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PandaDAX

Main

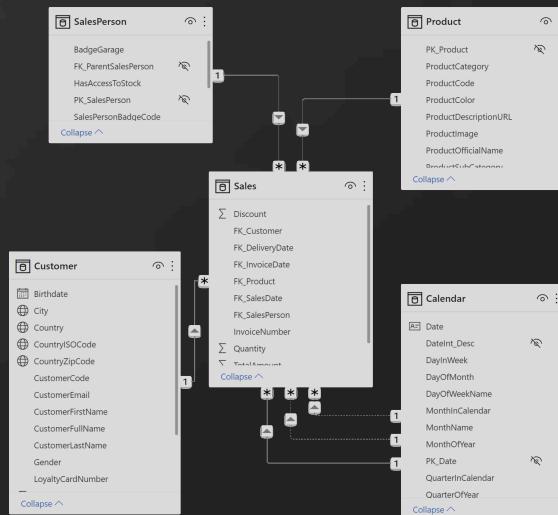
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- Aggregation
- Date and Time
- Filter
- Information
- Logical
- Time Intelligence
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- Statistical
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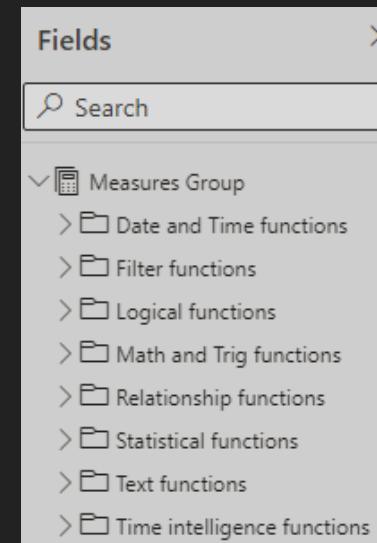
Abdullohd Saidbekov

In this Power BI file you will be able to [practice DAX](#), debug your own expressions on a pretty [simple data model](#).
This model can be used for [presentation](#) or explanation.

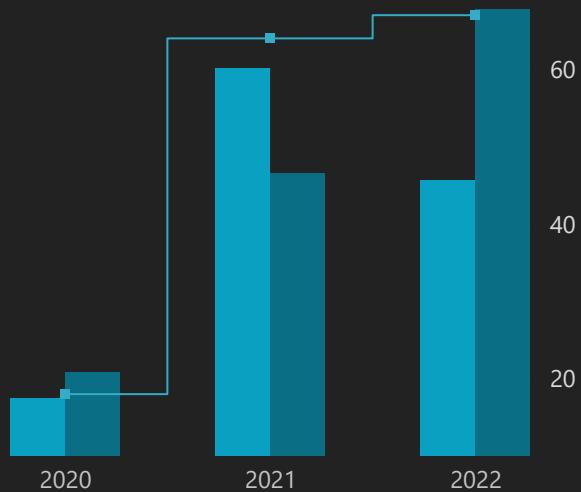
Understandable data model



DAX Library



Examples



**A clean / easy / well thought data model will:**

- Solve your problems
- Reduce DAX complexity by 90%
- Improve performance
- Provide a smile to your users

Star schema

From Wikipedia, the free encyclopedia

In computing, the **star schema** is the simplest style of **data mart schema** and is the approach most widely used to develop data warehouses and dimensional data marts.^[1] The star schema consists of one or more **fact tables** referencing any number of **dimension tables**. The star schema is an important special case of the **snowflake schema**, and is more effective for handling simpler queries.^[2]

The star schema gets its name from the **physical model's**^[3] resemblance to a **star shape** with a fact table at its center and the dimension tables surrounding it representing the star's points.

