

RELATED

Power BI RELATED Function

In MS-Excel we all have done the task of fetching data from one table to another, so in such cases, VLOOKUP is the household formula for all the excel users. Without using VLOOKUP at their workplace most excel users won't end up there. The value of the VLOOKUP function in MS Excel has been stated, can we replicate the same formula in Power BI? We have a different formula, not exactly the VLOOKUP formula i.e. RELATED DAX Function. In this article, we will take you through one of the important RELATED DAX functions in Power BI.

What Does RELATED Function Do in Power BI?

RELATED as the name itself says it will return the related value one table to another table. This is similar to the lookup value function we have in MS Excel i.e. VLOOKUP.

However, in Power BI before we apply this DAX function, we need to create a data model relationship between tables we are referring to.

Below is the syntax of the RELATED DAX function in Power BI.

```
RELATED(  
RELATED(ColumnName)  
Returns a related value from another table.
```

We just need to select the result column from the other table and it will fetch the details for us. If you are finding it difficult to understand with this theoretical explanation don't worry because in the below, we will give you practical examples in detail.

RELATED Function in Power BI

Column = Product_Table[Units Sold] * RELATED(Price_Table[Price])

Product	Sales Rep	Units Sold	Units Cost	Total Value	Column
Keyboard	John	46	40	1840	1840
Laptop	Peter	27	85	2295	2295
Mouse	Roger	47	10	470	470
Dekstop	Roger	48	12	576	576
CPU	John	31	20	620	620
Hard Disk	Peter	34	25	850	850
Monitor	John	35	22	770	770
RAM	Peter	39	33	1287	1287
Processor	Roger	44	24	1056	1056
Keyboard	John	37	40	1480	1480
Laptop	Peter	41	85	3485	3485
Mouse	Roger	16	10	160	160

Syntax

```
RELATED(
RELATED(ColumnName)
Returns a related value from another table.
```

Example of RELATED Function in Power BI

To demonstrate RELATED DAX function in Power BI, we have prepared below two data tables in excel worksheet.

Below are examples of the RELATED function in Power BI. You can download the workbook to use the same file as we used in this example.

	A	B	C	D	E	F	G	H
1	Product	Sales Rep	Units Sold		Product	Price		
2	Keyboard	John	46		Keyboard	40		
3	Laptop	Peter	27		Laptop	85		
4	Mouse	Roger	47		Mouse	10		
5	Dekstop	Roger	48		Dekstop	12		
6	CPU	John	31		CPU	20		
7	Hard Disk	Peter	34		Hard Disk	25		
8	Monitor	John	35		Monitor	22		
9	RAM	Peter	39		RAM	33		
10	Processor	Roger	44		Processor	24		
11	Keyboard	John	37					
12	Laptop	Peter	41					
13	Mouse	Roger	16					
14	Dekstop	John	25					
15	CPU	Peter	49					
16	Hard Disk	Roger	16					
17	Monitor	John	50					
18	RAM	Peter	25					
19	Processor	Roger	35					

Price Table

Product Table

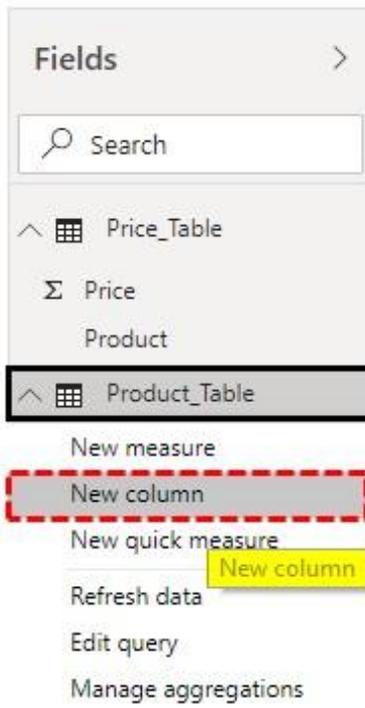
Above we have two tables "Product Table" and "Price Table". In "Product Table" we have product name and units sold details with the "Sales Rep" name for each product.

- In the "Price Table," we have product name and their price per unit values, so we will use the RELATED function to fetch the price details to "Product Table". Upload the above two table data to the Power BI Desktop file.

