



CONTENIDOS

**[https://github.com
/jorloicono/AF-
DAX-AVANZADO](https://github.com/jorloicono/AF-DAX-AVANZADO)**

PRESENTACIONES



Creación de medidas en Power BI - Power BI Desktop

Archivo Inicio Ayuda Herramientas de tablas Herramientas de columnas

Nombre Data

Marcar como tabla de fechas

Administrar relaciones

Nueva Medida Nueva medida rápida Nueva columna tabla

Permite escribir una expresión DAX que calcule un valor a partir de los datos.

1 Importe con IVA = Data

NFAC	CLIENTE	PAÍS	PRODUCTO	CÓDIGO	FECHA	IMPORTE	Importe con IVA
2	Juan	Finlandia	Oro	XS	viernes, 31 de diciembre de 2021	295	356,95
5	Laura	Finlandia	Cobre	L	domingo, 1 de noviembre de 2020	825	998,25
41	Marta	Finlandia	Cadmio	M	domingo, 17 de enero de 2021	475	574,75
42	Eva	Finlandia	Aluminio	S	lunes, 15 de febrero de 2021	396	479,16
54	Juan	Finlandia	Aluminio	L	sábado, 25 de diciembre de 2021	637	770,77
60	Marta	Finlandia	Cadmio	M	miércoles, 12 de agosto de 2020	943	1143,45
72	Eva	Finlandia	Aluminio	L	domingo, 4 de julio de 2021	242	292,82
80	Eva	Finlandia	Cobre	S	domingo, 19 de julio de 2020	290	350,9
83	David	Finlandia	Cadmio	XL	lunes, 27 de enero de 2020	594	718,74
84	Juan	Finlandia	Cadmio	S	lunes, 8 de marzo de 2021	620	750,2
88	Marta	Finlandia	Cadmio	XL	miércoles, 1 de diciembre de 2021	298	360,58
96	Laura	Finlandia	Plata	XL	domingo, 18 de octubre de 2020	522	631,62
100	David	Finlandia	Plata	L	viernes, 1 de octubre de 2021	306	370,26
112	David	Finlandia	Cadmio	XS	lunes, 3 de agosto de 2020	775	937,75
118	Laura	Finlandia	Cadmio	M	jueves, 24 de diciembre de 2020	870	1052,7
126	Juan	Finlandia	Cadmio	XL	miércoles, 4 de agosto de 2021	563	681,23
133	Eva	Finlandia	Cobre	S	domingo, 31 de mayo de 2020	489	591,69
138	David	Finlandia	Cadmio	M	viernes, 25 de septiembre de 2020	214	258,94
140	Juan	Finlandia	Plata	XS	domingo, 7 de junio de 2020	715	865,15
142	Juan	Finlandia	Oro	M	viernes, 5 de febrero de 2021	989	1196,69
143	Juan	Finlandia	Oro	XL	viernes, 31 de diciembre de 2021	415	502,15
145	Juan	Finlandia	Cobre	XL	lunes, 21 de septiembre de 2020	433	523,93
165	Marta	Finlandia	Plata	M	miércoles, 24 de junio de 2020	490	592,9
166	Marta	Finlandia	Oro	L	viernes, 31 de julio de 2020	429	519,09
167	David	Finlandia	Aluminio	L	miércoles, 2 de junio de 2021	534	646,14

Campos

Buscar

Data

CLIENTE

CÓDIGO

FECHA

IMPORTE

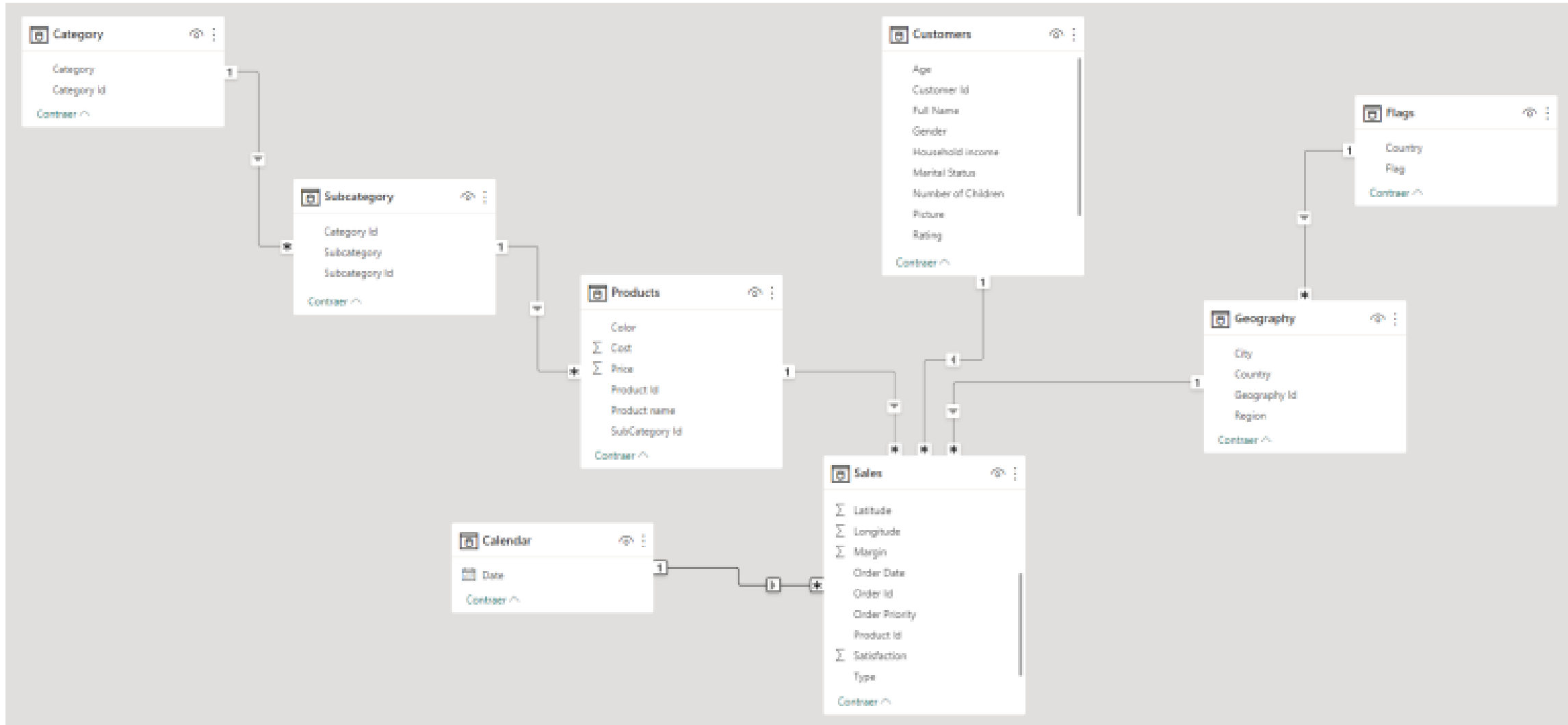
Importe con IVA

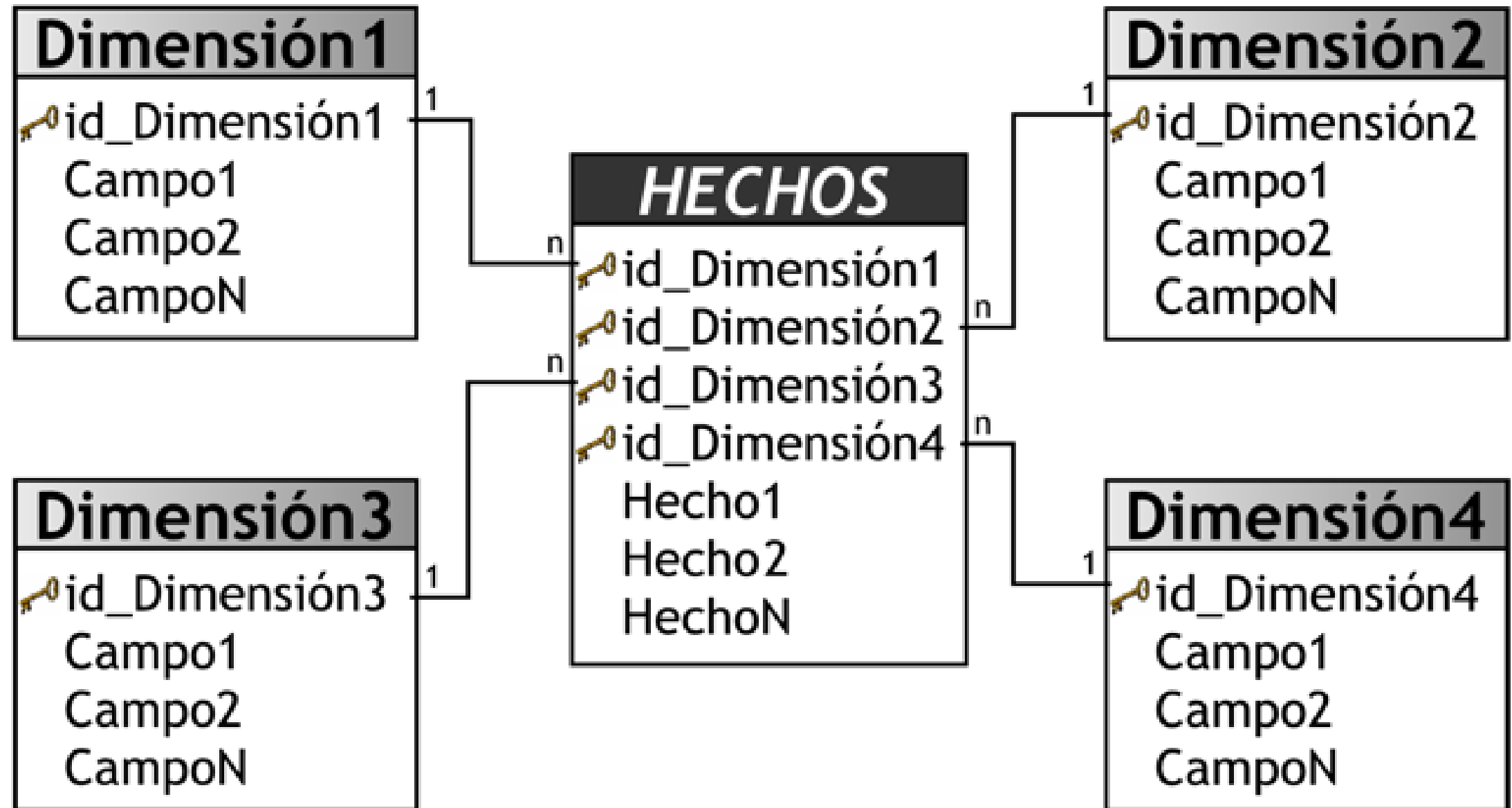
NFAC

PAÍS

PRODUCTO

Tabla: Data (1000 filas) Columna: Importe con IVA (592 valores distintos)