Star Schema

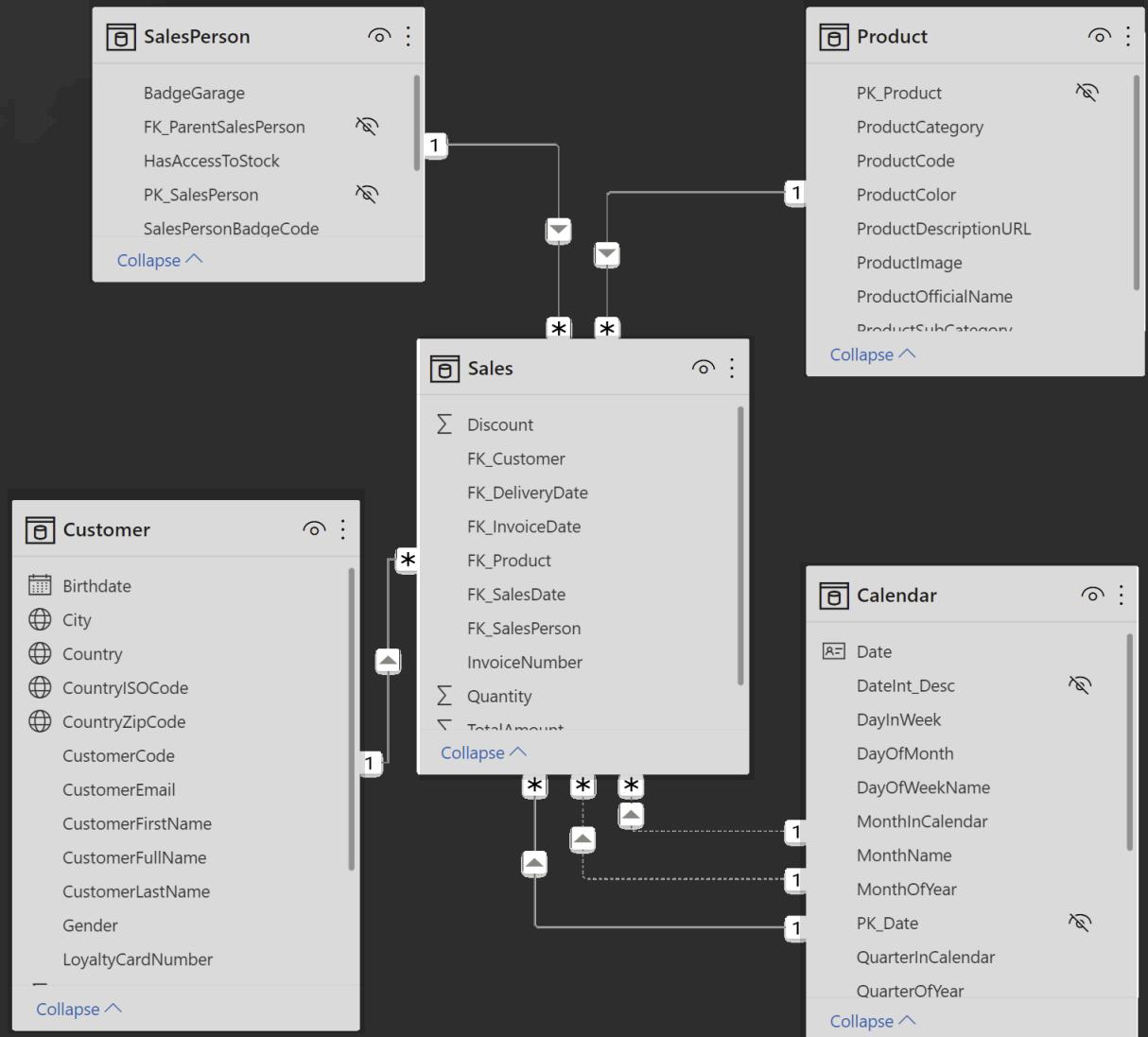
Sales

Sales Person

Customer

Product

Calendar





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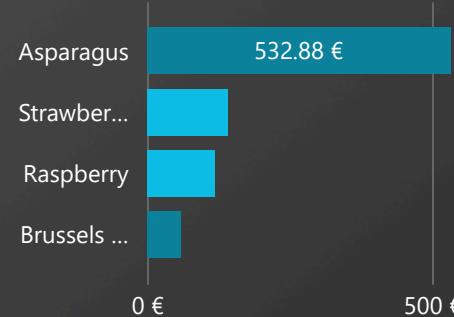
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Misc

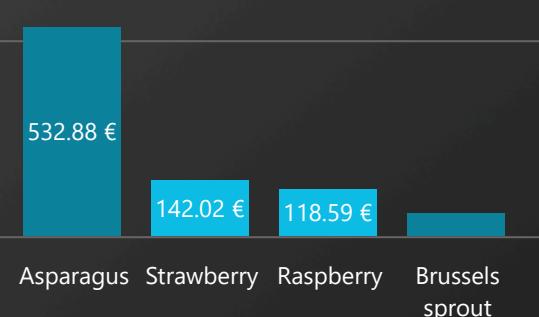
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Visuals

