPTION
Table	Repeatable	A table that will participate in the crossjoin union.

Return values

TABLE An entire table or a table with one or more columns.

A table that contains all the rows from each of the table expressions.

```
My Measures =
UNION
(
    ROW("Measure Name", "Qty", "Sort Order", 1)
,   ROW("Measure Name", "Ext Price", "Sort Order", 2)
,   ROW("Measure Name", "Profit", "Sort Order", 3)
)
```

DATATABLE DAX Function (Table manipulation)

Syntax | Return values | Remarks | Examples | Articles

Returns a table with data defined inline.

Syntax

```
DATATABLE ( <name>, <type> [, <name>, <type> [, … ] ], <data> )
```

PARAMETER	ATTRIBUTES	DESCRIPTION
name	Repeatable	A column name to be defined.
type	Repeatable	A type name to be associated with the column.
data		The data for the table.

Return values

TABLE An entire table or a table with one or more columns.

A table declaring an inline set of values.

```
My Measures =
DATATABLE
(
        "Measure Name", STRING
,       "Sort Order", INTEGER
,       {
                {"Qty", 1}
        ,       {"Ext Price", 2}
        ,       {"Profit", 3}
        }
)
```

Table Constructor

12/09/2018 • 2 minutes to read • Contributors

Returns a table of one or more columns.

Syntax

DAX

Copy

```
{ <scalarExpr1>, <scalarExpr2>, … }
{ ( <scalarExpr1>, <scalarExpr2>, … ), ( <scalarExpr1>, <scalarExpr2>, … ), … }
```

Parameters

Term	Definition
scalarExprN	Any DAX expression that returns a scalar value.

Return value

A table of one or more columns. When there is only one column, the name of the column is Value. When there are N columns where N > 1, the names of the columns from left to right are Value1, Value2, ..., ValueN.

```
My Measures =
{
        ("Qty", 1)
    ,   ("Ext Price", 2)
    ,   ("Profit", 3)
}
```

Step 2

Define a measure

```
Value =
SWITCH
(
    FIRSTNONBLANK('My Measures'[Measure Name])
,   "Qty", [Qty]
,   "Ext Price", [Ext Price]
,   "Profit", [Profit]
,   BLANK()
)
```

Supplier Category	Qty	Ext Price	Profit
Clothing Supplier	2,624,338	$53,407,430.60	$21,929,432.50
Novelty Goods Supplier	525,778	$11,849,641.64	$6,071,706.15
Packaging Supplier	5,696,347	$115,763,819.96	$51,663,616.75
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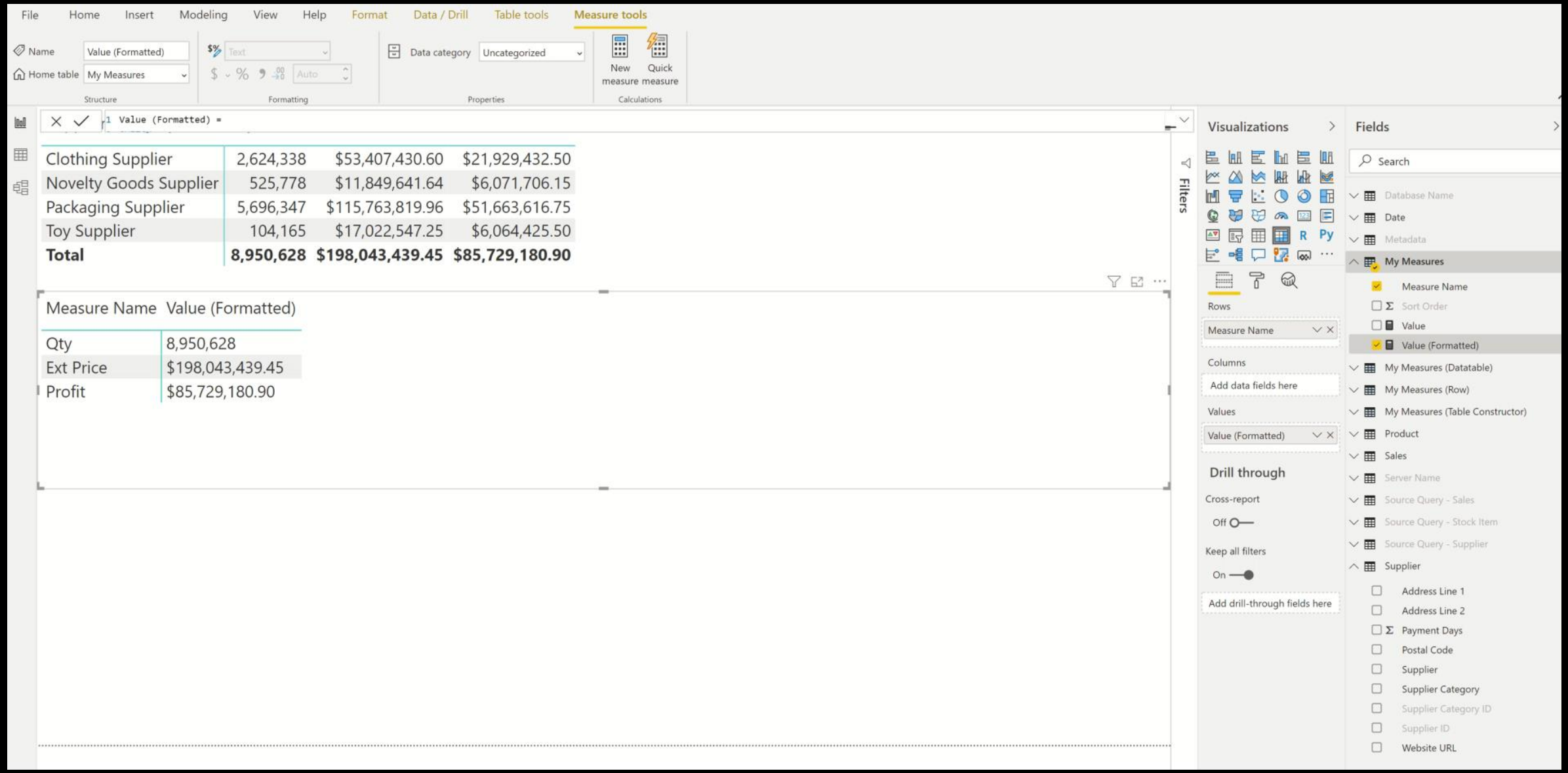
Total	**8,950,628**	**$198,043,439.45**	**$85,729,180.90**

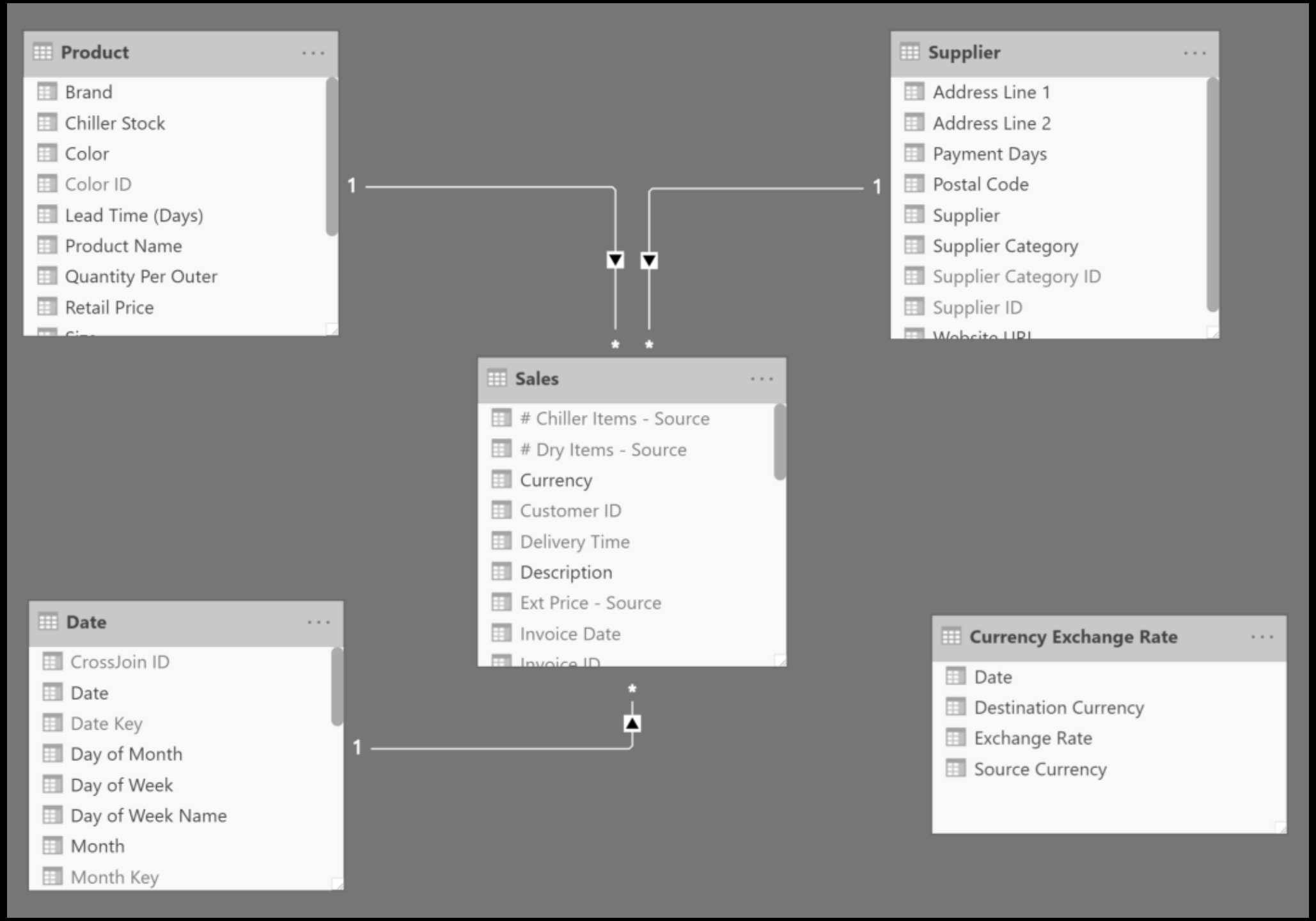
Measure Name	Clothing Supplier	Novelty Goods Supplier	Packaging Supplier	Toy Supplier	**Total**
Qty	2,624,338	525,778	5,696,347	104,165	**8,950,628**
Ext Price	53,407,431	11,849,642	115,763,820	17,022,547	**198,043,439**
Profit	21,929,433	6,071,706	51,663,617	6,064,426	**85,729,181**

```
Value (Formatted) =
SWITCH
(
    VALUES('My Measures'[Measure Name])
,   "Qty", FORMAT([Qty], "#,0")
,   "Ext Price", FORMAT([Ext Price], "Currency")
,   "Profit", FORMAT([Profit], "Currency")
,   BLANK()
)
```