Category	
Cat-A	Jenny Jones
Cat-B	John Smith



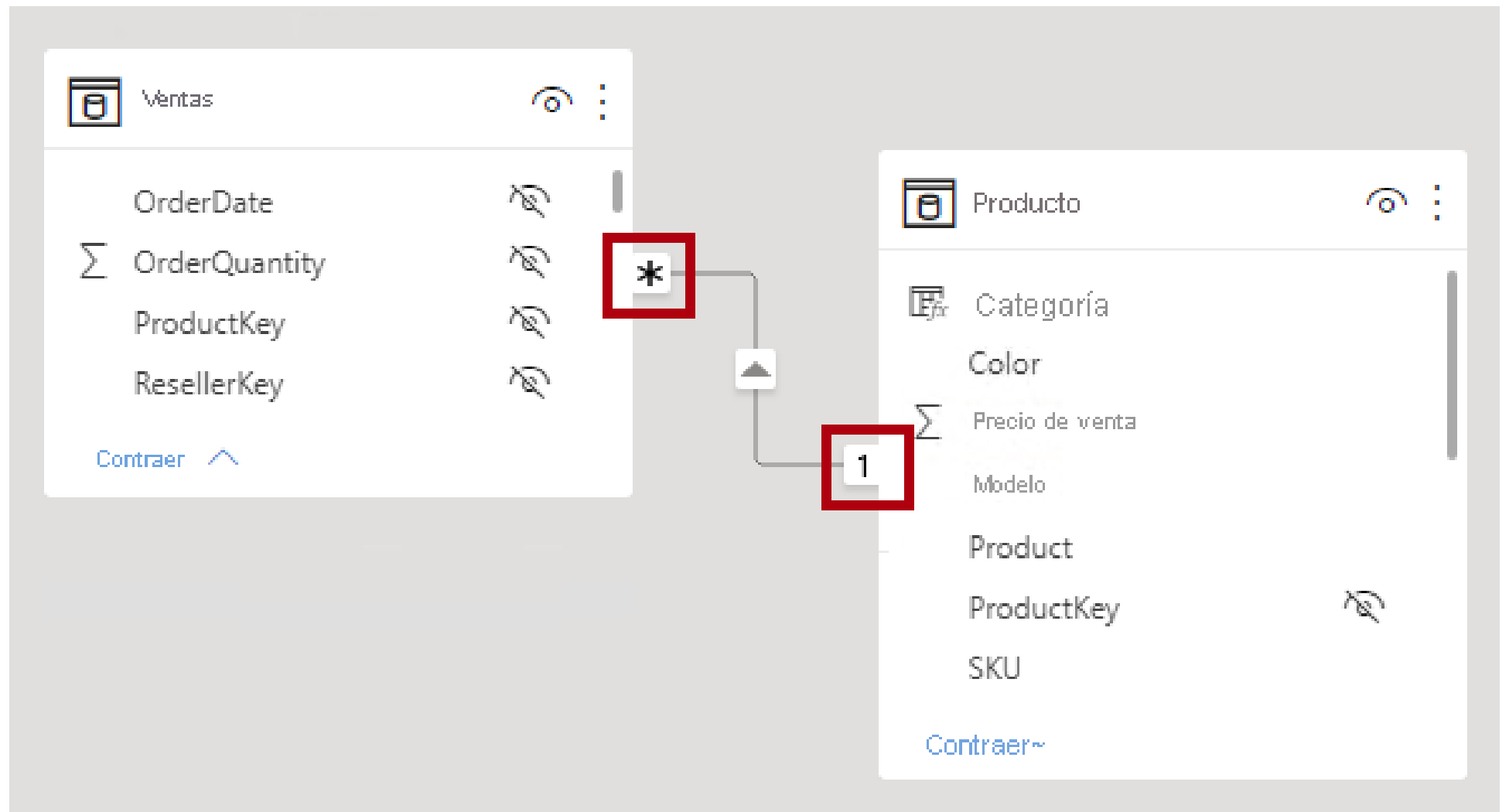
Product			
1	Prod-A	Cat-A	Red
2	Prod-B	Cat-B	Yellow
3	Prod-C	Cat-A	Blue



Sales		
2	CY2017	10
1	CY2017	3
2	CY2018	5
2	CY2018	2
3	CY2018	11

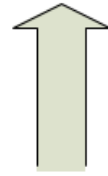
Year	
CY2017	
CY2018	
CY2019	
CY2020	







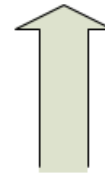
Power BI



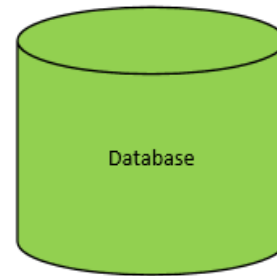
Live Connection



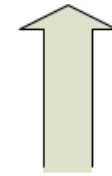
Power BI



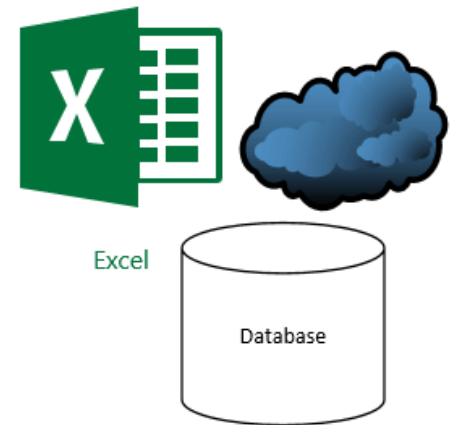
Direct Query



Power BI



Import Data





DAX

vs

M

Power BI for Business Intelligence

DAX Cheat Sheet

> Math & statistical functions

- **SUM**(`column`) Adds all the numbers in a column.
- **SUMX**(`table`, `expression`) Returns the sum of an expression evaluated for each row in a table.
- **AVERAGE**(`column`) Returns the average (arithmetic mean) of all the numbers in a column.
- **AVERAGEX**(`table`, `expression`) Calculates the average (arithmetic mean) of a set of expressions evaluated over a table.
- **MEDIAN**(`column`) Returns the median of a column.
- **MEDIANX**(`table`, `expression`) Calculates the median of a set of expressions evaluated over a table.
- **GEOMEAN**(`column`) Calculates the geometric mean of a column.
- **GEOMEANX**(`table`, `expression`) Calculates the geometric mean of a set of expressions evaluated over a table.
- **COUNT**(`column`) Returns the number of cells in a column that contain non-blank values.
- **COUNTX**(`table`, `expression`) Counts the number of rows from an expression that evaluates to a non-blank value.
- **DIVIDE**(`numerator`, `denominator`) [`,altersresult=1`] Performs division and returns alternate result or BLANK() on division by 0.
- **MIN**(`column`) Returns a minimum value of a column.
- **MAX**(`column`) Returns a maximum value of a column.
- **COUNTROWS**(`table`) Counts the number of rows in a table.
- **DISTINCTCOUNT**(`column`) Counts the number of distinct values in a column.
- **RANKX**(`table`, `expressions` [, `value`] [, `order`] [, `ties`]]) Returns the ranking of a number in a list of numbers for each row in the table argument.

> Filter functions

- **FILTER**(`table`, `filter`) Returns a table that is a subset of another table or expression.
- **CALCULATE**(`expression` [, `filter1`] [, `filter2`] [, ...]]) Evaluates an expression in a filter context.
- **HASONEVALUE**(`columnName`) Returns TRUE when the context for columnName has been filtered down to one distinct value only. Otherwise it is FALSE.
- **ALLNOBLANKROW**(`table` | `column` [, `column`] [, `column`] [, ...]]) Returns a table that is a subset of another table or expression.
- **ALL**(`{table | column | column [, column] [, ...]}`) Returns all the rows in a table, or all the values in a column, ignoring any filters that might have been applied.
- **ALLEXCEPT**(`table`, `column` [, `column`] [, ...]) Returns all the rows in a table except for those rows that are affected by the specified column filters.
- **REMOVEFILTERS**(`table` | `column` [, `column`] [, `column`] [, ...]]) Clear all filters from designated tables or columns.