Stacked Bar Chart



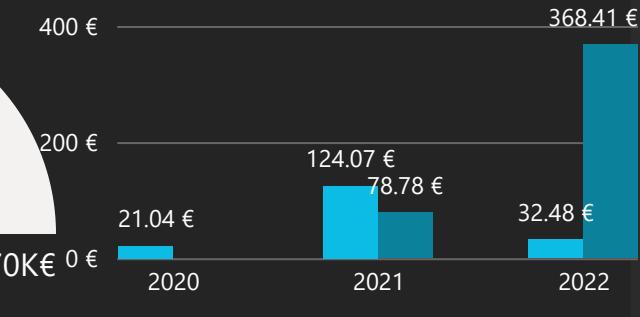
Stacked column chart



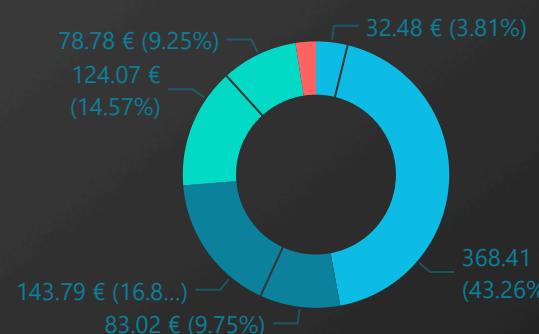
Clusteredbar chart



Clustered column chart



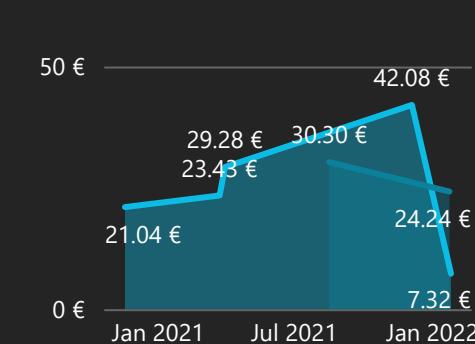
100% Stacked column chart



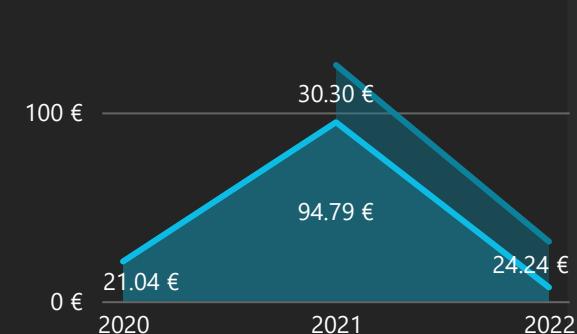
100% Stacked bar chart



Line chart



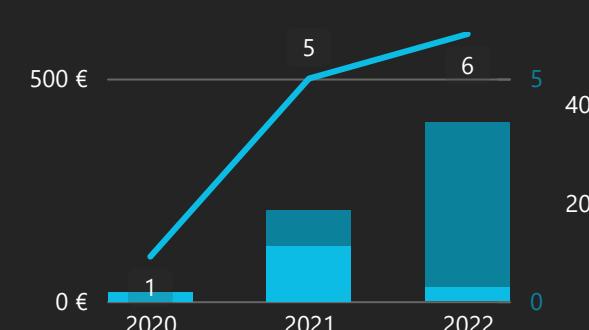
Area chart



Stacked area chart



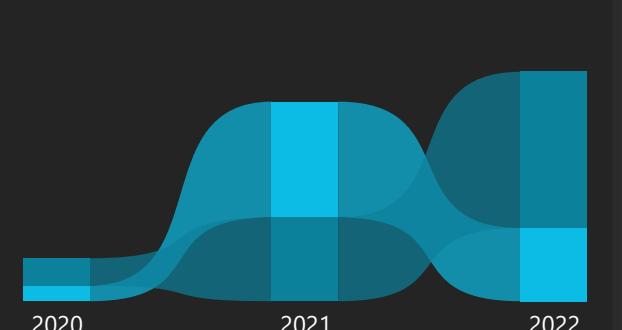
Line and stacked column cart



Line and clustered column chart



Ribbon chart





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Aggregation functions	Date and Time functions	Filter functions	Information functions
Logical functions	Math and trig functions	Parent Child functions	Relationship functions
Statistical function	Text functions	Time Intelligence functions	Misc

Aggregation functions

Article • 06/09/2022 • 2 minutes to read • 1 contributor

Aggregation functions calculate a (scalar) value such as count, sum, average, minimum, or maximum for all rows in a column or table as defined by the expression.

