

DAX Workshop

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What is DAX

Introduction to DAX

What is DAX?

Data Analysis Expressions

Expression Language for Power BI, Power Pivot and
SSAS Tabular

DAX

Why DAX?

Designed to Support a Larger User Base

Simpler than Traditional Technical Languages to Learn

Leverage Existing Knowledge of Excel Formulas

Less of a Learning Curve for Analyst



What is DAX Used For?



Calculated Columns

Create New Columns on a table

Method for Connecting Disparate Data Sources with Multiple Key Columns

Calculated Measures

Create Dynamic Calculations for Reporting
Time Intelligence

Calculated Tables

Create a new table derived from another table

Can be used to create a date table when one doesn't exist already

Navigation Functions

Similar to VLOOKUP in EXCEL or a JOIN in SQL

Navigation Functions

RELATED

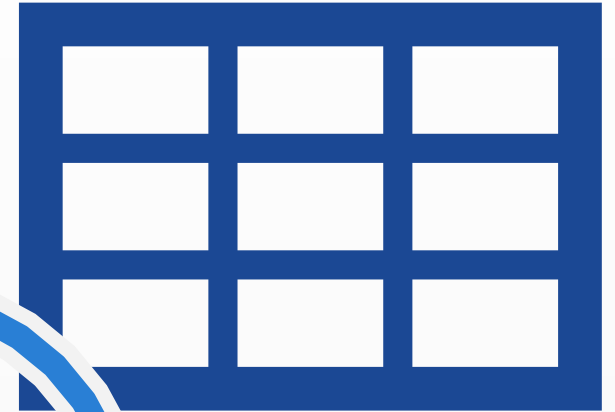
Returns a value from a connected table

RELATEDTABLE

Returns a table from a connected table

Requirements

Relationship must exist for these to work



Demo

Let's Write DAX!



Creating Calculated Measures

Filter Context

CALCULATE

Time Intelligence Functions

Semi-Additive Measures

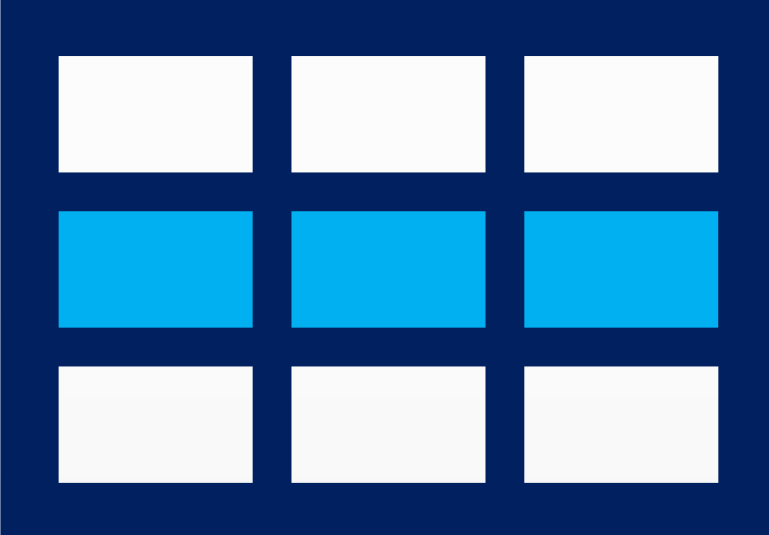
Filter Context

Applied by Filter Constraints

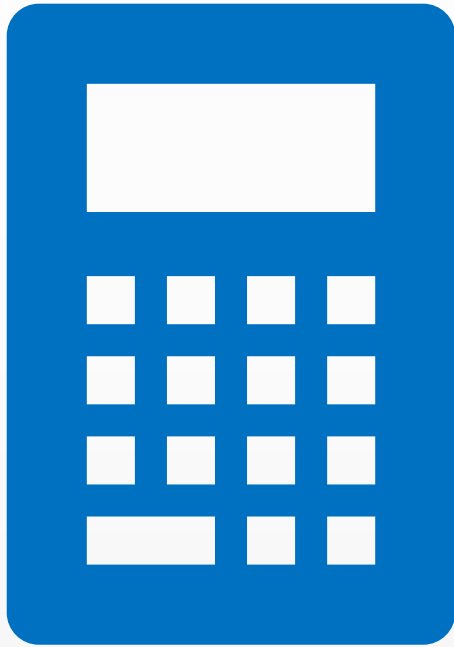
Row and Column Headers

Slicers and Filters

DAX Formula Filters



Calculate



Why Calculate?