> Logical functions

- **IF**(`logical_test`, `value_if_true` [, `value_if_false`]) Checks a condition, and returns a certain value depending on whether it is true or false.
- **AND**(`logical 1`, `logical 2`) Checks whether both arguments are TRUE, and returns TRUE if both arguments are TRUE. Otherwise, it returns FALSE.
- **OR**(`logical 1`, `logical 2`) Checks whether one of the arguments is TRUE to return TRUE. The function returns FALSE if both arguments are FALSE.
- **NOT**(`logical`) Changes TRUE to FALSE and vice versa.
- **SWITCH**(`expression`, `value`, `result` [, `value`, `result`] [, ...]) Evaluates an expression against a list of values and returns one of possible results.
- **IFERROR**(`value`, `value_if_error`) Returns value if error if the first expression is an error and the value of the expression itself otherwise.

> Date & time functions

- **CALENDARA**(`start_date`, `end_date`) Returns a table with a single column named "Date" that contains a contiguous set of dates.
- **DATE**(`year`, `month`, `day`) Returns the specified date in datetime format.
- **DATEDIFF**(`date_1`, `date_2`, `interval`) Returns the number of units between two dates as defined in `interval`.
- **DATEVALUE**(`date_text`) Converts a date in text to a date in datetime format.
- **DAY**(`date`) Returns a number from 1 to 31 representing the day of the month.
- **WEEKNUM**(`date`) Returns weeknumber in the year.
- **MONTH**(`date`) Returns a number from 1 to 12 representing a month.
- **QUARTER**(`date`) Returns a number from 1 to 4 representing a quarter.

> Time intelligence functions

- **DATEADD**(`dates`, `number_of_intervals`, `interval`) Moves a date by a specific interval.
- **DATESBETWEEN**(`dates`, `date_1`, `date_2`) Returns the dates between specified dates.
- **TOTALYTD**(`expression`, `dates` [, `filter`] [, `year_end_date`]) Evaluates the year-to-date value of the expression in the current context.
- **SAMEPERIODLASTYEAR**(`dates`) Returns a table that contains a column of dates shifted one year back in time.
- **STARTOFMONTH**(`dates`) // **ENDOFMONTH**(`dates`) Returns the start // end of the month.
- **STARTOFQUARTER**(`dates`) // **ENDOFQUARTER**(`dates`) Returns the start // end of the quarter.
- **STARTOFYEAR**(`dates`) // **ENDOFYEAR**(`dates`) Returns the start // end of the quarter.

> Relationship functions

- **CROSSFILTER**(`left_column`, `right_column`, `crossfiltertype`) Specifies the cross-filtering direction to be used in a calculation.
- **RELATED**(`column`) Returns a related value from another table.

> Table manipulation functions

- **SUMMARIZE**(`table`, `groupBy_columnName` [, `groupBy_columnName`] [, `name`, `expression`] ...) Returns a summary table for the requested totals over a set of groups.
- **DISTINCT**(`table`) Returns a table by removing duplicate rows from another table or expression.
- **ADDCOLUMNS**(`table`, `name`, `expression` [, `name`, `expression`] ...) Adds calculated columns to the given table or table expression.
- **SELECTCOLUMNS**(`table`, `name`, `expression` [, `name`, `expression`] ...) Selects calculated columns from the given table or table expression.
- **GROUPBY**(`table` [, `groupBy_columnName`] [, `column_name`] [`expression`] ...) Create a summary of the input table grouped by specific columns.
- **INTERSECT**(`left_table`, `right_table`) Returns the rows of the left-side table that appear in the right-side table.
- **NATURALINNERJOIN**(`left_table`, `right_table`) Joins two tables using an inner join.
- **NATURALLEFTOUTERJOIN**(`left_table`, `right_table`) Joins two tables using a left outer join.
- **UNION**(`table`, `table` [, `table`] [, ...]) Returns the union of tables with matching columns.

> Text functions

- **EXACT**(`text_1`, `text_2`) Checks if two strings are identical (EXACT() is case sensitive).
- **FIND**(`text_to_find`, `in_text`) Returns the starting position a text within another text (FIND() is case sensitive).
- **FORMAT**(`value`, `format`) Converts a value to a text in the specified number format.
- **LEFT**(`text`, `num_chars`) Returns the number of characters from the start of a string.
- **RIGHT**(`text`, `num_chars`) Returns the number of characters from the end of a string.
- **LEN**(`text`) Returns the number of characters in a string of text.
- **LOWER**(`text`) Converts all letters in a string to lowercase.
- **UPPER**(`text`) Converts all letters in a string to uppercase.
- **TRIM**(`text`) Remove all spaces from a text string.
- **CONCATENATE**(`text_1`, `text_2`) Joins two strings together into one string.
- **SUBSTITUTE**(`text`, `old_text`, `new_text`, `instance_num`) Replaces existing text with new text in a string.
- **REPLACE**(`old_text`, `start_position`, `num_chars`, `new_text`) Replaces part of a string with a new string.

> Information functions

- **COLUMNS**(`table`) Returns statistics regarding every column in every table. This function has no arguments.
- **NAMEOF**(`value`) Returns the column or measure name of a value.
- **ISBLANK**(`value`) // **ISERROR**(`value`) Returns whether the value is blank // an error.
- **ISLOGICAL**(`value`) Checks whether a value is logical or not.
- **ISNUMBER**(`value`) Checks whether a value is a number or not.
- **ISFILTERED**(`table` | `column`) Returns true when there are direct filters on a column.
- **ISCROSSFILTERED**(`table` | `column`) Returns true when there are crossfilters on a column.
- **USERPRINCIPALNAME**() Returns the user principal name or email address. This function has no arguments.

> DAX statements

- **VAR**(`name` = `expression`) Stores the result of an expression as a named variable. To return the variable, use RETURN after the variable is defined.
- **COLUMNS**(`table` | `column`) = `expression`) Stores the result of an expression as a column in a table.
- **ORDER BY**(`table` | `column`) Defines the sort order of a column. Every column can be sorted in ascending (ASC) or descending (DESC) way.

> DAX Operators

Comparison operators	Meaning
=	Equal to
= =	Strict equal to
>	Greater than
<	Smaller than
> =	Greater than or equal to
= <	Smaller than or equal to
< >	Not equal to

Text operator	Meaning	Example
&	Concatenates text values	Concatenates text values [City]&" "[State]

Logical operator	Meaning	Example
&&	AND condition	([City] = "Brv") && ([Return] = "Yes")
	OR condition	([City] = "Brv") ([Return] = "Yes")
IN {}	OR condition For each row	Product[Color] IN {"Red", "Blue", "Gold"}

Active StoreName	SalesAmount
Contoso Wapato Store	\$16,427,512.9295
Contoso Warsaw Store	\$15,142,181.7609
Contoso Waterbury Store	\$15,104,327.8925
Contoso Waukesha No.1 Store	\$16,032,441.5125
Contoso Waukesha No.2 Store	\$16,448,330.8045
Contoso West Yorkshire Store	\$15,165,663.891
Contoso Westminster Store	\$15,266,782.0765
Contoso Wheat Ridge Store	\$16,117,648.774
Contoso Winchester Store	\$15,563,992.0475
Contoso Worcester No.1 Store	\$15,388,242.957
Contoso Yakima Store	\$16,266,888.313
Contoso Yerevan Store	\$26,084,935.2425
Contoso Yokohama Store	\$25,311,723.6245
Contoso York Store	\$14,926,059.9838
Inactive	\$189,962,742.7355
Total	\$8,341,224,364.8324