File
Home
Insert
Modeling
View
Help
Format
Data / Drill
Table tools
Measure tools
Name
Value (Formatted)
Home table
My Measures
Structure
Text
Auto
Formatting
Data category
Uncategorized
Properties
New measure
Quick measure
Calculations
1 Value (Formatted) =
Clothing Supplier 2,624,338 $53,407,430.60 $21,929,432.50
Novelty Goods Supplier 525,778 $11,849,641.64 $6,071,706.15
Packaging Supplier 5,696,347 $115,763,819.96 $51,663,616.75
Toy Supplier 104,165 $17,022,547.25 $6,064,425.50
Total 8,950,628 $198,043,439.45 $85,729,180.90
Measure Name Value (Formatted)
Qty 8,950,628
Ext Price $198,043,439.45
Profit $85,729,180.90
Filters
Visualizations
Rows
Measure Name
Columns
Add data fields here
Values
Value (Formatted)
Drill through
Cross-report
Off
Keep all filters
On
Add drill-through fields here
Fields
Search
Database Name
Date
Metadata
My Measures
Measure Name
Sort Order
Value
Value (Formatted)
My Measures (Datatable)
My Measures (Row)
My Measures (Table Constructor)
Product
Sales
Server Name
Source Query - Sales
Source Query - Stock Item
Source Query - Supplier
Supplier
Address Line 1
Address Line 2
Payment Days
Postal Code
Supplier
Supplier Category
Supplier Category ID
Supplier ID
Website URL

Dynamic Currency Conversion

Photo by Sharon McCutcheon on Unsplash


Product
Brand
Chiller Stock
Color
Color ID
Lead Time (Days)
Product Name
Quantity Per Outer
Retail Price
Supplier
Address Line 1
Address Line 2
Payment Days
Postal Code
Supplier
Supplier Category
Supplier Category ID
Supplier ID
Website URL
Sales
Chiller Items - Source
Dry Items - Source
Currency
Customer ID
Delivery Time
Description
Ext Price - Source
Invoice Date
Invoice ID
Date
CrossJoin ID
Date
Date Key
Day of Month
Day of Week
Day of Week Name
Month
Month Key
Currency Exchange Rate
Date
Destination Currency
Exchange Rate
Source Currency
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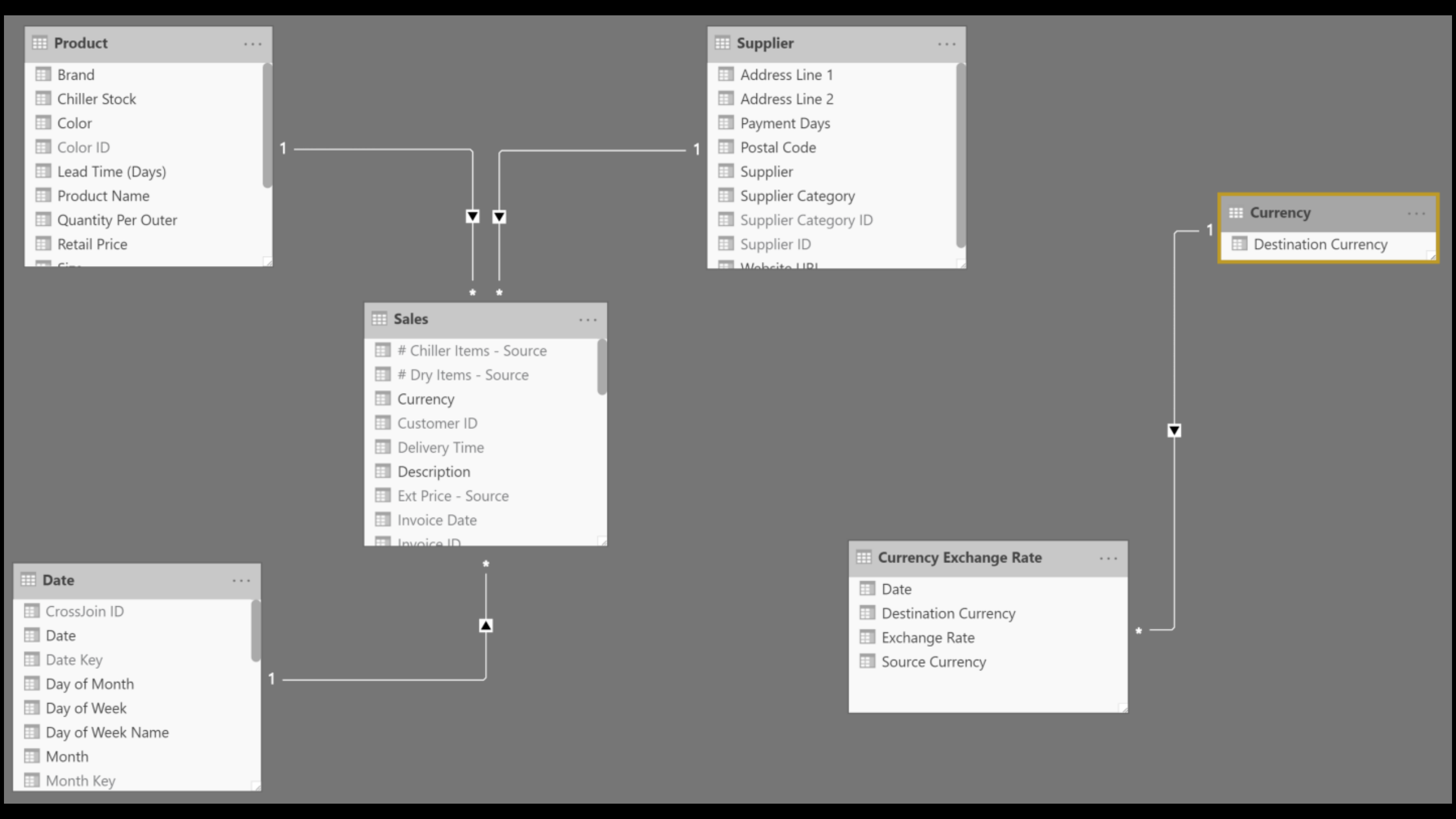
```
Ext Price (CAD) =
SUMX
(
    Sales
,   Sales[Ext Price - Source] * Sales[Exchange Rate (CAD)]
)
```

Year	Ext Price	Ext Price (CAD)	Exchange Rate (CAD)
2013	$52,563,272.64	$36,794,290.85	$0.70
2014	$57,418,916.89	$45,935,133.51	$0.80
2015	$62,090,220.81	$37,254,132.49	$0.60
2016	$25,971,029.11	$23,373,926.20	$0.90
Total	**$198,043,439.45**	**$143,357,483.05**	**$0.90**

