

MS Power BI Formulae

PCWorkshops



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Entering a Formula

- $\text{SalesMinusDiscount} = \text{Orders}[\text{Sales}] - \text{Orders}[\text{Discount}]$

Formula: Create a New Column

The screenshot shows the Microsoft Power BI Desktop interface. The 'Modeling' ribbon is active, and the 'New Column' button is highlighted with a red circle. A red arrow points from this button to the 'Column =' header of a new column in a data table. The table contains the following data:

CategoryID	CategoryName	Description	AvgPrice	Column
1	Beverages	Soft drinks, coffees, teas, beers, and ales	£58.75	
2	Condiments	Sweet and savory sauces, relishes, spreads, and seasonings	£58.29	
3	Confections	Desserts, candies, and sweet breads	£53.77	
4	Dairy Products	Cheeses	£62.00	
5	Grains/Cereals	Breads, crackers, pasta, and cereal	£62.14	
6	Meat/Poultry	Prepared meats	£57.00	
7	Produce	Dried fruit and bean curd	£51.80	
8	Seafood	Seaweed and fish	£54.25	

String Functions

<https://docs.microsoft.com/en-us/dax/text-functions-dax>

Trim, Upper, Lower, Left, Right, Substitute

- UpperCase = **UPPER**(Orders[Customer Name])
- LowerCase = **LOWER**(Orders[Customer Name])
- NewProductName = **SUBSTITUTE**(Orders[Product Name], "Machine", "Apparatus")
- Initial = **LEFT**(Orders[Customer Name] , 1) -- returns a string of 1 character from left of contactname e.g. John => J
- Right Col = **RIGHT**(Orders[Customer Name] , 3) -- Johnny => nny

Post Code Exercise

- PosOfSpace = **FIND**(" ", Orders[**NEWPC**], 1 , 0)
 - --- MK1 3PP -- SW1v 6yh -- m1 5rt
- FirstPartOfPC = **LEFT**(Orders[**NEWPC**], Orders[PosOfSpace] - 1)
 - -- m1 5rt
- LastPartOfPC = **RIGHT**(Orders[**NEWPC**] , **len**(Orders[**NEWPC**]) - Orders[PosOfSpace])
 - -- MK1 3PP 7 - 4

DAX: If

- daxIf = `if(month(Orders[OrderDate])= 1, "January", "Unknown month number")`

DAX: If Exercise

- On the suppliers table:
- If the country=USA,
- then postcode = zz001
- otherwise postcode = sw1v 1er
- NewPc
- = if(country="United States", "zz001", "sw1v 1er")

Date Functions

<https://docs.microsoft.com/en-us/dax/date-and-time-functions-dax>

Datepart

- YearPart = **Year** (Orders[Order Date])
- MonthOfDate = **Month** (Orders[Order Date])
- DayOfDate = **Day** (Orders[Order Date])
- HourOfDate = **Hour** (Orders[Order Date])
- Quarter = **Quarter** (Orders[Order Date])

Date Functions

<https://docs.microsoft.com/en-us/dax/date-and-time-functions-dax>

- WeekNum = **WEEKNUM** (orders[order date])
 - --- Weeknumber (between 1 and 52)
- WeekDay = **WEEKday** (orders[order date])
 - --- Day of the week in a number from 1 to 7

Calculate a New Date

EOMONTH

- EO_ThisMonth = **EOMONTH** (orders[order date] , 0)
 - -- returns the last date of the month
- EO_NextMonth = **EOMONTH** (orders[order date] , 1)
- EO_MonthAfterNext = **EOMONTH**(orders[order date],2)

Calculate a New Date

EDATE

- AddMonths = **Edate** (orders[order date] , 3) --
returns the date exactly 3 months from the order date
- Financial Quarter = **QUARTER** (**Edate** (orders[order date] , -3))

