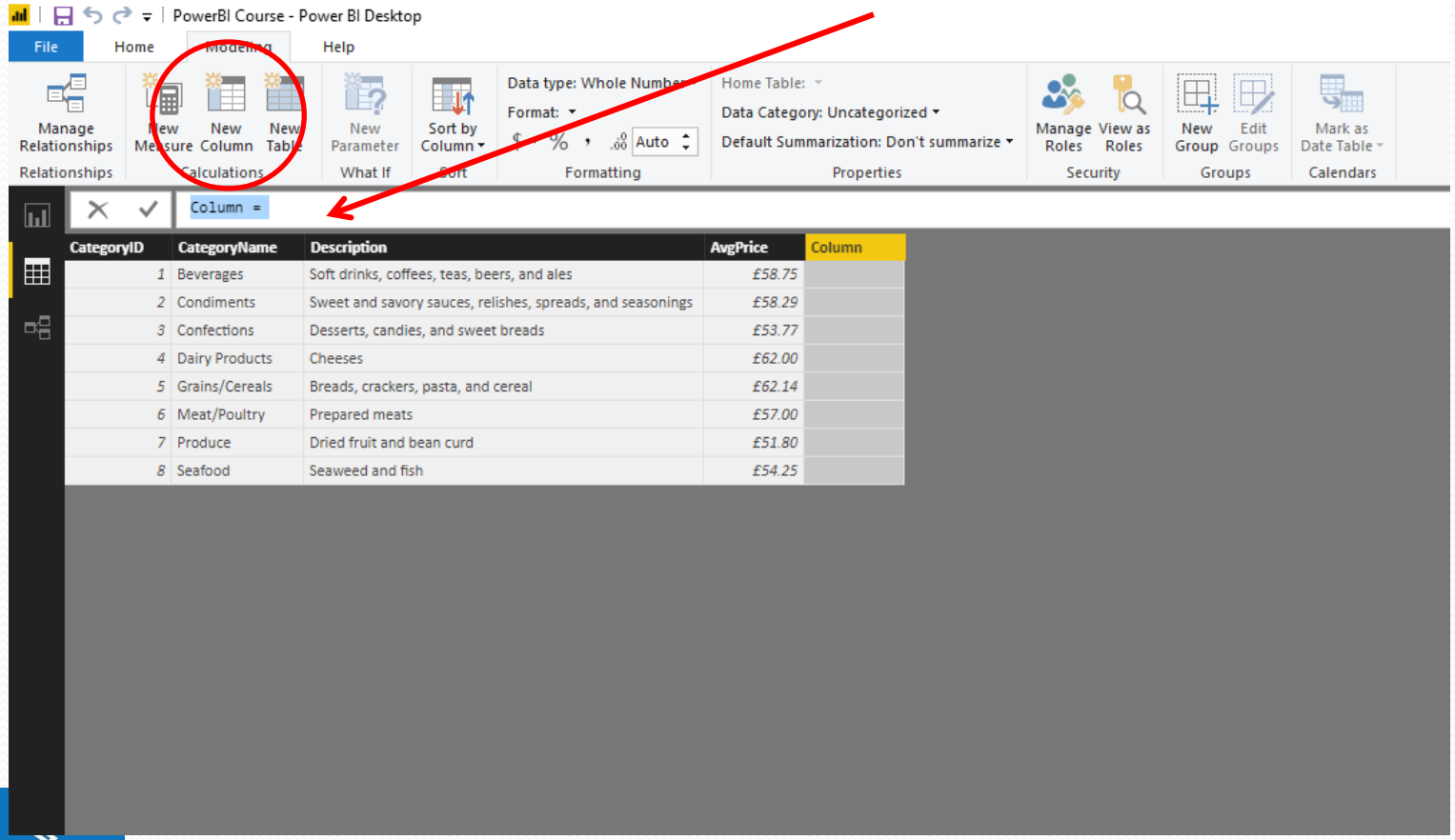
MS Power BI Formulae

PCWorkshops

Entering a Formula

- SalesMinusDiscount = Orders[Sales] - Orders[Discount]