Step 1

Create a filter dimension


Product
Brand
Chiller Stock
Color
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Lead Time (Days)
Product Name
Quantity Per Outer
Retail Price
Supplier
Address Line 1
Address Line 2
Payment Days
Postal Code
Supplier
Supplier Category
Supplier Category ID
Supplier ID
Currency
Destination Currency
Sales
Chiller Items - Source
Dry Items - Source
Currency
Customer ID
Delivery Time
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Ext Price - Source
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Currency Exchange Rate
Date
Destination Currency
Exchange Rate
Source Currency
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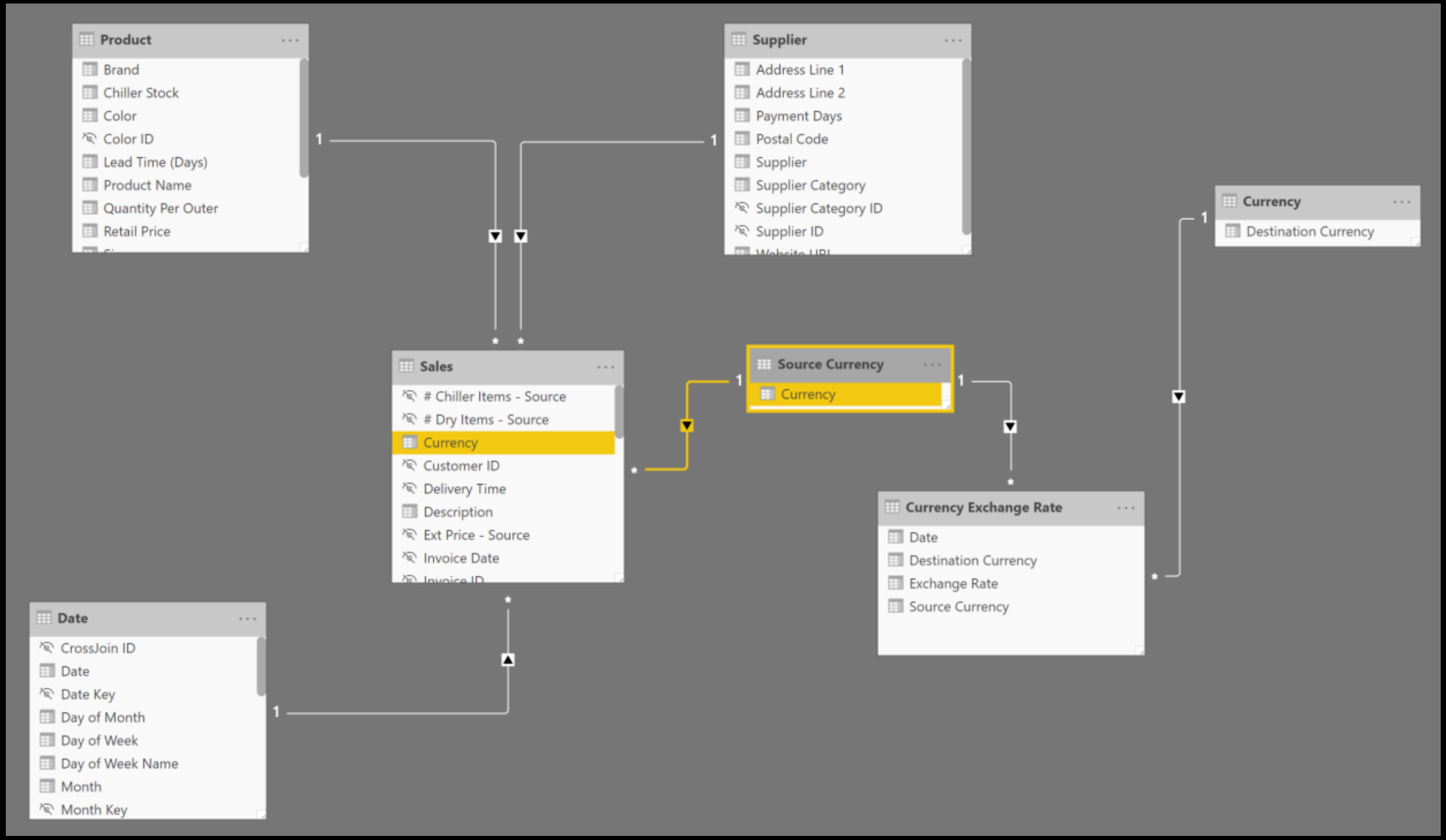
Step 2

Create a bridge table


Product
Brand
Chiller Stock
Color
Color ID
Lead Time (Days)
Product Name
Quantity Per Outer
Retail Price
Supplier
Address Line 1
Address Line 2
Payment Days
Postal Code
Supplier
Supplier Category
Supplier Category ID
Supplier ID
Currency
Destination Currency
Sales
Chiller Items - Source
Dry Items - Source
Currency
Customer ID
Delivery Time
Description
Ext Price - Source
Invoice Date
Source Currency
Currency
Currency Exchange Rate
Date
Destination Currency
Exchange Rate
Source Currency
Date
CrossJoin ID
Date
Date Key
Day of Month
Day of Week
Day of Week Name
Month
Month Key
1
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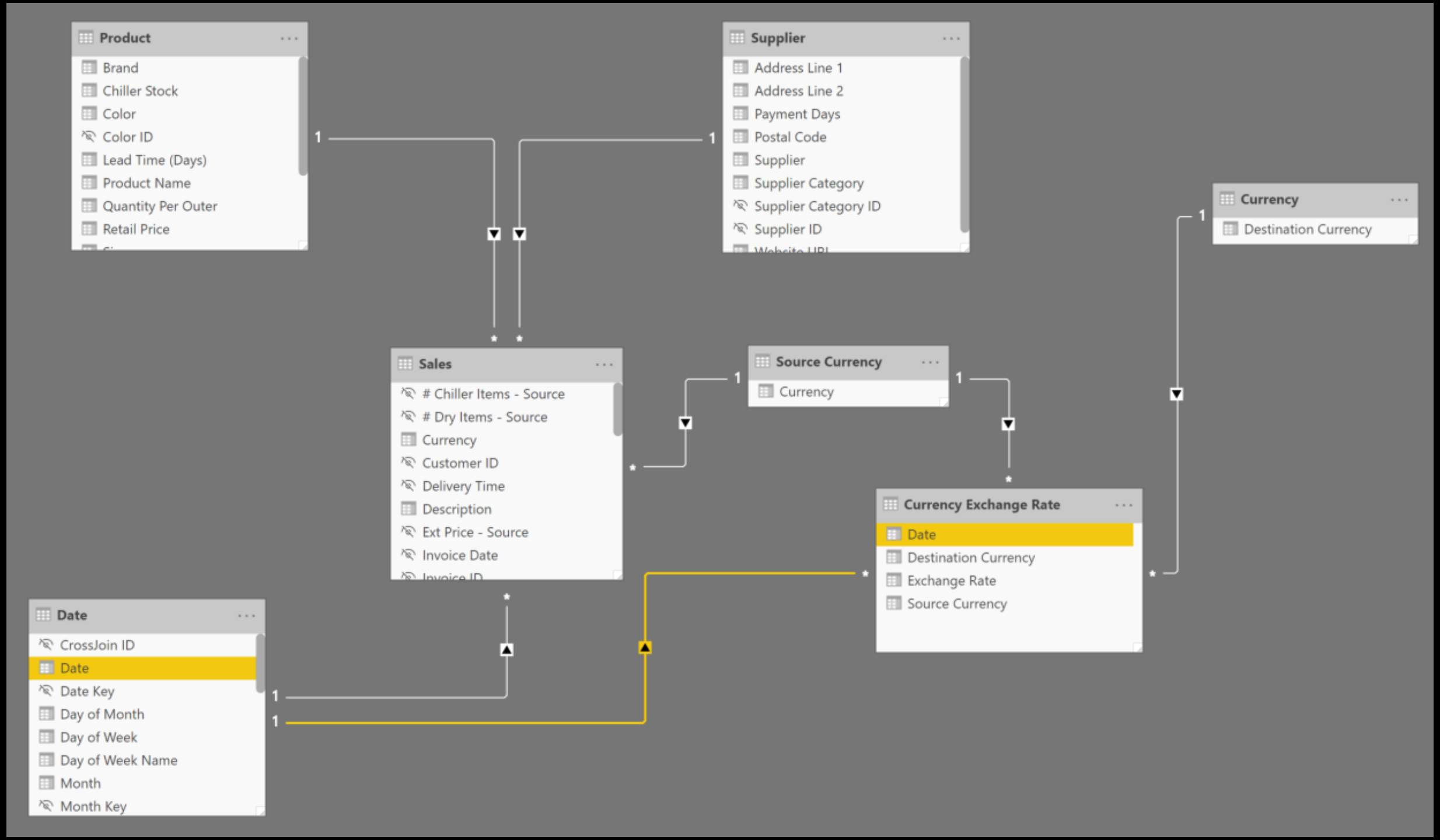
Step 3