Apply a filter(s) to an expression.

Ratios / Percent of Totals

Syntax

`CALCULATE(<expression>,<filter1>,<filter2>...)`

Expression is an aggregate

Filters Add to or Override Filter Context

```
ResellerSales:=CALCULATE([TotalSales],Store[StoreType]="Reseller")
```

```
AllProductSales:=CALCULATE([TotalSales], ALL(Product))
```

Semi-Additive Measures

Inventory Levels

Account Balances



Time Intelligence in DAX

Comparing Data over Time

Year-to-Date

Prior Year

Year Over Year

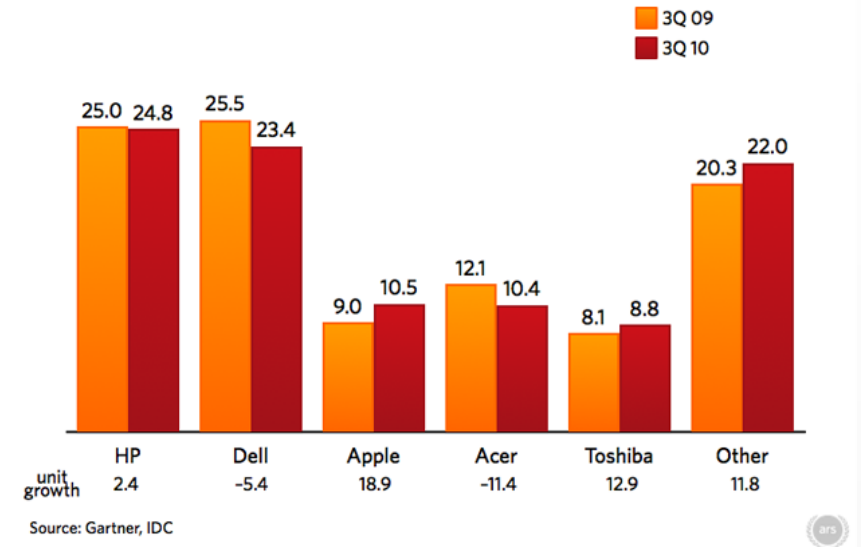
Requirements

Date Table

One Row for Every Date (No gaps)

Span Range of Possible Dates

US PC market share: 3Q 09 vs 3Q 10
Percent



Time Intelligence Functions

CLOSINGBALANCEMONTH
CLOSINGBALANCEQUARTER
CLOSINGBALANCEYEAR
DATESINPERIOD
DATESBETWEEN
DATEADD
FIRSTDATE
LASTDATE
LASTNONBLANKDATE
STARTOFMONTH
STARTOFQUARTER
STARTOFYEAR

ENDOFMONTH
ENDOFQUARTER
ENDOFYEAR
PARALLELPERIOD
PREVIOUSDAY
PREVIOUSMONTH
PREVIOUSQUARTER
PREVIOUSYEAR
NEXTDAY
NEXTMONTH
NEXTQUARTER
NEXTYEAR

DATESMTD
DATESQTD
DATESYTD
SAMEPERIODLASTYEAR
OPENINGBALANCEMONTH
OPENINGBALANCEQUARTER
OPENINGBALANCEYEAR
TOTALMTD
TOTALQTD
TOTALYTD



Demo

Calculated Measures

Pragmatic Works Training:

Live Virtual training events: DAX Boot Camps

On-Demand Learning

20% OFF On-Demand Learning with Coupon Code: DAX20



<https://tinyurl.com/PragmaticWorksTraining>



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