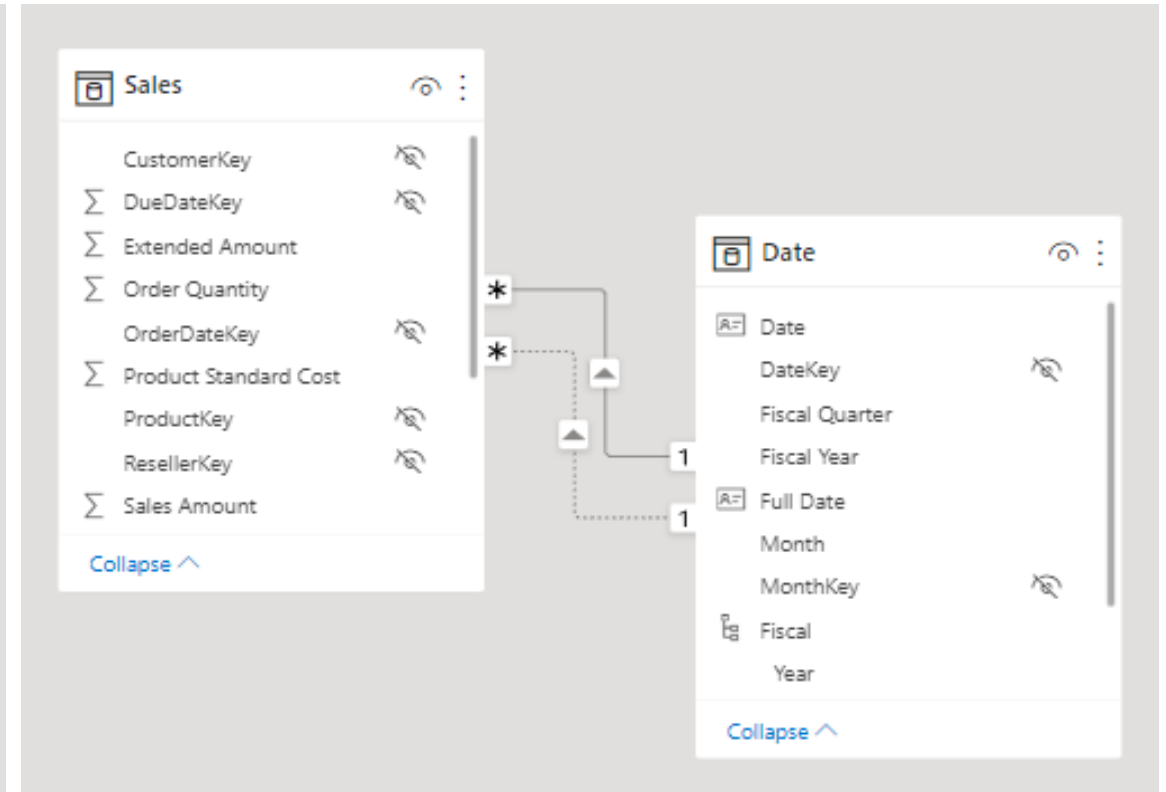
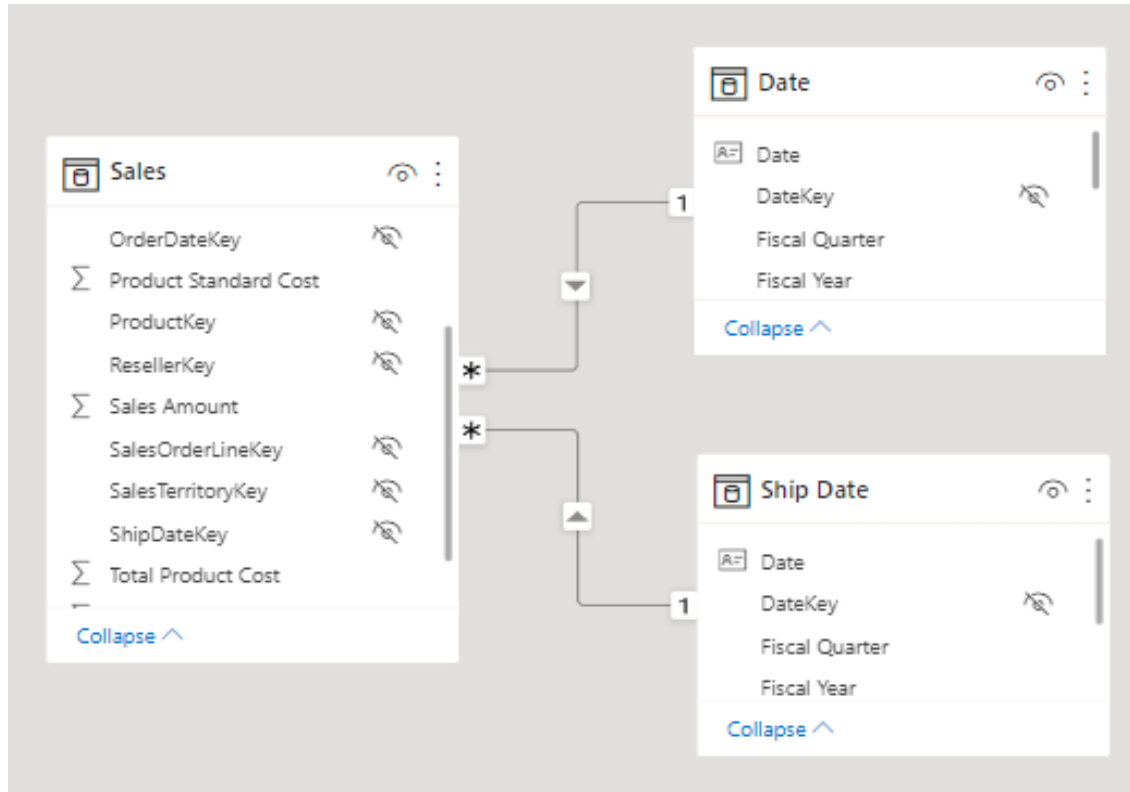
Filters

Visualizations

☐ ∑ DiscountAmount
 ☐ ∑ DiscountQuant...
 ☐ ∑ ReturnAmount
 ☐ ∑ ReturnQuantity
 ☒ ∑ SalesAmount
 ☐ ∑ SalesQuantity
 ☐ ∑ TotalCost
 ☐ ∑ UnitCost
 ☐ ∑ UnitPrice

Stores

☒ Active StoreNa...
 ☐ CloseReason
 ☐ ∑ EmployeeCount



DIMENSIONES REALIZADORAS DE ROLES

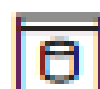
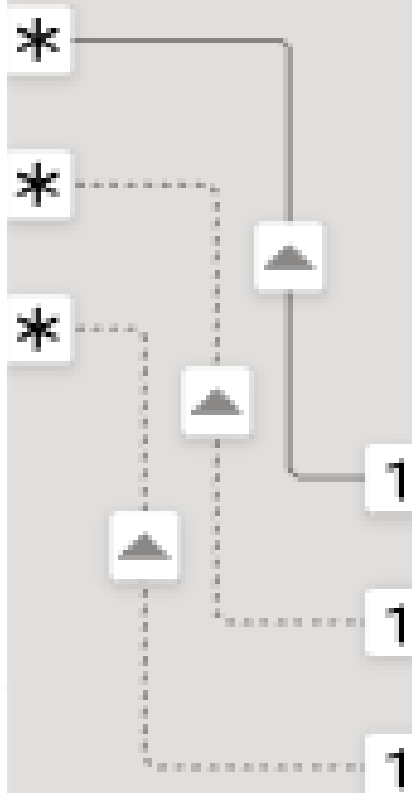


Sales



- CustomerKey
- Σ DueDateKey
- Σ Extended Amount
- Σ Order Quantity
- OrderDateKey
- Σ Product Standard Cost
- ProductKey
- ResellerKey
- Σ Sales Amount

[Collapse](#) ^







Date



- Date
- DateKey
- Fiscal Quarter
- Fiscal Year
- Full Date
- Month
- MonthKey
- Fiscal

A close-up, low-angle shot of a microscope's objective and eyepiece lenses, rendered in a deep blue color scheme. The text "LABORATORIO 1" is overlaid in white, centered horizontally and slightly below the vertical center. A thin white horizontal line is positioned directly beneath the text.

LABORATORIO 1

- ▼  Sales
- ☐  Cost
 - ☐ Σ Extended Amount
 - ☐ Σ Order Quantity
 - ☐ Σ Product Standard Cost
 - ☐  Profit
 - ☐  Revenue
 - ☐ Σ Sales Amount
 - ☐ Σ Total Product Cost
 - ☐ Σ Unit Price
 - ☐ Unit Price Discount Pct

Medidas rápidas

Cálculo

División ▼

Permite calcular la ratio de un valor a otro.
[Más información](#)

Numerador ⓘ

Profit

Denominador ⓘ

Revenue

Quick measures

Calculation

Select a calculation ▼

Quarter-to-date total

Month-to-date total

Year-over-year change

Quarter-over-quarter change

Month-over-month change

Rolling average

Totals

Running total

Total for category (filters applied)

Total for category (filters not applied)

Mathematical operations

Addition

Subtraction

Multiplication

Division

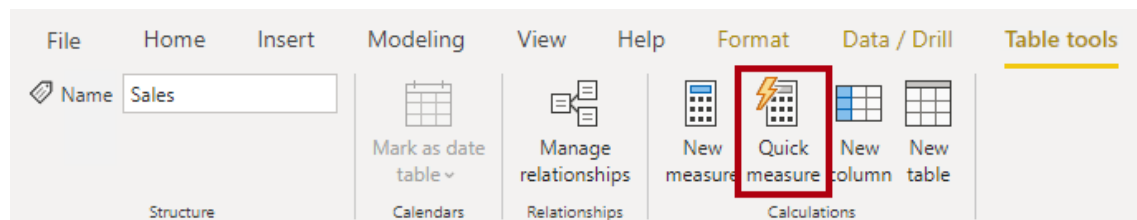
Percentage difference

Correlation coefficient

Text

Star rating

Concatenated list of values



A close-up, low-angle shot of a microscope's objective and eyepiece lenses, rendered in a deep blue color grade. The text 'LABORATORIO 2' is centered over the image.

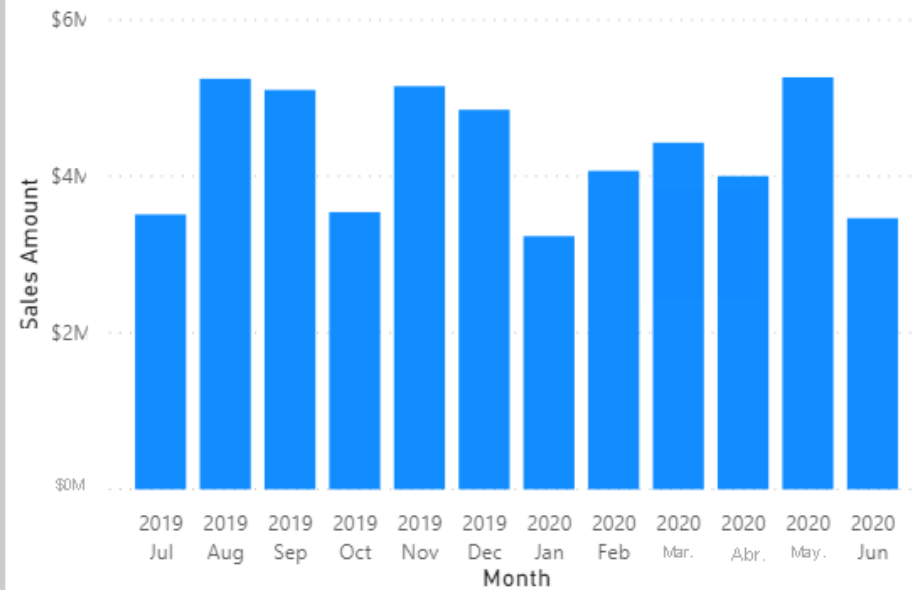
LABORATORIO 2

CONTEXTO

Fiscal Year

- FY2018
- FY2019
- FY2020
- FY2021

Sales Amount by Month



Region	Revenue	Revenue % Total Region
Australia	\$10,655,335.96	9.70%
Canada	\$16,355,770.46	14.89%
Central	\$7,909,009.01	7.20%
France	\$7,251,555.65	6.60%
Germany	\$4,878,300.38	4.44%
Northeast	\$6,939,374.48	6.32%
Northwest	\$16,084,942.55	14.65%
Southeast	\$7,879,655.07	7.18%
Southwest	\$24,184,609.60	22.02%
United Kingdom	\$7,670,721.04	6.99%
Total	\$109,809,274.20	100.00%