[View examples](#)[Microsoft Documentation](#)[DAX Functions](#)



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AVERAGE	4.27
AVERAGEA	4.27
AVERAGEX	14.80
AVERAGEX Error	15.07
AVERAGEX Articles by InvoiceNumber	1.94
COUNT	6
COUNTA	6
COUNTBLANK	2
COUNTROWS Customer	12
DISTINCTCOUNT Customer On Sales	12
DISTINCTCOUNTNOBLANK BadgeGarage	3
MAX Quantity	6
MAX 10 or 20	20
MIN Quantity	1
MIN 10 or 20	10
SUM TotalAmount	3,728.53 €
Semi Additive NbChild	15

Semi Additive AVERAGEX

InvoiceNumber	AVERAGEX Articles by InvoiceNumber	COUNTROWS Sales
33	1.00	1
34	1.00	1
35	1.00	1
36	1.00	1
37	2.00	2
38	1.00	1
39	3.00	3
40	2.00	2
41	1.00	1
42	1.00	1
43	1.00	1
44	5.00	5
45	1.00	1
Total	1.62	21

Aggregation



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Today date and time

TODAY	11/26/2025
NOW	11/26/2025 5:08:42 PM
UTCNOW	11/26/2025 12:08:42 PM

Difference between dates

TODAY	11/26/2025
DATE	12/31/2022 12:00:00 AM
DATEDIFF Nb Days	-1061
DATEDIFF Nb Month	-35
DATEDIFF Nb Year	-3

Extract part

YEAR	2025
MONTH	11
DAY	26
HOUR	17
MINUTE	8
SECOND	42

Week Number

WEEKDAY	4
WEEKNUM Week Begin on Monday	48
WEEKNUM Week Begin on Sunday	48

Formatting Date

FORMAT Date General Date	11/26/2025
FORMAT Date ddMMYYYY	26/11/2025
DATEVALUE String To Date	1/12/2022 12:00:00 AM



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Filter

FILTER() - ALL()

CustomerFullName	ProductCategory	SUM TotalAmount	Amount Fruit	Amount Fruit (All Product)
Pauline Peanut	Fruit	151.98 €	151.98	151.98
Pauline Peanut	Vegetable	85.42 €		151.98

FILTER()

Year	SUM TotalAmount	Amount Y-1	Amount Y-1 Filter	Amount Y-1 Filter 2
	692.61 €			
2020	160.74 €			
2021	746.78 €	160.74	160.74	160.74
2022	858.56 €	746.78	746.78	746.78

SAMEPERIODLASTYEAR() - PARALLELPERIOD()

Year	SUM TotalAmount	SAMEPERIODLASTYEAR	PARALLELPERIOD Y-1
	692.61 €		
2020	160.74 €		
2021	746.78 €	160.74	160.74
2022	858.56 €	746.78	746.78

INDEX()

Country
<input type="checkbox"/> Belgium
<input type="checkbox"/> France

ProductOfficialName	SUM TotalAmount
Asparagus	264.22 €
Rhubarb	208.88 €
Strawberry	89.42 €
Cranberry	68.04 €
Papaya	49.40 €
Lettuce	47.60 €
Total	1,147.01 €

Cranberry
INDEX Number 4



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Customer FullName

All ▾

Customer FullName

Country	HASONEFILTER FullName	HASONEVALUE FullName	ISFILTERED FullName	ISCROSSFILTERED FullName	SELECTEDVALUE Country	SELECTEDVALUE FullName
Belgium	Amina		1		1 Belgium	No Name
	Arnaud		1		1 Belgium	Amina Loo
	Bjorn		1		1 Belgium	Arnaud
	Lisa		1		1 Belgium	Gastelblum
France	Julien		1		1 France	Bjorn Bio
	Pauline		1		1 France	Lisa Dagusti
	Sarah		1		1 France	No Name
	Theresa		1		1 France	Julien Pomodoro
Total					1 No Country	Pauline Peanut
						Sarah Croche
						Theresa Limande
						No Name