Calculate a New Date: DateAdd

- Dateadd -- returns a date
- ExpireFreeTrial = **DATEADD**(Orders[Order Date] , 7, day)
- -- year, quarter, month, day
- Retire = **DATEADD**(**date**(1990, 3,22), **67** , year) --
year, quarter, month, day

Date intervals: Datediff

- Calculate the interval between 2 dates
- Datediff -- returns an integer
- DaysTillChristmas = **DATEDIFF(today() , date(2022,12,25), day)**
 - -- year, quarter, month, day
- Age = **DATEDIFF(date(1990, 3,22), today() , year)**
 - -- year, quarter, month, day

DAX: Switch

- daxSwitch =
SWITCH(month(Orders[OrderDate]), 1,
"January", 2, "February", 3, "March", 4,
"April", 5, "May", 6, "June", 7, "July",
8, "August", 9, "September", 10,
"October", 11, "November", 12, "December",
"Unknown month number")

DAX: Switch exercise

- On the employees table, if the month is:
 - January, “Flowers”
 - February, Chocolate
 - March, book
 - April, movie
 - May, music
 - June, Holiday
 - July, new car
 - All others

New Quick Measure

- Select a column name
- Right click
- Select New Quick Measure

Dax: iseven etc

- ISBLANK
- ISEMPTY
- ISERROR
- ISEVEN
- ISNONTEXT
- ISNUMBER
- ISODD
- ISTEXT
- NONVISUAL

Dax: ceiling tce

- **ROUND**(<number>, <num_digits>)
- **ROUNDDOWN**(<number>, <num_digits>)
- **ROUNDUP**(<number>, <num_digits>)
- **TRUNC**(<number>, <num_digits>)

- COUNT(<column>)
- COUNTBLANK(<column>)
- COUNTa(<column>)
- COUNTrows([<table>])

Dax: Calculate

- priceCoalesce =
COALESCE(SUM(Products[Price]), 0)
- [SWITCH function \(DAX\) - DAX | Microsoft Learn](#)

New Quick Measure

The screenshot displays the PowerBI Desktop interface with the 'Quick measures' dialog box open. The 'Calculation' list on the left includes options like 'Year-to-date total', 'Quarter-to-date total', and 'Rolling average'. The 'Fields' list on the right shows 'Ordersold'[Region] selected. The background report features two visualizations: 'Year over Year' and 'Rolling avg by month'.

Year over Year
Select sales and ship date

Year	Sales
2011	2
2012	2
2013	3
2014	4
2015	4
Total	12

Rolling avg by month

Year	Month	Sales	Sales rolling average
2011	January	86917.34	
2011	February	96300.77	
2011	March	134792.86	
2011	April	121193.05	
2011	May	139563.73	
Total		12642563.29	

Don't see the calculation you want? [Post an idea.](#)

OK Cancel

UPDATE AVAILABLE (CLICK TO DOWNLOAD)

16:54
02/03/2022

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Dax: Sumx

- QtySold = sumx(RELATEDTABLE(Orderdetails),
Orderdetails[Quantity])
- Revenue = sumx(RELATEDTABLE(Orderdetails),
(Orderdetails[Quantity] * Products[Price]))
-

Dax: Countx

- CountOrders =
COUNTX(RELATERDTABLE(Orderdetails),
Orderdetails[OrderID])

Exercise : Dax, countx, sum

- Count the number of orders per employee
- Count the number of orders per customers
- Use a filter on productname:
- Sum the total qty ordered by an employee
- Sum the total qty ordered for a category
- Count the number of orders in a year
- Count the number of orders in a month

Exercise : Dax, countx, sum

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Dax: Calculate

- Calculate the sum qty, where the category id = 1
- Calculate the average price, where the county = UK
- Calculate the sum qty, where the county = USA
- [SWITCH function \(DAX\) - DAX | Microsoft Learn](#)

Transform data

- Transpose
- Merge
- Append
- Group by
- First row as headers
-
- Drill Down
- Drill through
- Parameters: [Using Parameters in Power BI \(mssqltips.com\)](https://mssqltips.com)