Formula: Create a New Column



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

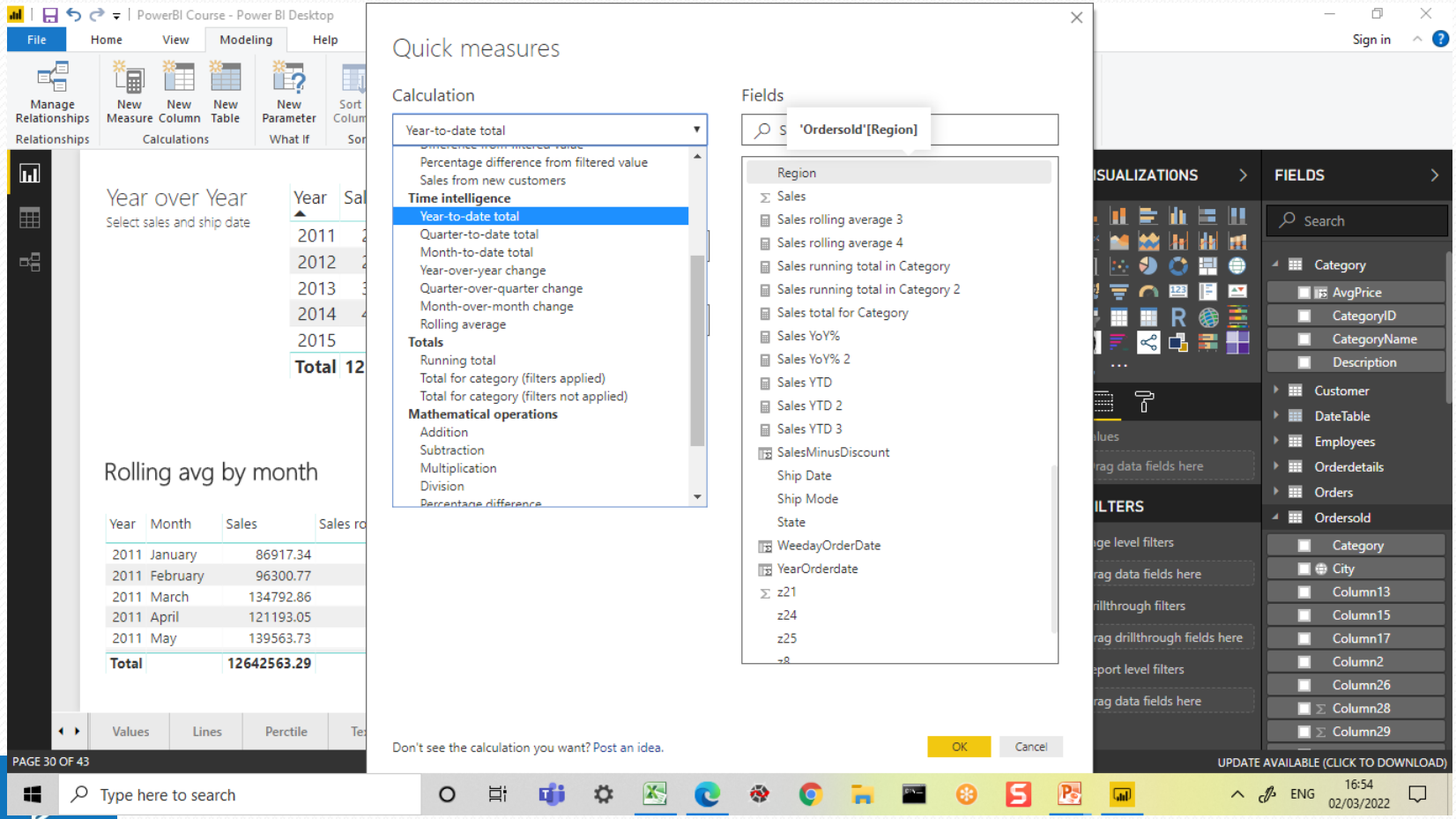
Date intervals: Datediff

- 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



Dax: Sumx

- QtySold = sumx(RELATEDTABLE(Orderdetails), Orderdetails[Quantity])

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

-

Dax: Countx

- CountOrders = COUNTX(RELATEDTABLE(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)