Country

All ▾

Customer FirstName

All ▾

Customer FirstName

Country	HASONEFILTER FirstName	HASONEVALUE FirstName	ISFILTERED FirstName	ISCROSSFILTERED FirstName	SELECTEDVALUE Country	SELECTEDVALUE FullName
Belgium	Amina	1	1	1	1 Belgium	No Name
	Arnaud	1	1	1	1 Belgium	Amina Loo
	Bjorn	1	1	1	1 Belgium	Arnaud Gastelblum
	Lisa	1	1	1	1 Belgium	Bjorn Bio
France	Julien	1	1	1	1 France	Lisa Dagusti
	Pauline	1	1	1	1 France	No Name
	Sarah	1	1	1	1 France	Julien Pomodoro
	Theresa	1	1	1	1 France	Pauline Peanut
Total					1 No Country	Sarah Croche
						Theresa Limande
						No Name

Information



Logical

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Switch

If

Logical

Coalesce

```
SWITCH =  
    VAR CurrentGender = FIRSTNONBLANK(Customer[Gender]; 0)  
    RETURN  
        SWITCH(  
            CurrentGender  
            ; "F"; "Women"  
            ; "M"; "Men"  
            ; "Transgender"  
        )
```

CustomerFullName	Gender	SWITCH
Julien Pomodoro	M	Men
Pauline Peanut	F	Women

```
SWITCH Multi condition =  
    // Using SWITCH() with TRUE() in the Expression  
    // allow you to specifies mutliple Expression in Values fields  
    // --> In this example: We can create a Range based on a variable  
    VAR Sum_LoyaltyPoints = SUM(Customer[LoyaltyPoints])  
    RETURN  
        SWITCH(  
            TRUE()  
            // Case 1  
            ;Sum_LoyaltyPoints < 3000 ; "Platinum"  
            // Case 2  
            ;AND(Sum_LoyaltyPoints >= 3000; Sum_LoyaltyPoints < 6500); "Silver"  
            // Else  
            ; "Gold"  
        )
```

CustomerFullName	LoyaltyPoints	SWITCH Multi condition
Julien Pomodoro	2481	Platinum
Pauline Peanut	3612	Silver



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Year	SUM TotalAmount	PARALLELPERIOD Y-1	PARALLELPERIOD M-1	SAMEPERIODLASTYEAR	% Evolution / Total This Year	% Evolution / Period Y-1	YTD % Evolution / Total This Year
2021	746.78 €	160.74	725.33	160.74	100.00%	464.59%	100.00%
January	51.63 €	160.74	63.41		6.91%		6.91%
February	63.44 €	160.74	51.63		8.50%		15.41%
March	76.44 €	160.74	63.44		10.24%		25.64%
April	111.42 €	160.74	76.44		14.92%		40.56%
May	57.10 €	160.74	111.42		7.65%		48.21%
June	74.33 €	160.74	57.10		9.95%		58.16%
July	39.02 €	160.74	74.33		5.23%		63.39%
August	73.07 €	160.74	39.02		9.78%		73.17%
September	34.68 €	160.74	73.07		4.64%		77.82%
October	65.67 €	160.74	34.68	46.00	8.79%	142.76%	86.61%
November	15.12 €	160.74	65.67	51.33	2.02%	29.46%	88.64%
December	84.86 €	160.74	15.12	63.41	11.36%	133.83%	100.00%
2022	858.56 €	746.78	882.82	746.78	100.00%	114.97%	100.00%
January	51.69 €	746.78	84.86	51.63	6.02%	100.12%	6.02%
February	125.91 €	746.78	51.69	63.44	14.67%	198.47%	20.69%
March	131.70 €	746.78	125.91	76.44	15.34%	172.29%	36.03%
April	29.21 €	746.78	131.70	111.42	3.40%	26.22%	39.43%
May	36.64 €	746.78	29.21	57.10	4.27%	64.17%	43.70%
June	32.10 €	746.78	36.64	74.33	3.74%	43.19%	47.43%
July	91.34 €	746.78	32.10	39.02	10.64%	234.09%	58.07%
August	168.35 €	746.78	91.34	73.07	19.61%	230.40%	77.68%
September	29.00 €	746.78	168.35	34.68	3.38%	83.62%	81.06%
October	35.07 €	746.78	29.00	65.67	4.08%	53.40%	85.14%
November	66.95 €	746.78	35.07	15.12	7.80%	442.79%	92.94%
December	60.60 €	746.78	66.95	84.86	7.06%	71.41%	100.00%
Total	1,605.34 €	907.52	1,608.15	907.52	186.98%	176.89%	100.00%