Product	Price
Keyboard	40
Laptop	85
Mouse	10
Dekstop	12
CPU	20
Hard Disk	25
Monitor	22
RAM	33
Processor	24

The screenshot shows the Power BI Desktop interface. On the left, a table with two columns, 'Product' and 'Price', is displayed. The 'Product' column lists various items like Keyboard, Laptop, Mouse, Dekstop, CPU, Hard Disk, Monitor, RAM, and Processor. The 'Price' column shows corresponding values: 40, 85, 10, 12, 20, 25, 22, 33, and 24. On the right, the 'Fields' pane is visible, showing a search bar and a list of tables: 'Price_Table' and 'Product_Table'. The 'Price_Table' table is currently selected, showing its fields: 'Price' and 'Product'.

- Now from "Price_Table" we need to fetch the cost price of each product to the "Product_Table". Right-click on the "Product_Table" and choose the option of "New Column".



- Now give the name for the new column as Units Cost.

1 Units Cost =			
Product	Sales Rep	Units Sold	Units Cost
Keyboard	John	46	
Laptop	Peter	27	
Mouse	Roger	47	
Dekstop	Roger	48	
CPU	John	31	
Hard Disk	Peter	34	
Monitor	John	35	
RAM	Peter	39	
Processor	Roger	44	
Keyboard	John	37	
Laptop	Peter	41	
Mouse	Roger	16	
Dekstop	John	25	
CPU	Peter	49	
Hard Disk	Roger	16	
Monitor	John	50	
RAM	Peter	25	
Processor	Roger	35	

- Open RELATED function in power BI.

1 Unit Price = RELATED(
Product	Sales Rep	Units	RELATED(ColumnName)
Keyboard	John	46	
Laptop	Peter	27	
Mouse	Roger	47	
Dekstop	Roger	48	
CPU	John	31	
Hard Disk	Peter	34	
Monitor	John	35	
RAM	Peter	39	
Processor	Roger	44	
Keyboard	John	37	
Laptop	Peter	41	
Mouse	Roger	16	
Dekstop	John	25	
CPU	Peter	49	
Hard Disk	Roger	16	
Monitor	John	50	
RAM	Peter	25	
Processor	Roger	35	

RELATED(ColumnName)
Returns a related value from another table.

We need to choose the column from the **“Price_Table”** but when you type the table name, we don't see any related searches.

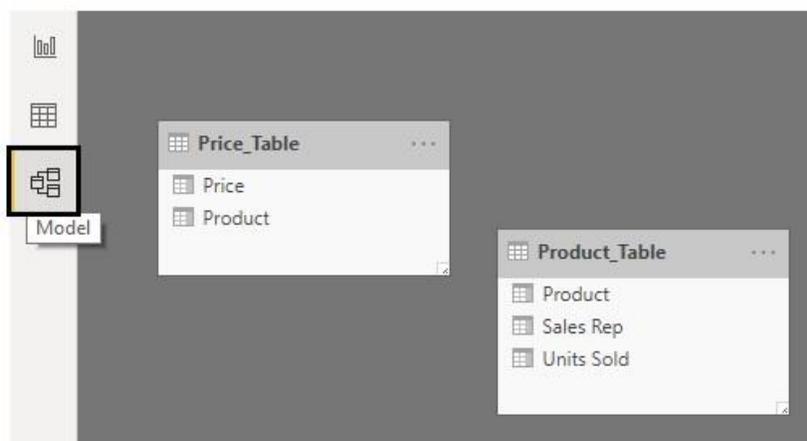
1 Unit Price = RELATED(price)

RELATED(ColumnName)
Returns a related value from another table.

Product	Sales Rep	Units
Keyboard	John	46
Laptop	Peter	27
Mouse	Roger	47
Dekstop	Roger	48
CPU	John	31
Hard Disk	Peter	34
Monitor	John	35
RAM	Peter	39
Processor	Roger	44
Keyboard	John	37
Laptop	Peter	41
Mouse	Roger	16
Dekstop	John	25
CPU	Peter	49
Hard Disk	Roger	16
Monitor	John	50
RAM	Peter	25
Processor	Roger	35

No Related Searches

This is because before we use RELATED function first we need to create a relationship between two tables under the “**Data Modelling**” tab.