Brand	Sales Amount	Red Sales
A. Datum	147,687.44	
Adventure Works	2,761,057.66	60,090.42
Contoso	2,227,244.32	169,266.67
Fabrikam	990,275.08	53,228.82
Litware	506,104.50	15,945.55
Northwind Traders	119,857.67	6,669.86
Proseware	956,335.76	9,732.21
Southridge Video	776,807.78	11,985.40
Tailspin Toys	79,159.15	2,570.08
The Phone Company	1,976,180.03	
Wide World Importers	1,796,930.99	33,112.30
Total	12,337,640.39	382,601.32

Brand = "Contoso"

Brand = "Contoso"
Color = "Red"

```
Red Sales :=
CALCULATE (
    [Sales Amount],
    'Product'[Color] = "Red"
)
```

CALCULATE

```
1 Promedio Modificado Edad de los Conductores =  
2 CALCULATE(AVERAGE(users[Edad al Momento del Accidente]),  
3 users[Birthday]<>BLANK(), -- 1ER FILTRO DONDE EXCLUYE LAS PERSONAS QUE NO TIENEN FECHA DE NACIMIENTO  
4 users[Edad al Momento del Accidente] >18) -- 2DO FILTRO PERSONAS > 18 AÑOS  
5
```

Promedio Simple de las edades de los conductores al momento del accidente.

39.78

Promedio Simple Edad de los Conductores

Promedio modificado por contexto de las edades de los conductores al momento del accidente **siempre y cuando exista una fecha de nacimiento**

40.55

Promedio Modificado Edad de los Conductores

Color

- ☐ Black
- ☐ Blue
- ☐ Grey
- ☐ Multi
- ☐ NA
- ☐ Red
- ☐ Silver
- ☐ Silver/Black
- ☒ White
- ☐ Yellow

EnglishEducation	Sales	Sales All Fact Table
Bachelors	\$89.90	29,358,677.22
Graduate Degree	\$80.91	29,358,677.22
High School	\$62.93	29,358,677.22
Partial College	\$125.86	29,358,677.22
Partial High School	\$26.97	29,358,677.22
Total	\$386.57	29,358,677.22

EnglishPromotionName

- ☐ Half-Price Pedal Sale
- ☐ LL Road Frame Sale
- ☐ Mountain Tire Sale
- ☐ Mountain-100 Cleara
- ☐ Mountain-500 Silver
- ☐ No Discount
- ☐ Road-650 Overstock
- ☐ Sport Helmet Discou
- ☐ Sport Helmet Discou
- ☐ Touring-1000 Promo
- ☐ Touring-3000 Promo
- ☒ Volume Discount 11
- ☐ Volume Discount 15
- ☐ Volume Discount 25
- ☐ Volume Discount 41
- ☐ Volume Discount ove

No Filter

CONTEXTO DE FILTRO

OrderId	Date	Subcategory Id	Geography Id	Units
1	01/01/2022	2	1	2
2	01/01/2022	1	3	1
3	02/01/2022	3	2	3
4	02/01/2022	1	4	2
5	03/01/2022	4	2	4
6	04/01/2022	2	1	3
7	05/01/2022	1	4	1

OrderId	Date	Subcategory Id	Geography Id	Units
1	01/01/2022	2	1	2
2	01/01/2022	1	3	1
3	02/01/2022	3	2	3
4	02/01/2022	1	4	2
5	03/01/2022	4	2	4
6	04/01/2022	2	1	3
7	05/01/2022	1	4	1

Order Id	Date	Subcategory Id	Geography Id	Units
1	01/01/2022	2	1	2
2	01/01/2022	1	3	1
3	02/01/2022	3	2	3
4	02/01/2022	1	4	2
5	03/01/2022	4	2	4
6	04/01/2022	2	1	3
7	05/01/2022	1	4	1

Order Id	Date	Subcategory Id	Geography Id	Units
1	01/01/2022	2	1	2
2	01/01/2022	1	3	1
3	02/01/2022	3	2	3
4	02/01/2022	1	4	2
5	03/01/2022	4	2	4
6	04/01/2022	2	1	3
7	05/01/2022	1	4	1



Geography Id	Country	City
1	Spain	Toledo
2	Spain	Ávila
3	Portugal	Lisbon
4	Portugal	Porto

Order Id	Date	Subcategory Id	Geography Id	Units
1	01/01/2022	2	1	2
2	01/01/2022	1	3	1
3	02/01/2022	3	2	3
4	02/01/2022	1	4	2
5	03/01/2022	4	2	4
6	04/01/2022	2	1	3
7	05/01/2022	1	4	1



Geography Id	Country	City
1	Spain	Toledo
2	Spain	Ávila
3	Portugal	Lisbon
4	Portugal	Porto

Order Id	Date	Subcategory Id	Geography Id	Units
1	01/01/2022	2	1	2
2	01/01/2022	1	3	1
3	02/01/2022	3	2	3
4	02/01/2022	1	4	2
5	03/01/2022	4	2	4
6	04/01/2022	2	1	3
7	05/01/2022	1	4	1

Geography Id	Country	City
1	Spain	Toledo
2	Spain	Ávila
3	Portugal	Lisbon
4	Portugal	Porto

Order Id	Date	Subcategory Id	Geography Id	Units
1	01/01/2022	2	1	2
2	01/01/2022	1	3	1
3	02/01/2022	3	2	3
4	02/01/2022	1	4	2
5	03/01/2022	4	2	4
6	04/01/2022	2	1	3
7	05/01/2022	1	4	1

Geography Id	Country	City
1	Spain	Toledo
2	Spain	Ávila
3	Portugal	Lisbon
4	Portugal	Porto

Order Id	Date	Subcategory Id	Geography Id	Units
1	01/01/2022	2	1	2
2	01/01/2022	1	3	1
3	02/01/2022	3	2	3
4	02/01/2022	1	4	2
5	03/01/2022	4	2	4
6	04/01/2022	2	1	3
7	05/01/2022	1	4	1

<div> ✕ ✓ </div> <div>1 Year = YEAR('Calendar'[Date])</div>	
Date	Year
jueves, 1 de enero de 2015	2015
viernes, 2 de enero de 2015	2015
sábado, 3 de enero de 2015	2015
domingo, 4 de enero de 2015	2015
lunes, 5 de enero de 2015	2015
martes, 6 de enero de 2015	2015
miércoles, 7 de enero de 2015	2015
jueves, 8 de enero de 2015	2015
viernes, 9 de enero de 2015	2015

<div> ✕ ✓ </div> <div>1 Year = YEAR('Calendar'[Date])</div>	
Date	Year
jueves, 1 de enero de 2015	2015
viernes, 2 de enero de 2015	2015
sábado, 3 de enero de 2015	2015
domingo, 4 de enero de 2015	2015
lunes, 5 de enero de 2015	2015
martes, 6 de enero de 2015	2015
miércoles, 7 de enero de 2015	2015
jueves, 8 de enero de 2015	2015
viernes, 9 de enero de 2015	2015

<div> <div>✕ ✓</div> <div> 1 Subcategory Sales = 2 CALCULATE(3 SUM(Sales[Amount]) 4) </div> </div>				
Subcategory Id	Subcategory	Category Id	Category	Subcategory Sales
1	Servers	1	Hardware	149285,1205
2	Monitors	1	Hardware	159865,4967
3	Computers	1	Hardware	42800,4569
4	OS	2	Software	69726,6933
5	CRM	2	Software	45067,8867
6	Tables	3	Furniture	99483,2931
7	Chairs	3	Furniture	87082,0182
8	Racks	3	Furniture	113131,0494
9	Project Management	4	Services	82452,6832
10	Development	4	Services	138052,8701

Subcategory Id	Subcategory	Category Id
1	Servers	1
2	Monitors	1
3	Computers	1
4	OS	2
5	CRM	2
6	Tables	3
7	Chairs	3
8	Racks	3
9	Project Management	4
10	Development	4

<div> <div>✕ ✓</div> <div> 1 Subcategory Sales = SUM(Sales[Amount]) </div> </div>				
Subcategory Id	Subcategory	Category Id	Category	Subcategory Sales
1	Servers	1	Hardware	986947,5681
2	Monitors	1	Hardware	986947,5681
3	Computers	1	Hardware	986947,5681
4	OS	2	Software	986947,5681
5	CRM	2	Software	986947,5681
6	Tables	3	Furniture	986947,5681
7	Chairs	3	Furniture	986947,5681
8	Racks	3	Furniture	986947,5681
9	Project Management	4	Services	986947,5681
10	Development	4	Services	986947,5681

A close-up, low-angle shot of a microscope's objective and eyepiece lenses, rendered in a deep blue monochrome. The lighting creates soft bokeh and highlights the metallic textures of the instrument. The text 'LABORATORIO 3' is centered over the image.

LABORATORIO 3

A close-up photograph of a dark, calm body of water. A wooden branch or log is partially submerged, floating horizontally across the middle-right of the frame. The water's surface is covered in numerous concentric ripples, suggesting recent movement or disturbance. The lighting is soft and diffused, creating a moody, atmospheric scene. The colors are muted, with various shades of blue, grey, and brown.