Add a relationship to the Date entity


Product
Brand
Chiller Stock
Color
Color ID
Lead Time (Days)
Product Name
Quantity Per Outer
Retail Price
Supplier
Address Line 1
Address Line 2
Payment Days
Postal Code
Supplier
Supplier Category
Supplier Category ID
Supplier ID
Currency
Destination Currency
Sales
Chiller Items - Source
Dry Items - Source
Currency
Customer ID
Delivery Time
Description
Ext Price - Source
Invoice Date
Source Currency
Currency
Currency Exchange Rate
Date
Destination Currency
Exchange Rate
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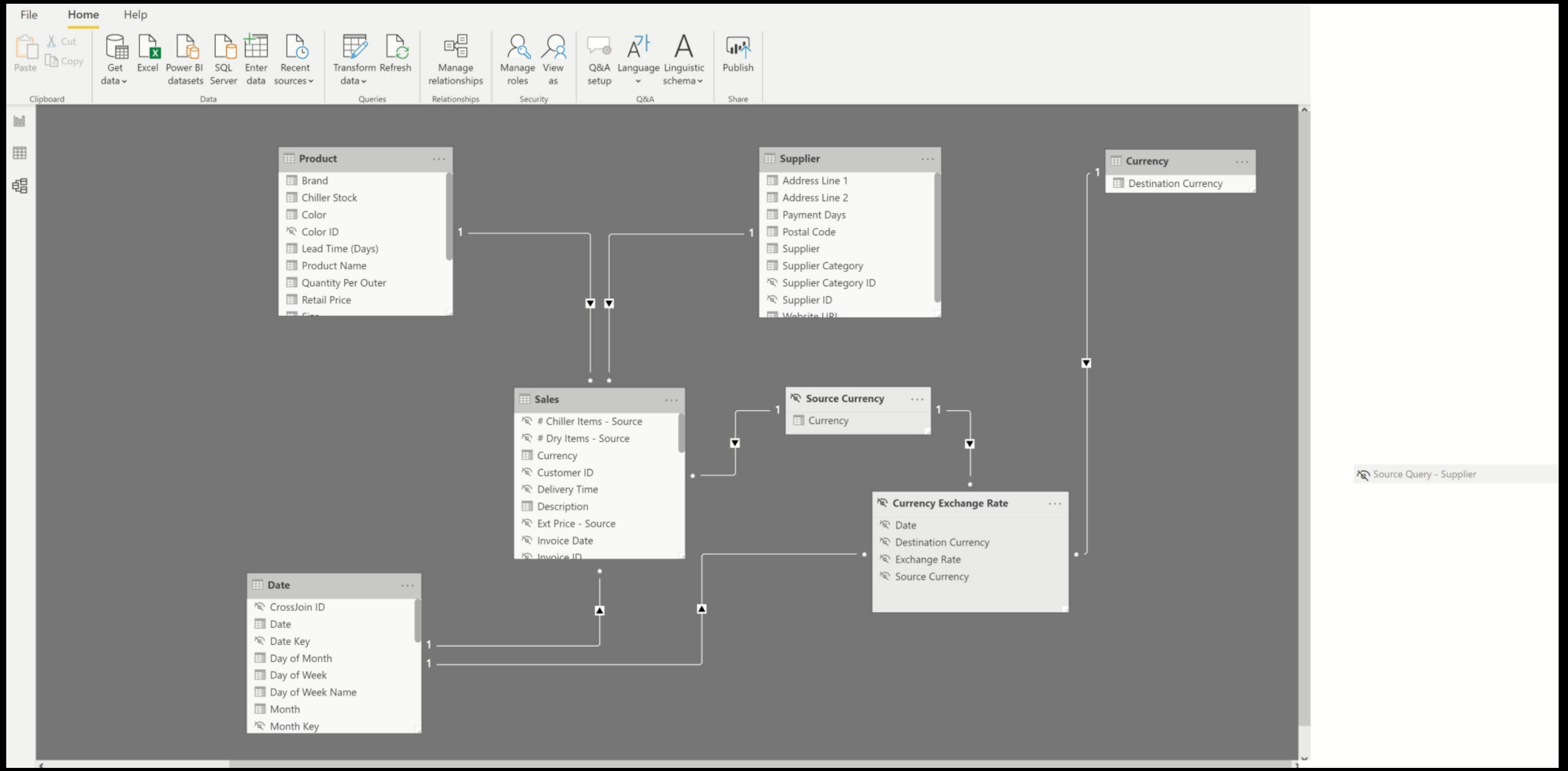
Step 4

Create the measures

```
Exchange Rate = MAX('Currency Exchange Rate'[Exchange Rate])
```

```
New Ext Price =
IF
(
    HASONEVALUE('Currency'[Destination Currency])
,   SUMX
    (
        Sales
    ,   [Ext Price] * [Exchange Rate]
    )
,   CALCULATE
    (
        SUMX
        (
            Sales
        ,   [Ext Price] * [Exchange Rate]
        )
    ,   'Currency'[Destination Currency] = "USD"
    )
)
```