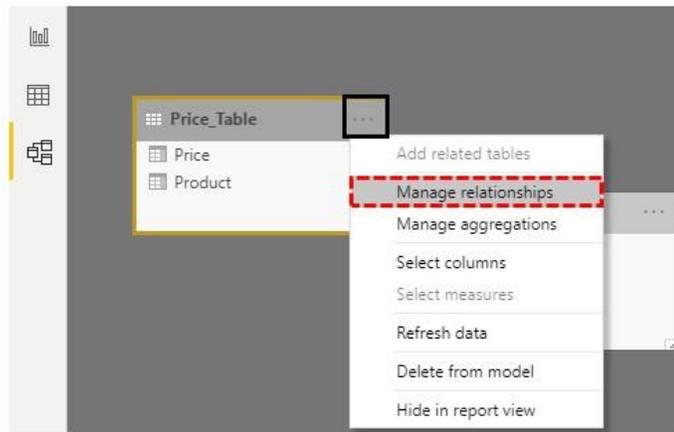


- As you can see above we don't have any relationship between these two tables. The relationship can be created between these two tables by using the common column between these two tables, so in these two tables common column is “**Product**”.

Note: Power BI is intelligent enough to create an automatic relationship between two tables based on the column headings when we upload the data tables. Because as a new

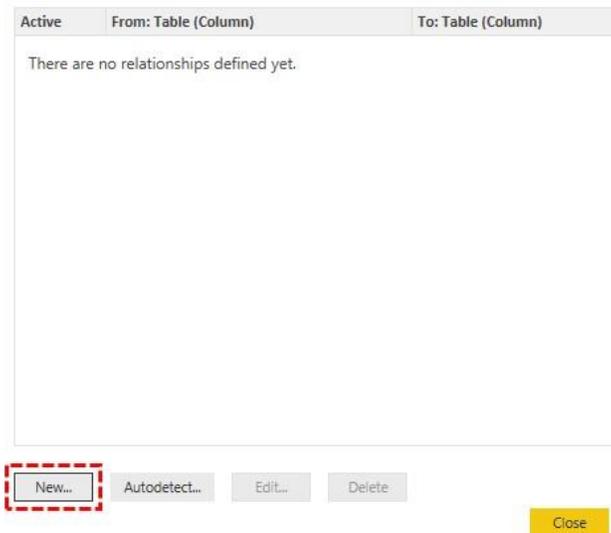
learner you need to know about the relationship between two tables we have removed the relationship.

- To create a relationship click on the ellipsis (three dots) of any of the tables and choose **“Manage Relationship”**.



- This will open up below window for you, choose the **“New”** option.

Manage relationships



This will open the **“Create Relationship”** window.

Create relationship

Select tables and columns that are related.

▼

▼

Cardinality: ▼ Cross filter direction: ▼

Make this relationship active Apply security filter in both directions
 Assume referential integrity

OK Cancel

- From the first drop-down list choose "Price_Table" and automatically in the below table it will choose "Product_Table".

Create relationship

Select tables and columns that are related.

Price_Table ▼

Product	Price
Keyboard	40
Laptop	85
Mouse	10

Product_Table ▼

Product	Sales Rep	Units Sold
Keyboard	John	46
Laptop	Peter	27
Mouse	Roger	47

Cardinality: One to many (1:*) ▼ Cross filter direction: Single ▼

Make this relationship active Apply security filter in both directions
 Assume referential integrity

OK Cancel

- Choose the common column between these two tables as "Product". Now click on "OK"

Create relationship

Select tables and columns that are related.

Price_Table

Product	Price
Keyboard	40
Laptop	85
Mouse	10

Product_Table

Product	Sales Rep	Units Sold
Keyboard	John	46
Laptop	Peter	27
Mouse	Roger	47

Cardinality

One to many (1:*)

Cross filter direction

Single

Make this relationship active

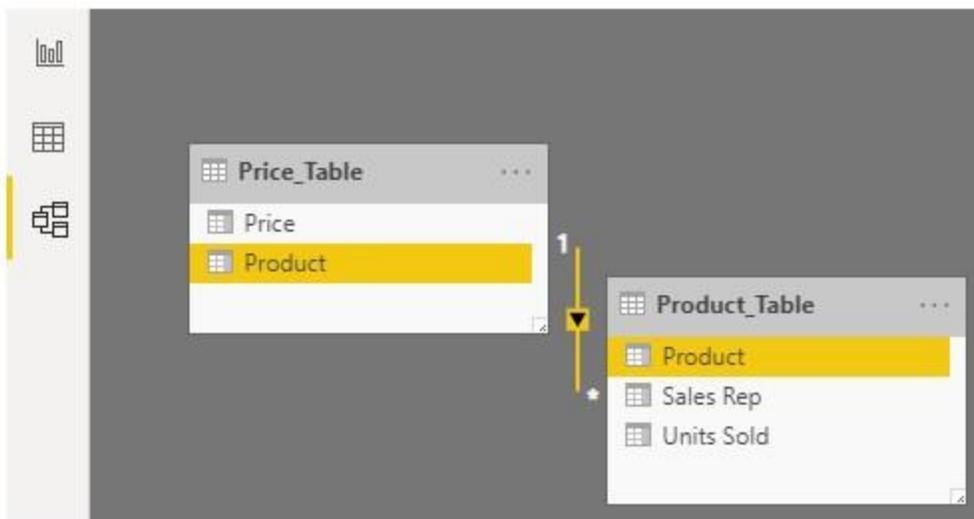
Apply security filter in both directions