EJERCICIO 1

DAX ALLSELECTED

Devuelve todas las filas de una tabla o todos los valores de una columna, ignorando cualquier filtro que se haya aplicado dentro de la consulta, pero manteniendo los filtros que provienen del exterior.

Filter/ Slicer- Product Sub Category		Sample Data		
Select all	Office Furnishings	Product Sub-Category	Sales	ALLSELECTED_DAX
Appliances	Office Machines	Appliances	82,201.15	6,36,998.11
Binders and Binder Accessories	Paper	Binders and Binder Accessories	1,85,928.14	6,36,998.11
Bookcases	Pens & Art Supplies	Bookcases	1,07,796.09	6,36,998.11
Chairs & Chairmats	Rubber Bands	Chairs & Chairmats	2,61,072.73	6,36,998.11
Computer Peripherals	Scissors, Rulers and Erasers	Total	6,36,998.11	6,36,998.11
Copiers and Fax	Storage & Organization			
Envelopes	Tables			
Labels	Telephones and Communication			

DAX ALLEXCEPT

Devuelve todas las filas de una tabla excepto aquellas filas que se ven afectadas por los filtros de columna especificados.

Product Category		Product Sub-Category	
Furniture		All	
Product Category	Product Sub-Category	Sales	ALLEXCEPT_SALES
Furniture	Bookcases	1,07,796.09	6,60,704.31
Furniture	Chairs & Chairmats	2,61,072.73	6,60,704.31
Furniture	Office Furnishings	98,070.91	6,60,704.31
Furniture	Tables	1,93,764.58	6,60,704.31
Total		6,60,704.31	6,60,704.31

Product Category		Product Sub-Category	
Furniture		Bookcases	
Product Category	Product Sub-Category	Sales	ALLEXCEPT_SALES
Furniture	Bookcases	1,07,796.09	6,60,704.31
Total		1,07,796.09	6,60,704.31

Avoiding filter for Product Sub Category slicer & returning total sales sum for Product Category furniture.



DAX DISTINCT

La función DISTINCT tiene dos facetas, es decir, tiene dos variantes en su único argumento/parámetro:

- Primera Faceta: En su único parámetro recibe una columna de alguna tabla en el modelo de datos para de allí retornar los valores únicos de dicha columna respetando el contexto de filtro.
- Segunda Faceta: En su único parámetro recibe una expresión de tabla, en tal caso retorna la tabla con las mismas columnas y Remueve filas duplicadas respetando el contexto de filtro

Total Sales YoY Growth % =

```
VAR TotalSales = SUM('Internet Sales'[Sales Amount])
VAR TotalSalesPP =
    CALCULATE(
        SUM('Internet Sales'[Sales Amount]),
        PARALLELPERIOD('Date'[Date], -12, MONTH)
    )
VAR TotalSalesVariance = TotalSales - TotalSalesPP
VAR Result = DIVIDE(TotalSalesVariance, TotalSalesPP)
RETURN
Result
```

```
1 Total Ventas = SUMX( Ventas; Ventas[PRECIO] * Ventas[CANTIDAD] )
```

Producto	Precio	Cantidad	Total Ventas
Mandarina	15	17	255
Melón	20	10	200
Naranja	25	5	125
Total	60	32	580

Sales

CustomerKey

Delivery Date

Order Date

ProductKey

StoreKey

Currency Code

Exchange Rate

Line Number

Net Price

Collapse ^

Product

ProductKey

Subcategory Code

Brand

Color

Manufacturer

Product Code

Product Name

Σ Unit Cost

Σ Unit Price

Collapse ^

Subcategory

Category Code

Subcategory Code

Subcategory

Collapse ^

Category

Category Code

Category

Collapse ^



DAX RELATED TABLES

Devuelve las tablas relacionadas filtradas para que solo incluya las filas relacionadas.

The screenshot shows the SQL Server Data Tools interface. On the left, the 'DimCustomer' table is visible in the 'FactInternetSales' database. On the right, the 'FactInternetSales' table is displayed with a DAX query. The query is as follows:

```
SELECT * FROM FactInternetSales WHERE CustomerID IN (SELECT CustomerID FROM DimCustomer WHERE Country = 'USA')
```

Red arrows indicate the relationship between the 'DimCustomer' table and the filtered rows in the 'FactInternetSales' table. A red box with the text 'Relatedtable (FactInternetSales)' points to the filtered rows.

CustomerID	ProductID	Quantity	UnitPrice	Discount	DiscountAmount	AmountDue
1	1	1	1.00	0.00	0.00	1.00
1	2	1	2.00	0.00	0.00	2.00
1	3	1	3.00	0.00	0.00	3.00
1	4	1	4.00	0.00	0.00	4.00
1	5	1	5.00	0.00	0.00	5.00
1	6	1	6.00	0.00	0.00	6.00
1	7	1	7.00	0.00	0.00	7.00
1	8	1	8.00	0.00	0.00	8.00
1	9	1	9.00	0.00	0.00	9.00
1	10	1	10.00	0.00	0.00	10.00
1	11	1	11.00	0.00	0.00	11.00
1	12	1	12.00	0.00	0.00	12.00
1	13	1	13.00	0.00	0.00	13.00
1	14	1	14.00	0.00	0.00	14.00
1	15	1	15.00	0.00	0.00	15.00
1	16	1	16.00	0.00	0.00	16.00
1	17	1	17.00	0.00	0.00	17.00
1	18	1	18.00	0.00	0.00	18.00
1	19	1	19.00	0.00	0.00	19.00
1	20	1	20.00	0.00	0.00	20.00
1	21	1	21.00	0.00	0.00	21.00
1	22	1	22.00	0.00	0.00	22.00
1	23	1	23.00	0.00	0.00	23.00
1	24	1	24.00	0.00	0.00	24.00
1	25	1	25.00	0.00	0.00	25.00
1	26	1	26.00	0.00	0.00	26.00
1	27	1	27.00	0.00	0.00	27.00
1	28	1	28.00	0.00	0.00	28.00
1	29	1	29.00	0.00	0.00	29.00
1	30	1	30.00	0.00	0.00	30.00
1	31	1	31.00	0.00	0.00	31.00
1	32	1	32.00	0.00	0.00	32.00
1	33	1	33.00	0.00	0.00	33.00
1	34	1	34.00	0.00	0.00	34.00
1	35	1	35.00	0.00	0.00	35.00
1	36	1	36.00	0.00	0.00	36.00
1	37	1	37.00	0.00	0.00	37.00
1	38	1	38.00	0.00	0.00	38.00
1	39	1	39.00	0.00	0.00	39.00
1	40	1	40.00	0.00	0.00	40.00
1	41	1	41.00	0.00	0.00	41.00
1	42	1	42.00	0.00	0.00	42.00
1	43	1	43.00	0.00	0.00	43.00
1	44	1	44.00	0.00	0.00	44.00
1	45	1	45.00	0.00	0.00	45.00
1	46	1	46.00	0.00	0.00	46.00
1	47	1	47.00	0.00	0.00	47.00
1	48	1	48.00	0.00	0.00	48.00
1	49	1	49.00	0.00	0.00	49.00
1	50	1	50.00	0.00	0.00	50.00
1	51	1	51.00	0.00	0.00	51.00
1	52	1	52.00	0.00	0.00	52.00
1	53	1	53.00	0.00	0.00	53.00
1	54	1	54.00	0.00	0.00	54.00
1	55	1	55.00	0.00	0.00	55.00
1	56	1	56.00	0.00	0.00	56.00
1	57	1	57.00	0.00	0.00	57.00
1	58	1	58.00	0.00	0.00	58.00
1	59	1	59.00	0.00	0.00	59.00
1	60	1	60.00	0.00	0.00	60.00
1	61	1	61.00	0.00	0.00	61.00
1	62	1	62.00	0.00	0.00	62.00
1	63	1	63.00	0.00	0.00	63.00
1	64	1	64.00	0.00	0.00	64.00
1	65	1	65.00	0.00	0.00	65.00
1	66	1	66.00	0.00	0.00	66.00
1	67	1	67.00	0.00	0.00	67.00
1	68	1	68.00	0.00	0.00	68.00
1	69	1	69.00	0.00	0.00	69.00
1	70	1	70.00	0.00	0.00	70.00
1	71	1	71.00	0.00	0.00	71.00
1	72	1	72.00	0.00	0.00	72.00
1	73	1	73.00	0.00	0.00	73.00
1	74	1	74.00	0.00	0.00	74.00
1	75	1	75.00	0.00	0.00	75.00
1	76	1	76.00	0.00	0.00	76.00
1	77	1	77.00	0.00	0.00	77.00
1	78	1	78.00	0.00	0.00	78.00
1	79	1	79.00	0.00	0.00	79.00
1	80	1	80.00	0.00	0.00	80.00
1	81	1	81.00	0.00	0.00	81.00
1	82	1	82.00	0.00	0.00	82.00
1	83	1	83.00	0.00	0.00	83.00
1	84	1	84.00	0.00	0.00	84.00
1	85	1	85.00	0.00	0.00	85.00
1	86	1	86.00	0.00	0.00	86.00
1	87	1	87.00	0.00	0.00	87.00
1	88	1	88.00	0.00	0.00	88.00
1	89	1	89.00	0.00	0.00	89.00
1	90	1	90.00	0.00	0.00	90.00
1	91	1	91.00	0.00	0.00	91.00
1	92	1	92.00	0.00	0.00	92.00
1	93	1	93.00	0.00	0.00	93.00
1	94	1	94.00	0.00	0.00	94.00
1	95	1	95.00	0.00	0.00	95.00
1	96	1	96.00	0.00	0.00	96.00
1	97	1	97.00	0.00	0.00	97.00
1	98	1	98.00	0.00	0.00	98.00
1	99	1	99.00	0.00	0.00	99.00
1	100	1	100.00	0.00	0.00	100.00

A close-up, blue-tinted photograph of a microscope. The focus is on the objective lens and the stage, with the eyepiece and other parts blurred in the background. The lighting is soft, creating a professional and scientific atmosphere.