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Format

Text

Concatenate

Unichar

Unicode

Text

12.35K

FORMAT to Integer

\$ 1,234,568

FORMAT Numeric

33.00%

FORMAT Percent

No

FORMAT Yes/No

26/11/2025

FORMAT Date ddMMYYYY

11/26/2025

FORMAT Date General Date

VALUE("12345")

FORMAT(1234567,89; "\$ #,##0;(#,##0)")

FORMAT(0,33; "Percent")

FORMAT(0; "Yes/No")

FORMAT(TODAY(); "dd/MM/YYYY")

FORMAT(TODAY(); "General Date")



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Statistical

COUNT() - DISTINCTCOUNT()		
CustomerFullName	COUNT Customer On Sales	DISTINCTCOUNT Customer On Customer
Amina Loo	25	1
Pauline Peanut	21	1
Total	46	2

COUNTROWS()		
COUNTROWS Customer	COUNTROWS Product	COUNTROWS Sales
8	25	179



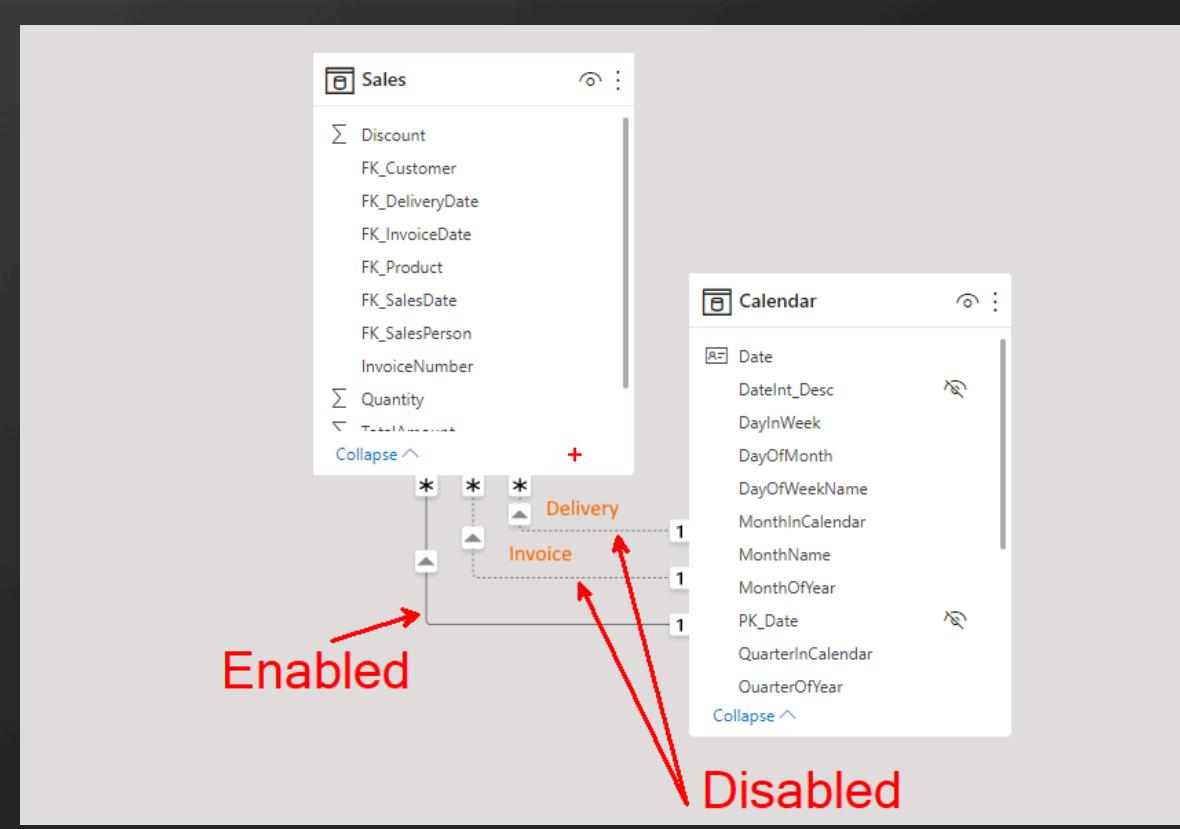
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InvoiceNumber	Date	SUM TotalAmount	USERELATIONSHIP InvoiceDate	USERELATIONSHIP DeliveryDate
129		1.50 €	1.50	1.50
Total		1.50 €	1.50	1.50