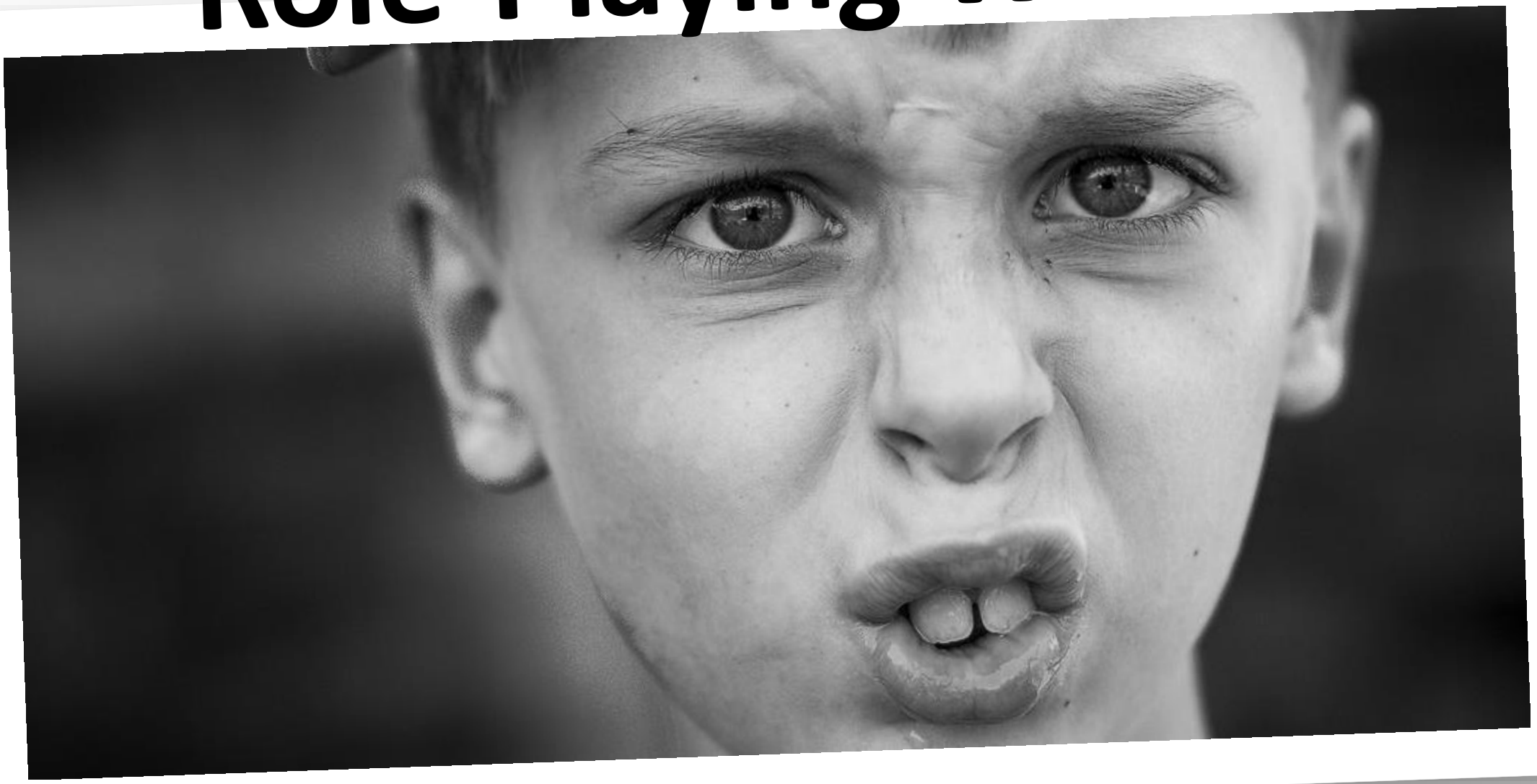
Demo Time

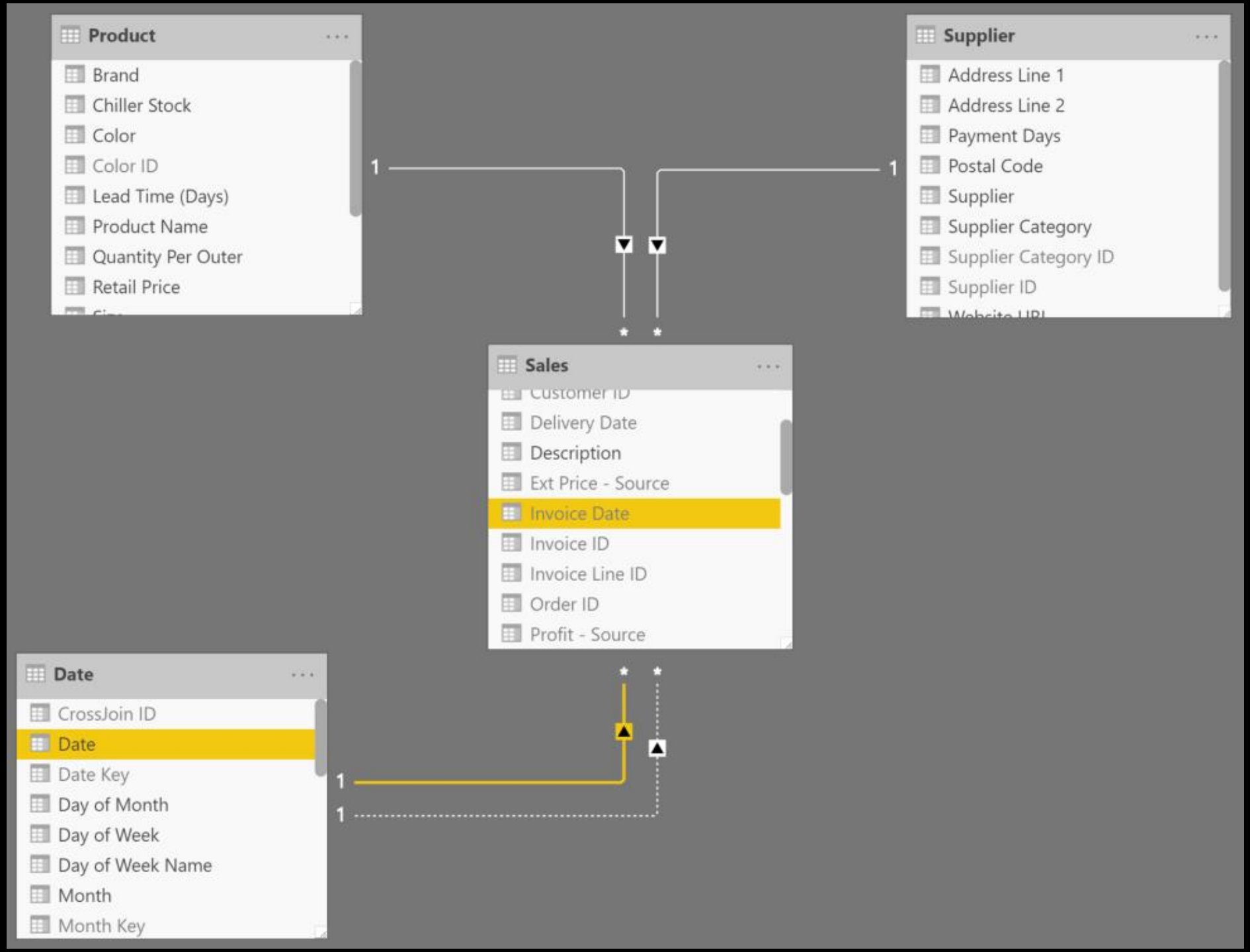

File
Home
Help
Paste
Cut
Copy
Clipboard
Get data
Excel
Power BI datasets
SQL Server
Enter data
Recent sources
Data
Transform data
Refresh
Queries
Manage relationships
Relationships
Manage roles
View as
Security
Q&A setup
Language
Linguistic schema
Q&A
Publish
Share
Product
Brand
Chiller Stock
Color
Color ID
Lead Time (Days)
Product Name
Quantity Per Outer
Retail Price
Supplier
Address Line 1
Address Line 2
Payment Days
Postal Code
Supplier
Supplier Category
Supplier Category ID
Supplier ID
Currency
Destination Currency
Sales
Chiller Items - Source
Dry Items - Source
Currency
Customer ID
Delivery Time
Description
Ext Price - Source
Invoice Date
Source Currency
Currency
Currency Exchange Rate
Date
Destination Currency
Exchange Rate
Source Currency
Date
CrossJoin ID
Date
Date Key
Day of Month
Day of Week
Day of Week Name
Month
Month Key
1
*
Source Query - Supplier

Role-Playing Dimensions

Photo by Manasvita S on Unsplash

Role-Playing What?




Product
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Chiller Stock
Color
Color ID
Lead Time (Days)
Product Name
Quantity Per Outer
Retail Price
Supplier
Address Line 1
Address Line 2
Payment Days
Postal Code
Supplier
Supplier Category
Supplier Category ID
Supplier ID
Sales
Delivery Date
Description
Ext Price - Source
Invoice Date
Invoice ID
Invoice Line ID
Order ID
Profit - Source
Date
CrossJoin ID
Date
Date Key
Day of Month
Day of Week
Day of Week Name
Month
Month Key
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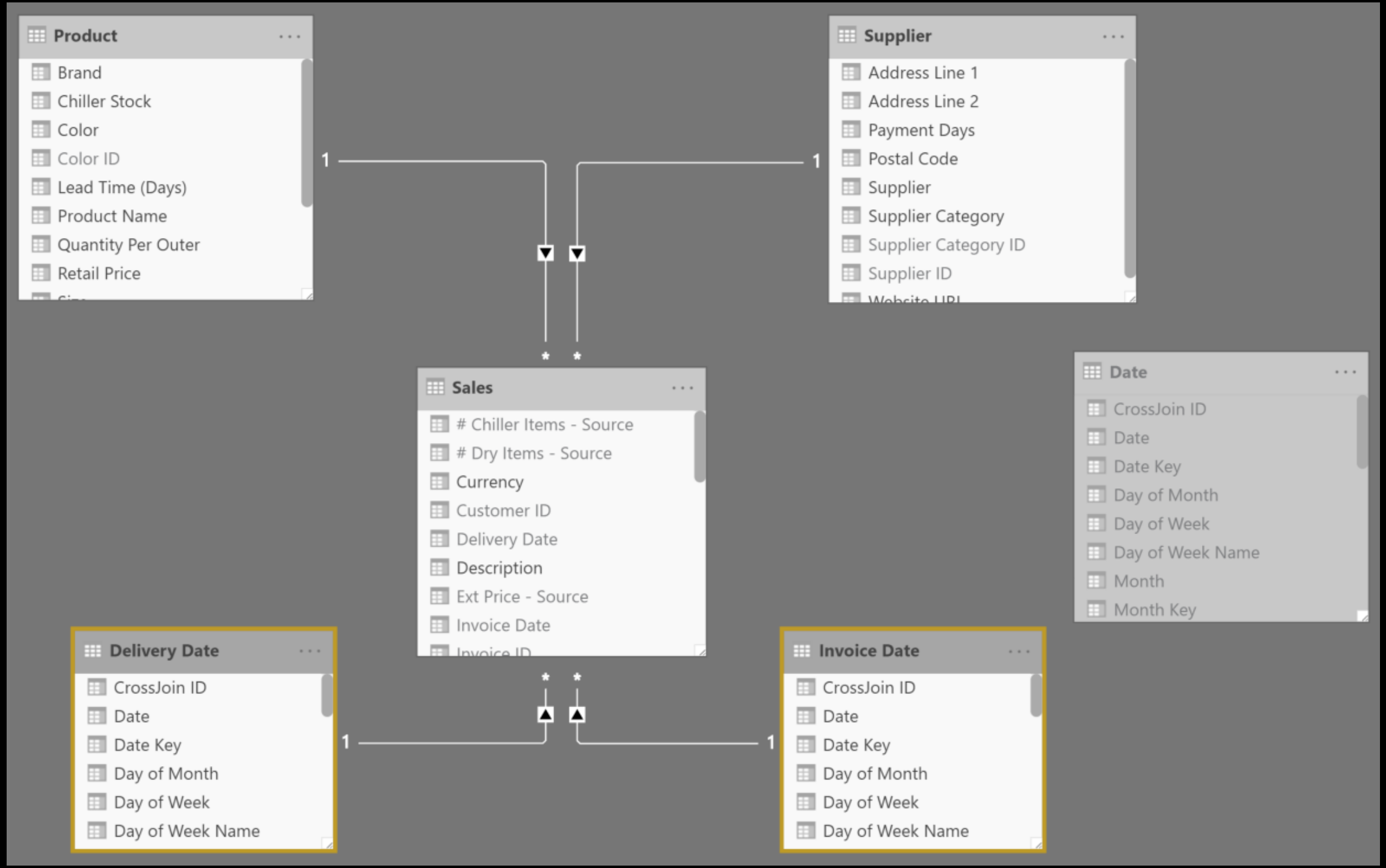
Product
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Chiller Stock
Color
Color ID
Lead Time (Days)
Product Name
Quantity Per Outer
Retail Price
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Address Line 1
Address Line 2
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Supplier Category
Supplier Category ID
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Sales
Chiller Items - Source
Dry Items - Source
Currency
Customer ID
Delivery Date
Description
Ext Price - Source
Invoice Date
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CrossJoin ID
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Delivery Date
CrossJoin ID
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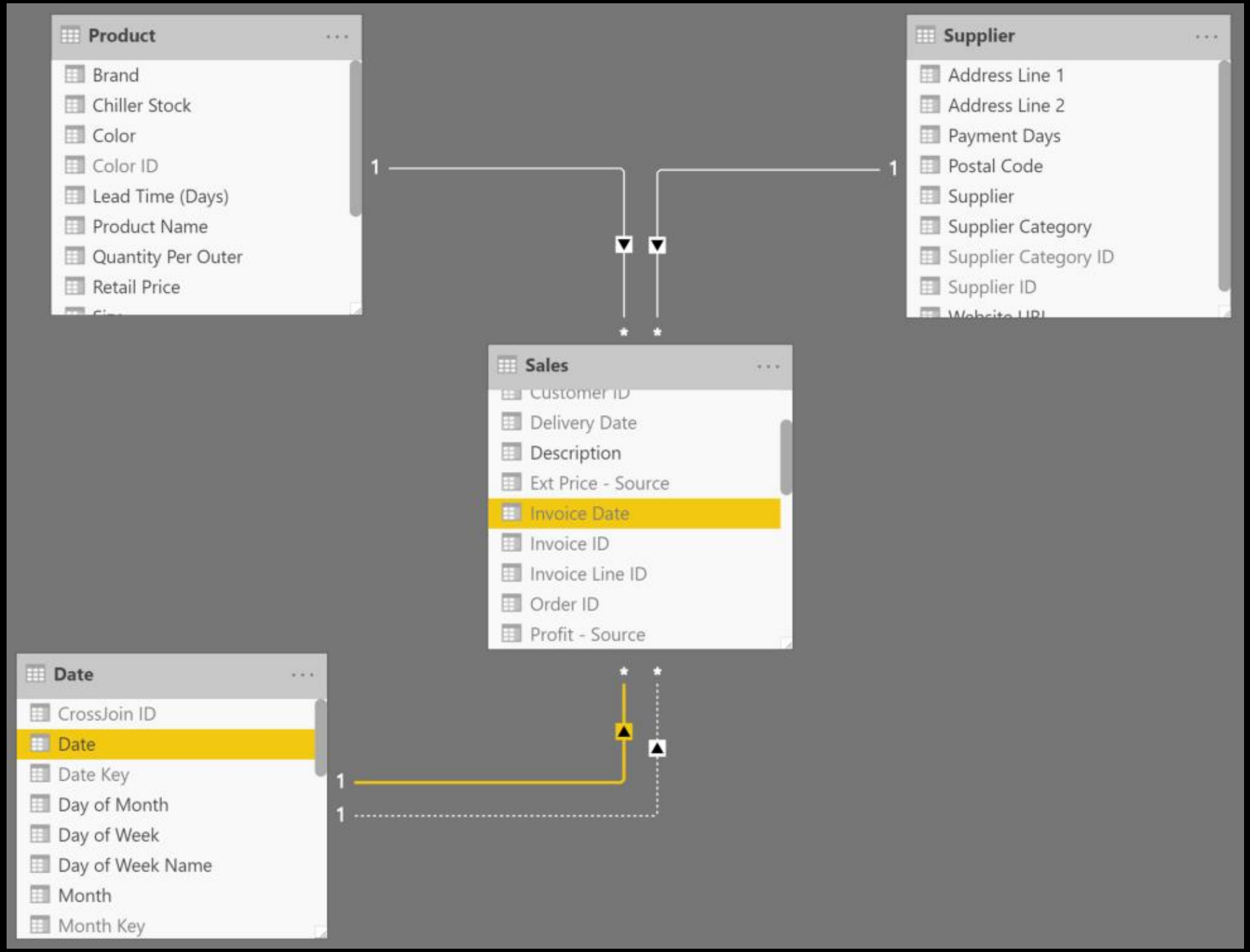
Invoice Date
CrossJoin ID
Date
Date Key
Day of Month
Day of Week
Day of Week Name