LABORATORIO 4

A close-up photograph of a dark, calm body of water. A weathered wooden branch or log floats horizontally across the middle-right of the frame. The water's surface is covered in numerous concentric ripples, suggesting recent movement or rain. The lighting is soft and diffused, creating a moody, atmospheric scene. The colors are muted, with various shades of blue, grey, and brown.

EJERCICIO 2

TIME INTELLIGENCE

Year	Revenue	Revenue YTD
FY2018	\$23,860,891.17	\$23,860,891.17
2017 Jul	\$1,423,357.32	\$1,423,357.32
2017 Aug	\$2,057,902.45	\$3,481,259.78
2017 Sep	\$2,523,947.55	\$6,005,207.32
2017 Oct	\$561,681.48	\$6,566,888.80
2017 Nov	4,764,920.16	\$11,331,808.96
2017 Dec	\$596,746.56	\$11,928,555.52
2018 Jan	\$1,327,674.63	\$13,256,230.15
2018 Feb	\$3,936,463.31	\$17,192,693.45
2018 Mar	\$700,873.18	\$17,893,566.64
2018 Apr	\$1,519,275.24	\$19,412,841.88
2018 May	\$2,960,378.09	\$22,373,219.97
2018 Jun	\$1,487,671.19	\$23,860,891.17
FY2019	\$34,070,108.50	\$34,070,108.50
2018 Jul	\$2,939,691.00	\$2,939,691.00
2018 Aug	\$3,964,801.20	\$6,904,492.20
2018 Sep	\$3,287,605.93	\$10,192,098.13

Resúmenes a lo largo del tiempo

Un grupo de las funciones de inteligencia de tiempo de DAX está relacionado con los resúmenes a lo largo del tiempo:

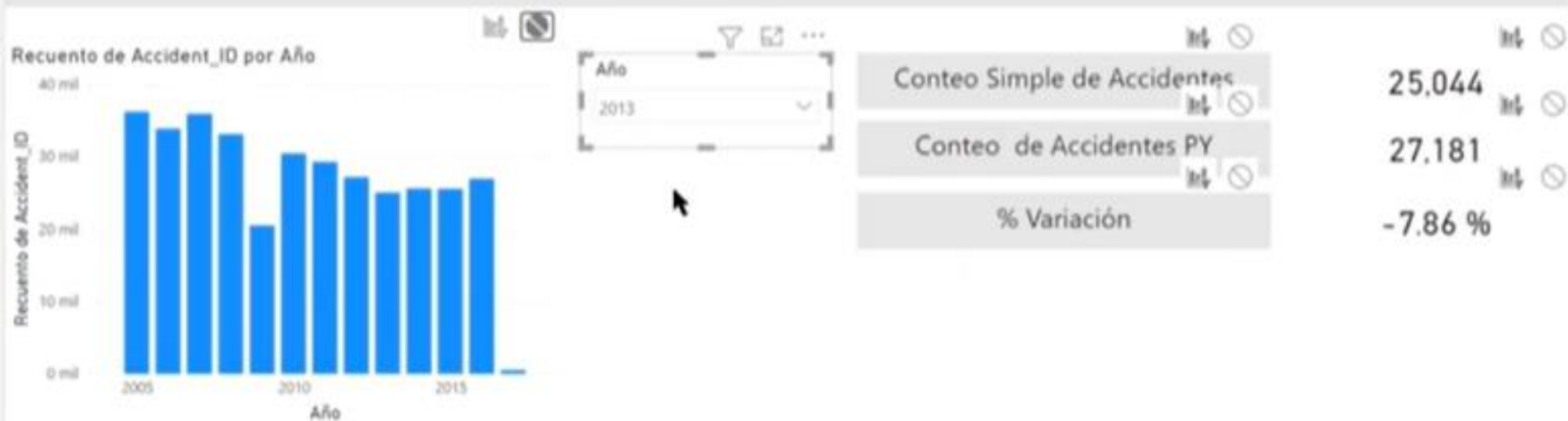
- **DATESYTD**: devuelve una tabla de una sola columna que contiene las fechas para anual hasta la fecha (YTD) en el contexto de filtro actual. En este grupo también se incluyen las funciones **DATESMTD** y **DATESQTD** de DAX para mes hasta la fecha (MTD) y trimestre hasta la fecha (QTD). Puede pasar estas funciones como filtros en la función **CALCULATE** de DAX.
- **TOTALYTD**: evalúa una expresión para YTD en el contexto de filtro actual. También se incluyen las funciones QTD y MTD de DAX de **TOTALQTD** y **TOTALMTD**.
- **DATESBETWEEN**: devuelve una tabla que contiene una columna de fechas que empieza con una fecha de inicio determinada y sigue hasta una fecha de finalización concreta.
- **DATESINPERIOD**: devuelve una tabla que contiene una columna de fechas que comienza con una fecha de inicio determinada y continúa con un número de intervalos especificado.

Comparaciones a lo largo del tiempo

Otro grupo de las funciones de inteligencia de tiempo de DAX se relaciona con el desplazamiento de períodos de tiempo:

- **DATEADD**: devuelve una tabla que contiene una columna de fechas, desplazada cada una de ellas hacia delante o hacia atrás en el tiempo de acuerdo con el número especificado de intervalos de fechas en el contexto de filtro actual.
- **PARALLELPERIOD**: devuelve una tabla que contiene una columna de fechas que representa un período que es paralelo a las fechas de la columna de fechas especificada, en el contexto de filtro actual, con las fechas desplazadas varios intervalos hacia adelante o hacia atrás en el tiempo.
- **SAMEPERIODLASTYEAR**: devuelve una tabla que contiene una columna de fechas que se desplaza un año atrás con respecto a las fechas de la columna de fechas especificada en el contexto de filtro actual.
- Muchas funciones auxiliares de DAX para ir hacia atrás o hacia delante en períodos de tiempo específicos, todas las cuales devuelven una tabla de fechas. Estas funciones auxiliares incluyen **NEXTDAY**, **NEXTMONTH**, **NEXTQUARTER**, **NEXTYEAR** y **PREVIOUSDAY**, **PREVIOUSMONTH**, **PREVIOUSQUARTER** y **PREVIOUSYEAR**.

Cuantifica la cantidad de accidentes que ocurrieron en 2016 y determina el porcentaje de incremento / decremento vs el año previo (2015)



MEDIA MOVIL



A close-up, blue-tinted photograph of a microscope. The focus is on the objective lens and the stage, with the eyepiece visible in the background. The lighting is soft, creating a professional and scientific atmosphere.

LABORATORIO 5

Year	Revenue	Revenue YTD	Revenue YoY %	New Customers
☐ FY2018	\$23,860,891.17	\$23,860,891.17		2,459
2017 Jul	\$1,423,357.32	\$1,423,357.32		289
2017 Aug	\$2,057,902.45	\$3,481,259.78		159
2017 Sep	\$2,523,947.55	\$6,005,207.32		161
2017 Oct	\$561,681.48	\$6,566,888.80		174
2017 Nov	\$4,764,920.16	\$11,331,808.96		230
2017 Dec	\$596,746.56	\$11,928,555.52		188
2018 Jan	\$1,327,674.63	\$13,256,230.15		193
2018 Feb	\$3,936,463.31	\$17,192,693.45		177
2018 Mar	\$700,873.18	\$17,893,566.64		219
2018 Apr	\$1,519,275.24	\$19,412,841.88		202
2018 May	\$2,960,378.09	\$22,373,219.97		222
2018 Jun	\$1,487,671.19	\$23,860,891.17		245

Year	Revenue	Revenue YTD	Revenue YoY %	Customers LTD
☐ FY2018	\$23,860,891.17	\$23,860,891.17		2,459
2017 Jul	\$1,423,357.32	\$1,423,357.32		289
2017 Aug	\$2,057,902.45	\$3,481,259.78		448
2017 Sep	\$2,523,947.55	\$6,005,207.32		609
2017 Oct	\$561,681.48	\$6,566,888.80		783
2017 Nov	\$4,764,920.16	\$11,331,808.96		1,013
2017 Dec	\$596,746.56	\$11,928,555.52		1,201
2018 Jan	\$1,327,674.63	\$13,256,230.15		1,394
2018 Feb	\$3,936,463.31	\$17,192,693.45		1,571
2018 Mar	\$700,873.18	\$17,893,566.64		1,790
2018 Apr	\$1,519,275.24	\$19,412,841.88		1,992
2018 May	\$2,960,378.09	\$22,373,219.97		2,214
2018 Jun	\$1,487,671.19	\$23,860,891.17		2,459

A close-up photograph of a dark, calm body of water. A wooden branch or log is partially submerged, floating horizontally across the middle-right of the frame. The water's surface is covered in numerous concentric ripples, suggesting recent movement or rain. The lighting is soft and diffused, creating a moody, atmospheric scene. The colors are muted, with various shades of blue, grey, and brown.