USERELATIONSHIP()

Specifies the relationship to be used in a specific calculation as the one that exists between columnName1 and columnName2.





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Parent Child

Calculated Column: PATH | PATHITEM

PK_SalesPerson	SalesPersonFirstName
1	Edouard
3	Isabelle
6	Juliette
4	Khaled
2	Mathieu
5	Sandy

Calculated Column PATHLENGTH

SalesPersonFirstName
Edouard
Isabelle
Juliette
Khaled
Mathieu
Sandy

Calculated Column: PATH | PATHITEMREVERSE

PK_SalesPerson	SalesPersonFirstName
1	Edouard
3	Isabelle
6	Juliette
4	Khaled
2	Mathieu
5	Sandy

Calculated Column: LOKUPVALUE

SalesPersonFirstName	SalesPersonLastName	TotalAmount
Edouard	Clément	322.65 €
Isabelle	VanCampenhoudt	435.17 €
Juliette	Kool	488.53 €
Khaled	Kahoul	533.45 €
Mathieu	Ricour	474.67 €
Sandy	Gram	204.22 €



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ABS	10	MROUND	9.90
ACOS	2.21	ODD	11
ACOSH	2.99	PI	3.14
ACOT	0.10	POWER	1,000.00
ACOTH	0.10	QUOTIENT	2
ASIN	-0.52	RADIANS	0.17
ASINH	3.00	RAND	0.84
ATAN	1.47	RANDBETWEEN	71
ATANH	-0.10	ROUND	7.70
CEILING	10.35	ROUNDDOWN	7.60
CONVERT	10	ROUNDUP	7.70
COS	-0.84	SIGN	1
COSH	11,013.23	SIN	-0.54
COT	1.54	SINH	11,013.23
COTH	1.00	SQRT	3.16
CURRENCY	10.00	SQRTPI	5.60
DEGREES	572.96	TAN	0.65
DIVIDE	5.00	TANH	1.00
EVEN	10	TRUNC	10
EXP	22,026.47		
FACT	3,628,800.00		
FLOOR	10.00		
GCD	2		
INT	10		
ISO.CEILING	10		
LCM	10		
LN	2.30		
LOG	1.00		
LOG10	1.00		