Product
Brand
Chiller Stock
Color
Color ID
Lead Time (Days)
Product Name
Quantity Per Outer
Retail Price
Supplier
Address Line 1
Address Line 2
Payment Days
Postal Code
Supplier
Supplier Category
Supplier Category ID
Supplier ID
Sales
Delivery Date
Description
Ext Price - Source
Invoice Date
Invoice ID
Invoice Line ID
Order ID
Profit - Source
Date
CrossJoin ID
Date
Date Key
Day of Month
Day of Week
Day of Week Name
Month
Month Key
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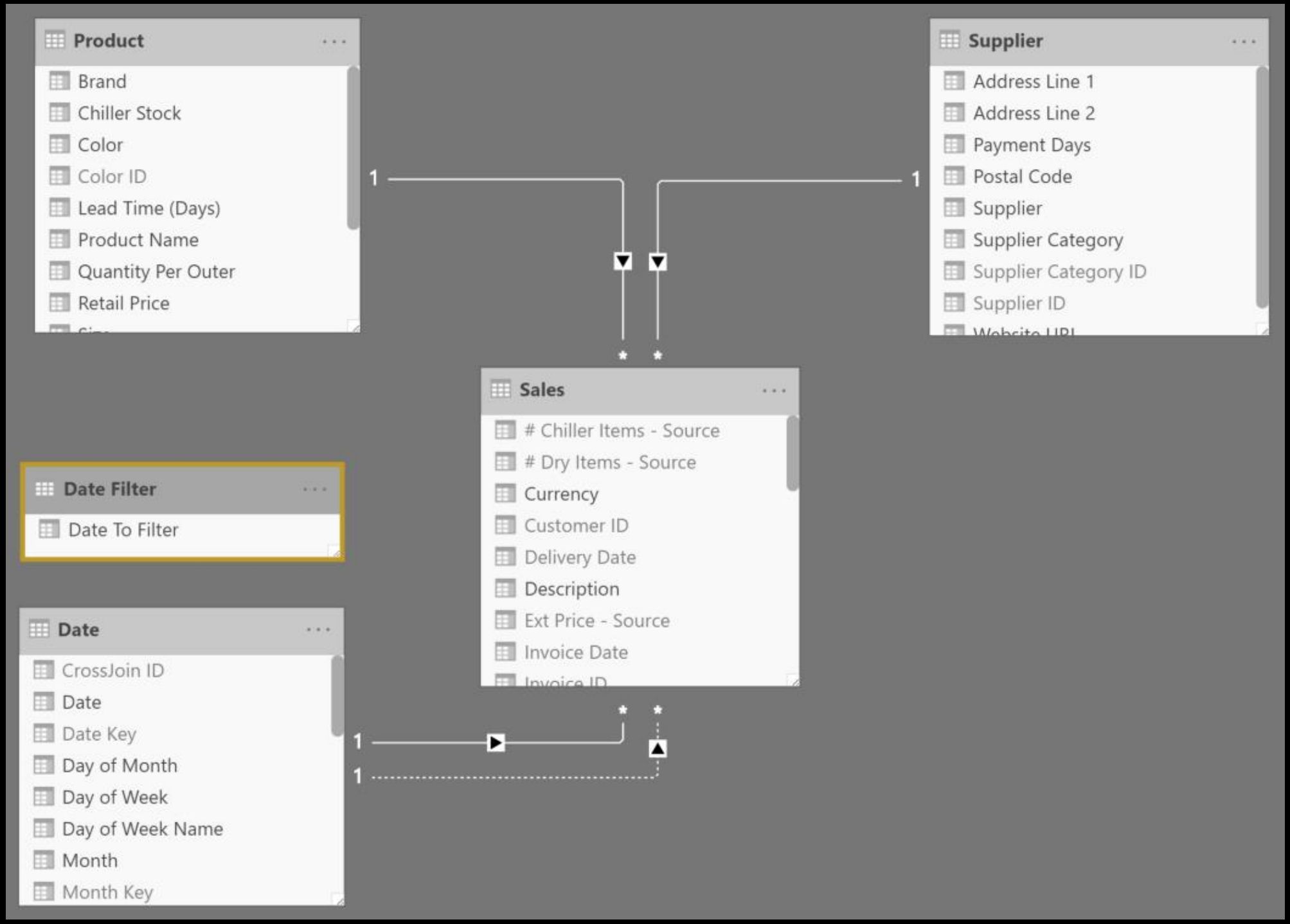
```
Ext Price by Delivery Date =
CALCULATE
(
    [Ext Price]
,   USERELATIONSHIP(Sales[Delivery Date], 'Date'[Date])
)
```

```
Ext Price by Invoice Date =
CALCULATE
(
    [Ext Price]
,   USERELATIONSHIP(Sales[Invoice Date], 'Date'[Date])
)
```