EJERCICIO 3

DAX GROUP BY

GROUPBY se usa para realizar varias agregaciones en un solo recorrido de tabla.

```
GROUPBY (  
    TableName,  
    [GroupingColumn1],  
    [GroupingColumn2],  
    ...  
    [GroupingColumnN],  
    "NewColumnName",  
    [Aggregation1],  
    [Aggregation2],  
    ...  
    [AggregationN]  
)
```

DAX Mínimo

La función MINX retorna el valor más pequeño de todos los valores parciales que «salieron» como resultado de una expresión que se evalúa fila a fila en una tabla



```
MinimumSalesAmount =  
MIN(SalesData[SalesAmount])
```

DAX Máximo

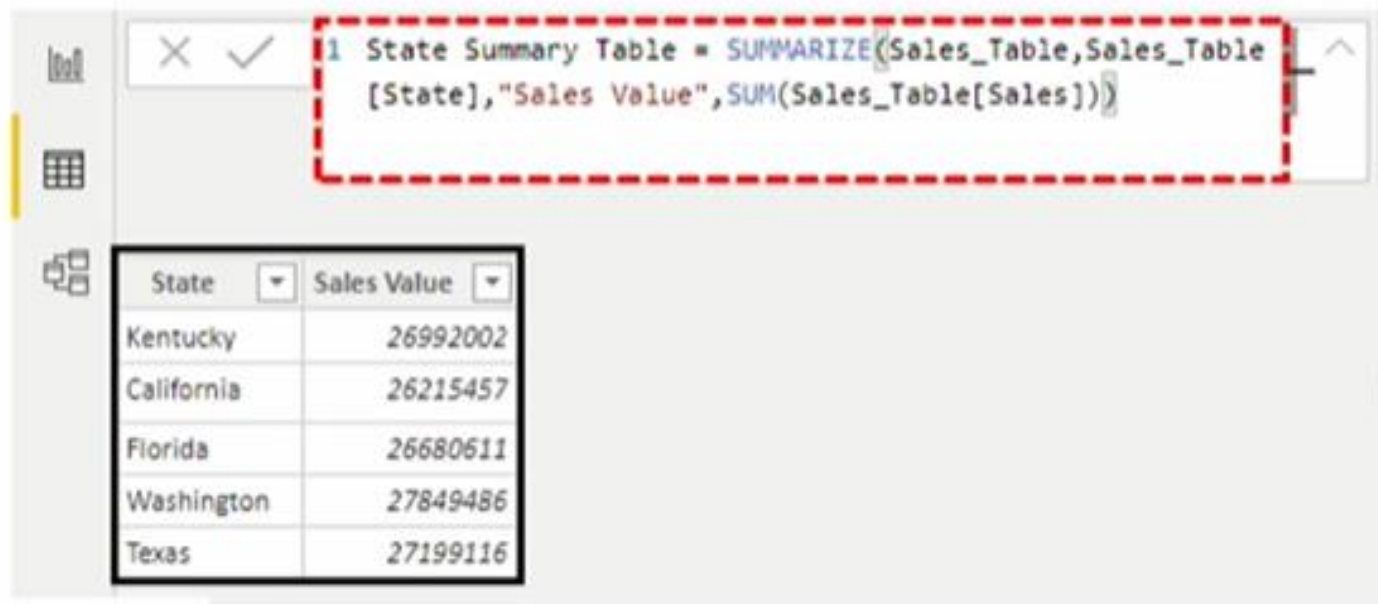
La función MAXX retorna el valor más grande de todos los valores parciales que «salieron» como resultado de una expresión que se evalúa fila a fila en una tabla



```
MaximumSalesAmount =  
MAX(SalesData[SalesAmount])
```

DAX SUMMARIZE

Crea un resumen de la tabla de entrada agrupada por las columnas especificadas.



The screenshot shows the DAX Studio interface. At the top, a formula bar contains the following DAX formula, which is highlighted with a red dashed border:

```
1 State Summary Table = SUMMARIZE(Sales_Table, Sales_Table[State], "Sales Value", SUM(Sales_Table[Sales]))
```

Below the formula bar, a table is displayed with the following data:






State	Sales Value
Kentucky	26992002
California	26215457
Florida	26680611
Washington	27849486
Texas	27199116

A close-up photograph of a dark, calm body of water. A wooden branch or log is partially submerged, floating horizontally across the middle-right of the frame. The water's surface is covered in numerous concentric ripples, suggesting recent movement or disturbance. The lighting is soft and diffused, creating a moody, atmospheric scene. The colors are muted, with various shades of blue, grey, and brown.

EJERCICIO 4

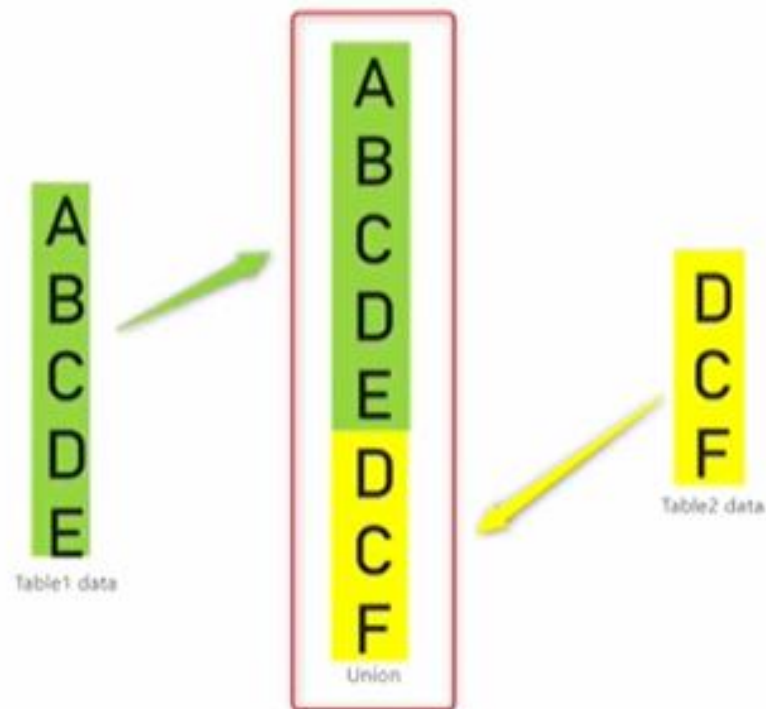
DAX ROW

Devuelve una tabla de una sola fila con nuevas columnas especificadas por las expresiones DAX.

	 	<pre>1 Table = ROW("Total Sales", SUM(Orders[Sales]), 2 "Total Profit", SUM(Orders[Profit]), 3 "Total Discount", SUM(Orders[Discount]))</pre>		
		Total Sales ▼	Total Profit ▼	Total Discount ▼
		12642502	1467457.29127999	7329.728

DAX UNION

Devuelve la unión de las tablas cuyas columnas coinciden.



DAX GENERATESERIES

Devuelve una tabla con una columna, rellena con valores secuenciales de principio a fin.

Parameter Percentage = GENERATESERIES (0, 1, 0.01)	
Value	
0.79	
0.8	
0.8100000000000001	
0.8200000000000001	
0.8300000000000001	

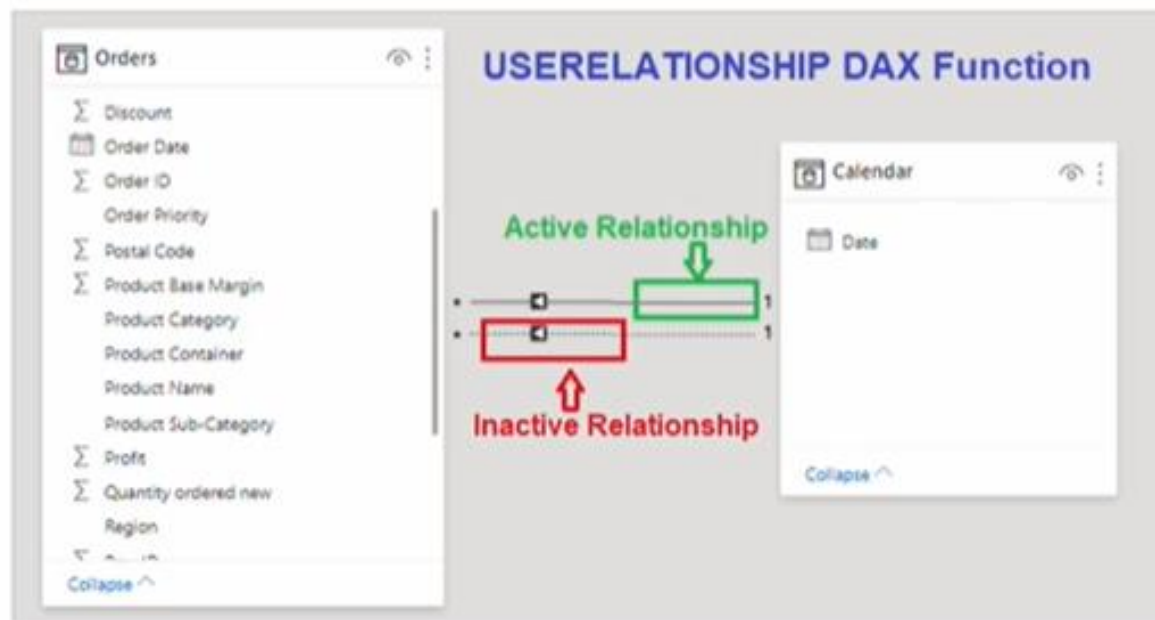
DAX SELECTCOLUMNS

Devuelve una tabla con columnas seleccionadas de la tabla y nuevas columnas especificadas por las expresiones DAX.



DAX USERELATIONSHIP

Especifica una relación existente que se usará en la evaluación de una expresión DAX. La relación se define nombrando, como argumentos, las dos columnas que sirven como puntos finales.



A close-up photograph of a dark, calm body of water. A wooden branch or log is partially submerged, floating horizontally across the middle-right of the frame. The water's surface is covered in numerous concentric ripples, suggesting recent movement or rain. The lighting is soft and diffused, creating a moody, atmospheric scene. The colors are muted, with various shades of blue, grey, and brown.

EJERCICIO 5