Random Numbers

RAND	0.37
RANDBETWEEN	80



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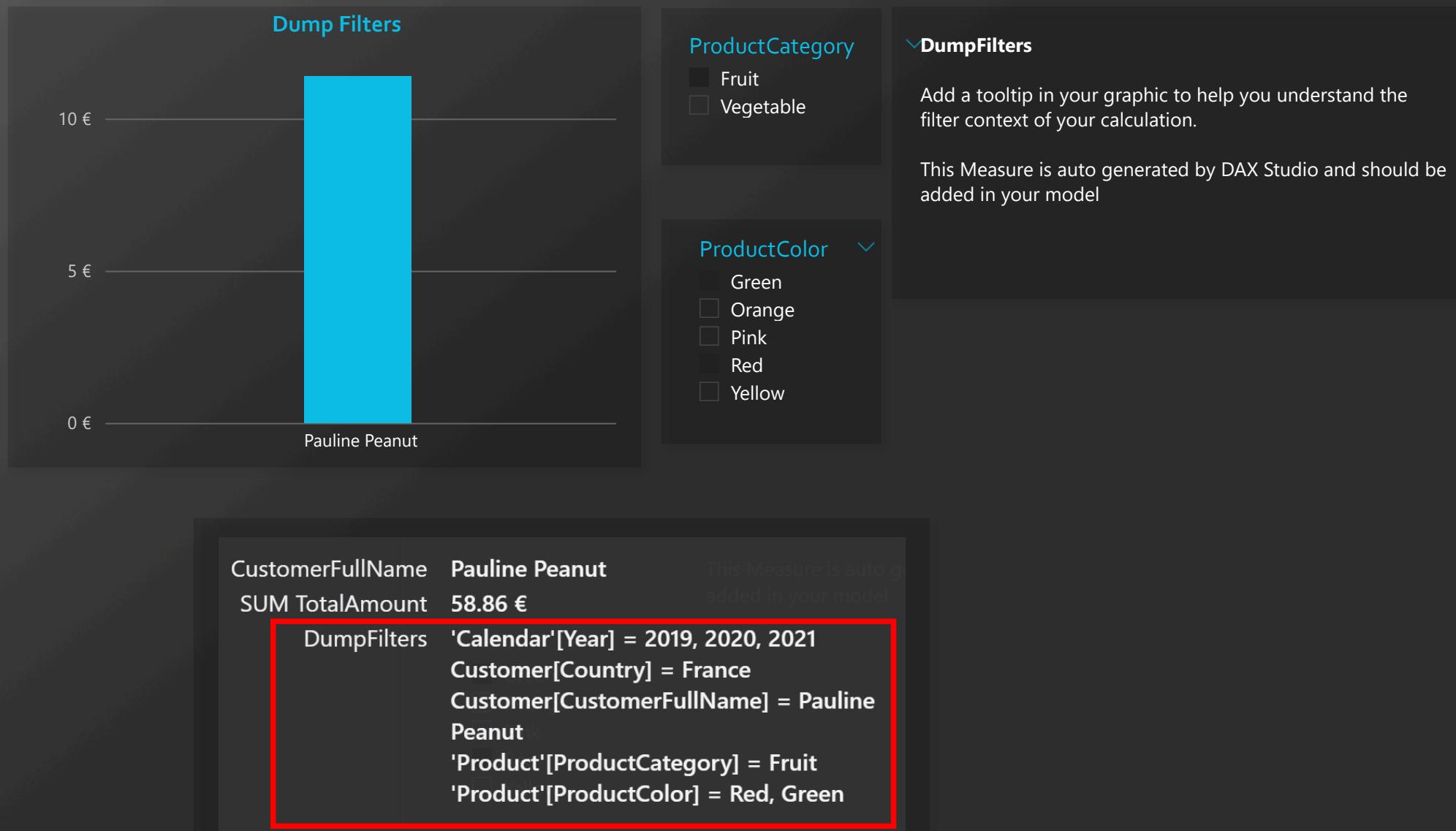
Misc

Dump Filters

Fields Parameter

DAX is case insensitive

DAX in Description





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Measure Name

- ✓ Date and Time functions
- ✓ Filter functions
- ✓ Logical functions
- ✓ Math and Trig functions
- ✓ Relationship functions
- ✓ Statistical functions\Count
- ✓ Text functions
- ✓ Text functions\Format
- ✓ Time intelligence functions
- ✓ Time intelligence functions\Evolution

DAX Code

MeasureName	Expression
% Evolution / Period Y-1	<pre>DIVIDE([SUM TotalAmount] , [SAMEPERIODLASTYEAR])</pre>
% Evolution / Total This Year	<pre>VAR CurrentYear = MAX('Calendar'[Year]) VAR CurrentYearTotalAmount = CALCULATE([SUM TotalAmount] , FILTER(ALL('Calendar') , 'Calendar'[Year] = CurrentYear)) // Also works with: // CALCULATE(// [SUM TotalAmount] // ; 'Calendar'[Year] = CurrentYear // ; ALL('Calendar') //) RETURN DIVIDE([SUM TotalAmount] , CurrentYearTotalAmount)</pre>
Amount Fruit	<pre>CALCULATE(SUM(Sales[TotalAmount]) , FILTER('Product' , 'Product'[ProductCategory] = "Fruit"))</pre>
Amount Fruit (All Product)	<pre>CALCULATE(CALCULATE(SUM(Sales[TotalAmount]) , FILTER('Product' , 'Product'[ProductCategory] = "Fruit")) , ALL('Product'))</pre>
Amount Y-1	<pre>VAR CurrentYear = MAX('Calendar'[Year]) RETURN CALCULATE([SUM TotalAmount]</pre>