Step 1

Create a filter dimension


Product
Brand
Chiller Stock
Color
Color ID
Lead Time (Days)
Product Name
Quantity Per Outer
Retail Price
Supplier
Address Line 1
Address Line 2
Payment Days
Postal Code
Supplier
Supplier Category
Supplier Category ID
Supplier ID
1
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* *
Sales
Chiller Items - Source
Dry Items - Source
Currency
Customer ID
Delivery Date
Description
Ext Price - Source
Invoice Date
Date Filter
Date To Filter
Date
CrossJoin ID
Date
Date Key
Day of Month
Day of Week
Day of Week Name
Month
Month Key
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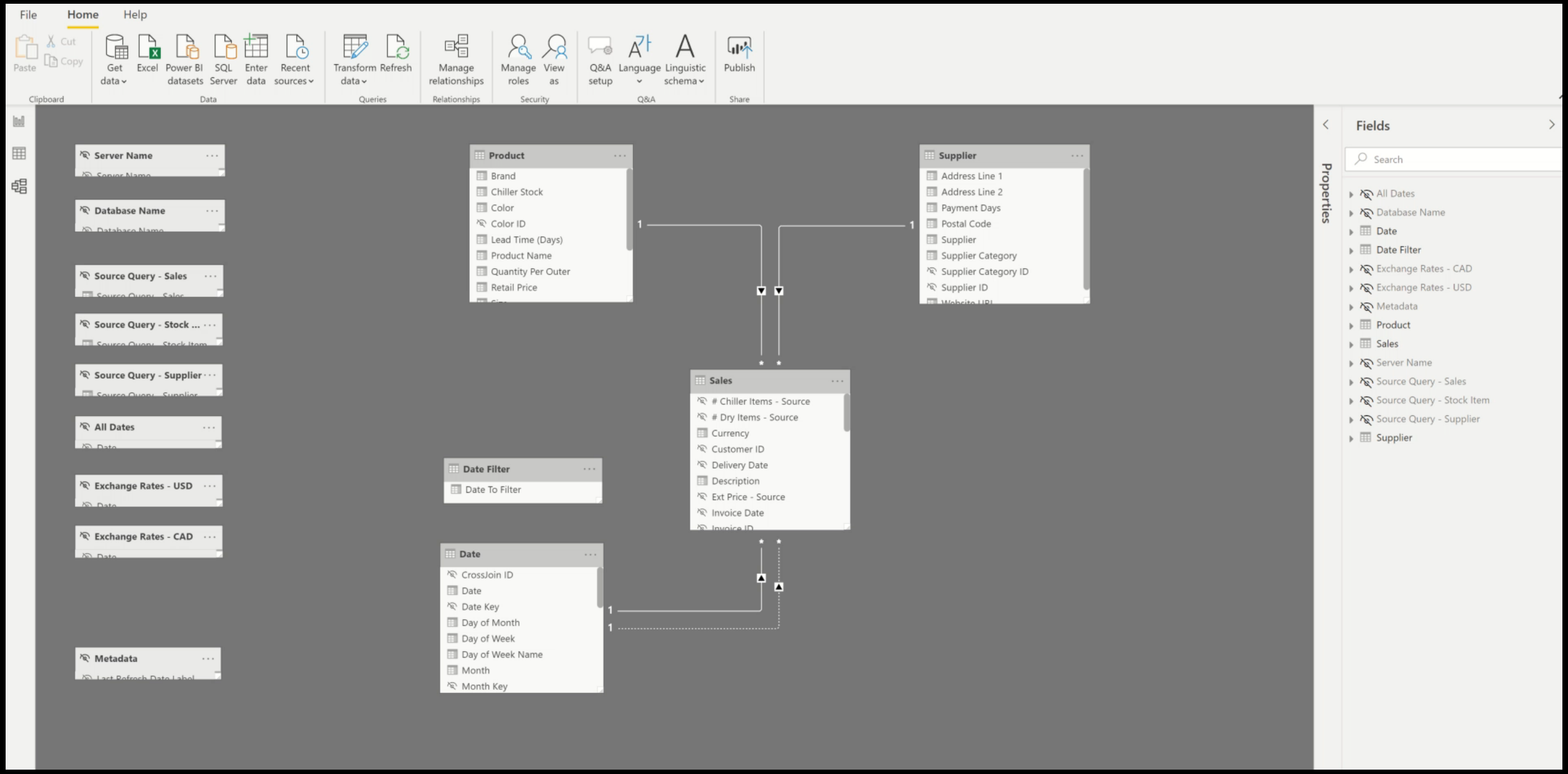
Step 2

Create a measure that’s “date aware”

```
Ext Price - Date Aware =
VAR
    SelectedDate = SELECTEDVALUE('Date Filter'[Date To Filter], "Invoice Date")
VAR
    UseInvoiceDate =    CALCULATE
                        (
                            [Ext Price]
                        ,   USERELATIONSHIP(Sales[Invoice Date], 'Date'[Date])
                        )
VAR
    UseDeliveryDate =   CALCULATE
                        (
                            [Ext Price]
                        ,   USERELATIONSHIP(Sales[Delivery Date], 'Date'[Date])
                        )
RETURN
    SWITCH
    (
        SelectedDate
    ,   "Invoice Date"
    ,   UseInvoiceDate
    ,   "Delivery Date"
    ,   UseDeliveryDate
    ,   UseInvoiceDate
    )
```

Demo Time


File
Home
Help
Paste
Cut
Copy
Clipboard
Get data
Excel
Power BI datasets
SQL Server
Enter data
Recent sources
Data
Transform data
Refresh
Queries
Manage relationships
Relationships
Manage roles
View as
Security
Q&A setup
Language
Linguistic schema
Q&A
Publish
Share
Server Name
Database Name
Source Query - Sales
Source Query - Stock ...
Source Query - Supplier
All Dates
Exchange Rates - USD
Exchange Rates - CAD
Metadata
Product
Brand
Chiller Stock
Color
Color ID
Lead Time (Days)
Product Name
Quantity Per Outer
Retail Price
Supplier
Address Line 1
Address Line 2
Payment Days
Postal Code
Supplier
Supplier Category
Supplier Category ID
Supplier ID
Sales
Chiller Items - Source
Dry Items - Source
Currency
Customer ID
Delivery Date
Description
Ext Price - Source
Invoice Date
Date Filter
Date To Filter
Date
CrossJoin ID
Date
Date Key
Day of Month
Day of Week
Day of Week Name
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Month Key
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Properties
Fields
Search
All Dates
Database Name
Date
Date Filter
Exchange Rates - CAD
Exchange Rates - USD
Metadata
Product
Sales
Server Name
Source Query - Sales
Source Query - Stock Item
Source Query - Supplier
Supplier

Dynamic Month Bands

Photo by Frankie Lopez on Unsplash

Current vs. Historic Data : Jan 2020 - Apr 2020

Partnering for Care Since

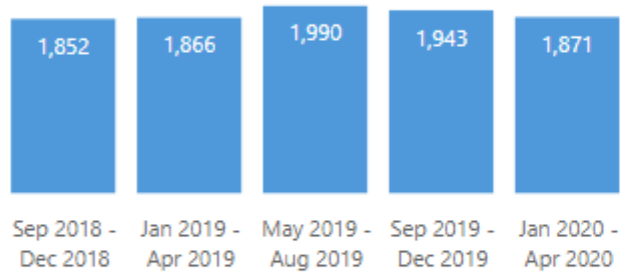
Total Activity Locations : 1,871

Work Site	1,271
Chaplain Home/Office	559
Other Location (Specify in Setting Notes)	17
Hospital	10
Funeral Home	7
Employee Home	6
Jail	1

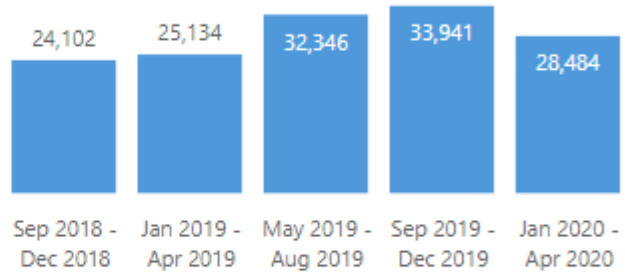
Total Care Activities : 28,484

Chaplain Engagement	10,302
Confidential Discussions	9,289
Distributed Resources	4,251
Communications	3,865
Referrals	413
Employee Care Program Orientation	292
Crisis Event	30
Job Related Issues	21
Inspirational Activity	9
Funeral	7
Special Activity	5

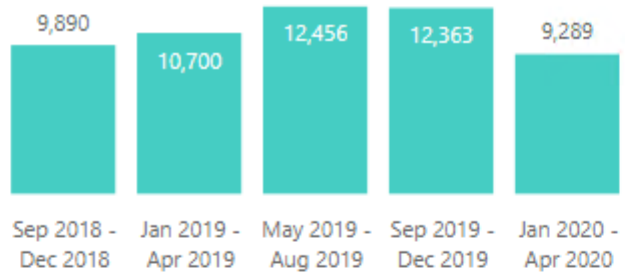
Activity Locations



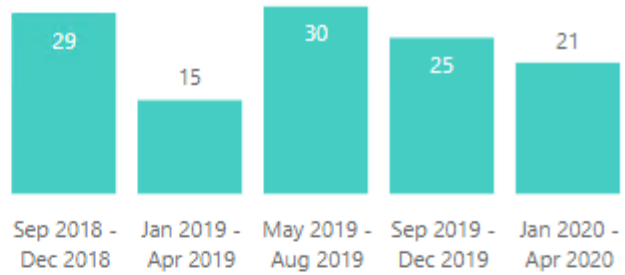
Total Care Activities



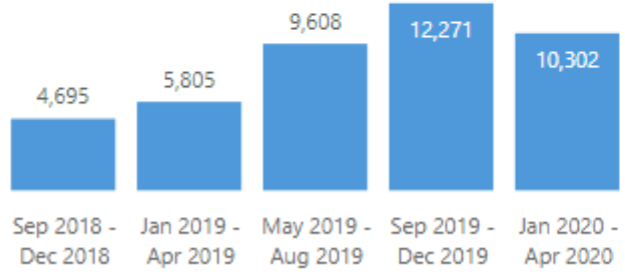
Total CDs



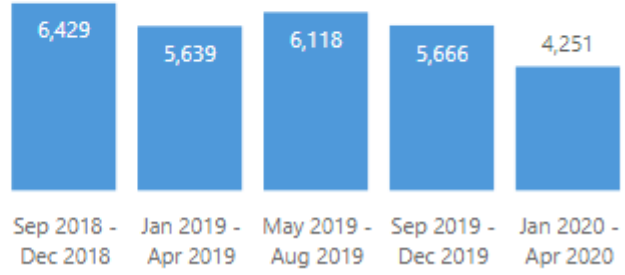
Job Related Issues



Chaplain Engagement



Distributed Resources



Reporting Month

- (●) Apr 2020
- ( ) Mar 2020
- ( ) Feb 2020
- ( ) Jan 2020
- ( ) Dec 2019
- ( ) Nov 2019
- ( ) Oct 2019
- ( ) Sep 2019
- ( ) Aug 2019
- ( ) Jul 2019
- ( ) Jun 2019
- ( ) May 2019

Band Size (Months)

- ( ) 1
- ( ) 2
- ( ) 3
- (●) 4
- ( ) 5
- ( ) 6
- ( ) 7
- ( ) 8
- ( ) 9
- ( ) 10
- ( ) 11
- ( ) 12

Step 1

Create a table for the band (range) size

	Band Size (Months)	Add Column
1	1	
2	2	
3	3	
4	4	
5	5	
6	6	
7	7	
8	8	
9	9	
10	10	
11	11	
12	12	

Step 2

Create a Cartesian product table

	Reporting Month	RelativeMonthOffset - Reporting Month	Month	RelativeMonthOffset	Band Size (Months)	Month Band	MonthBandKey	MonthBandOffset	Add Column
1	Apr 2020	-1	Dec 2019	-5	1	Dec 2019	201912201912	-5	
2	Apr 2020	-1	Jan 2020	-4	1	Jan 2020	202001202001	-4	
3	Apr 2020	-1	Feb 2020	-3	1	Feb 2020	202002202002	-3	
4	Apr 2020	-1	Mar 2020	-2	1	Mar 2020	202003202003	-2	
5	Apr 2020	-1	Apr 2020	-1	1	Apr 2020	202004202004	-1	

	Reporting Month	RelativeMonthOffset - Reporting Month	Month	RelativeMonthOffset	Band Size (Months)	Month Band	MonthBandKey	MonthBandOffset	Add Column
1	Apr 2020	-1	Jul 2019	-10	2	Jul 2019 - Aug 2019	201907201908	-5	
2	Apr 2020	-1	Aug 2019	-9	2	Jul 2019 - Aug 2019	201907201908	-5	
3	Apr 2020	-1	Sep 2019	-8	2	Sep 2019 - Oct 2019	201909201910	-4	
4	Apr 2020	-1	Oct 2019	-7	2	Sep 2019 - Oct 2019	201909201910	-4	
5	Apr 2020	-1	Nov 2019	-6	2	Nov 2019 - Dec 2019	201911201912	-3	
6	Apr 2020	-1	Dec 2019	-5	2	Nov 2019 - Dec 2019	201911201912	-3	
7	Apr 2020	-1	Jan 2020	-4	2	Jan 2020 - Feb 2020	202001202002	-2	
8	Apr 2020	-1	Feb 2020	-3	2	Jan 2020 - Feb 2020	202001202002	-2	
9	Apr 2020	-1	Mar 2020	-2	2	Mar 2020 - Apr 2020	202003202004	-1	
10	Apr 2020	-1	Apr 2020	-1	2	Mar 2020 - Apr 2020	202003202004	-1	

```
VAR
    MaxReportingMonths = 12
VAR
    BandsToReturn = 5
VAR
    ReportingMonths =
        FILTER
        (
            ALL('Date'[Month], 'Date'[RelativeMonthOffset])
            'Date'[RelativeMonthOffset] < 0 && 'Date'[RelativeMonthOffset] >= (MaxReportingMonths * -1)
        )

RETURN
    ReportingMonths
```

Month	RelativeMonthOffset
Apr 2020	-1
Mar 2020	-2
Feb 2020	-3
Jan 2020	-4
Dec 2019	-5
Nov 2019	-6
Oct 2019	-7
Sep 2019	-8
Aug 2019	-9
Jul 2019	-10
Jun 2019	-11
May 2019	-12

```
VAR
    ReportingBandSize =
       ALL('Reporting Band Selection')
VAR
    ReportingMonthAndBandSize =
        GENERATE
        (
            ReportingMonths
          , ReportingBandSize
        )

RETURN
    ReportingMonthAndBandSize
```

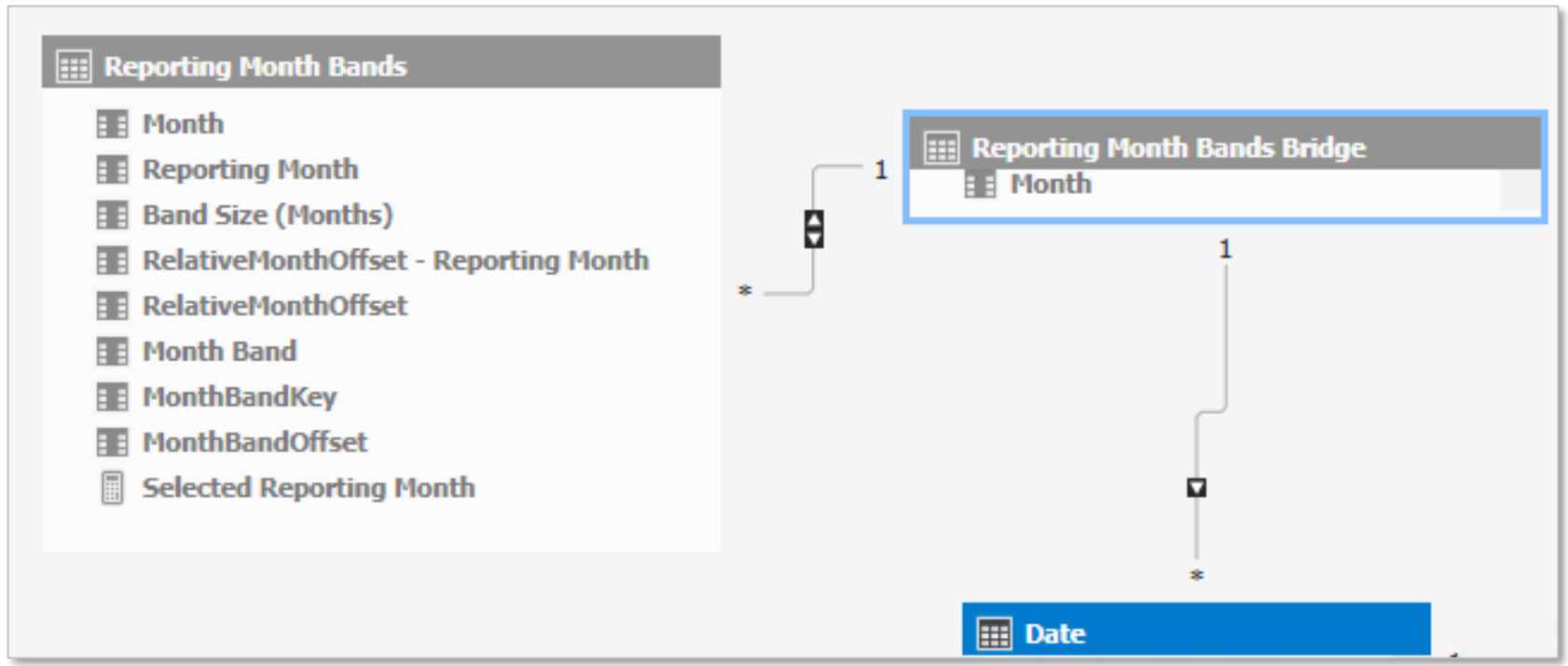
Month	RelativeMonthOffset	Band Size (Months)
May 2019	-12	1
Jun 2019	-11	1
Jul 2019	-10	1
Aug 2019	-9	1
Sep 2019	-8	1
Oct 2019	-7	1
Nov 2019	-6	1
Dec 2019	-5	1
Jan 2020	-4	1
Feb 2020	-3	1
Mar 2020	-2	1
Apr 2020	-1	1
May 2019	-12	2
Jun 2019	-11	2
Jul 2019	-10	2
Aug 2019	-9	2
Sep 2019	-8	2

```
VAR
    CalculatedReportingMonths =
        GENERATE
        (
            SELECTCOLUMNS
            (
                ReportingMonthAndBandSize
            ,   "Reporting Month"
            ,   [Month]
            ,   "Band Size (Months)"
            ,   [Band Size (Months)]
            ,   "RelativeMonthOffset - Reporting Month"
            ,   [RelativeMonthOffset]
            )
        ,   FILTER
            (
                ALL('Date'[Month], 'Date'[RelativeMonthOffset])
            ,   'Date'[RelativeMonthOffset] <= ([RelativeMonthOffset - Reporting Month])
                && 'Date'[RelativeMonthOffset] > (([Band Size (Months)] * BandsToReturn * -1) + [RelativeMonthOffset - Reporting Month])
            )
        )

RETURN
    CalculatedReportingMonths
```

Reporting Month	Band Size (Months)	RelativeMonthOffset - Reporting Month	Month	RelativeMonthOffset
Apr 2020	1	-1	Apr 2020	-1
Apr 2020	1	-1	Mar 2020	-2
Apr 2020	1	-1	Feb 2020	-3
Apr 2020	1	-1	Jan 2020	-4
Apr 2020	1	-1	Dec 2019	-5
Apr 2020	2	-1	Apr 2020	-1
Apr 2020	2	-1	Mar 2020	-2
Apr 2020	2	-1	Feb 2020	-3
Apr 2020	2	-1	Jan 2020	-4
Apr 2020	2	-1	Dec 2019	-5
Apr 2020	2	-1	Nov 2019	-6
Apr 2020	2	-1	Oct 2019	-7
Apr 2020	2	-1	Sep 2019	-8
Apr 2020	2	-1	Aug 2019	-9
Apr 2020	2	-1	Jul 2019	-10

Demo Time


Reporting Month Bands
Month
Reporting Month
Band Size (Months)
RelativeMonthOffset - Reporting Month
RelativeMonthOffset
Month Band
MonthBandKey
MonthBandOffset
Selected Reporting Month
1
*
Reporting Month Bands Bridge
Month
1
*
Date

About Me

"I help people make sense
of their data"

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Tweet me: @MartinSchoombee

GitHub Repo: https://github.com/mschoombee/Presentations