Assume referential integrity

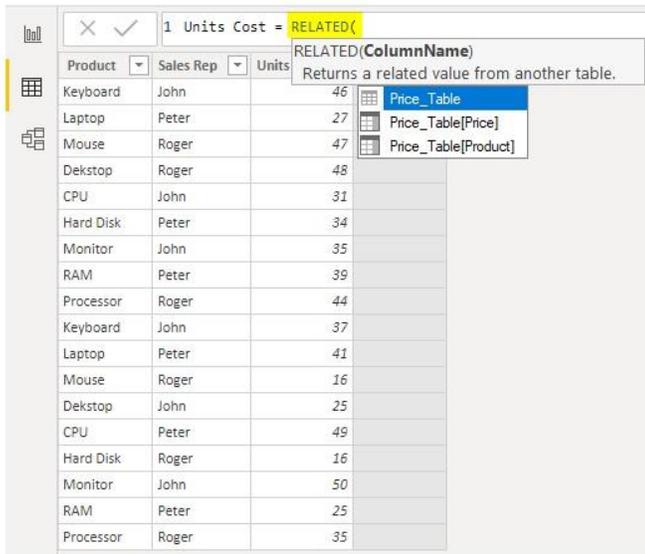
OK

Cancel

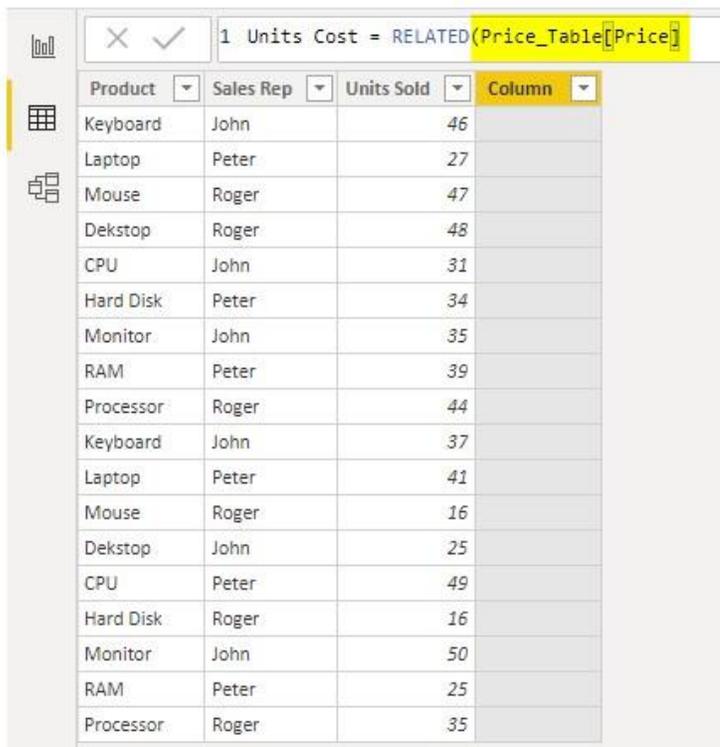
- Relationships will be created like then below one.



Now go back and choose “**New Column**” again for “**Product_Table**” and open **RELATED** function.



- As you can see above, we have a table name with all the columns of the related table. Choose the “**Price_Table [Price]**” column from the list.



- Close the bracket and hit enter key to get the price details in the new column.

1 Units Cost = RELATED(Price_Table[Price])

Product	Sales Rep	Units Sold	Units Cost
Keyboard	John	46	40
Laptop	Peter	27	85
Mouse	Roger	47	10
Dekstop	Roger	48	12
CPU	John	31	20
Hard Disk	Peter	34	25
Monitor	John	35	22
RAM	Peter	39	33
Processor	Roger	44	24
Keyboard	John	37	40
Laptop	Peter	41	85
Mouse	Roger	16	10
Dekstop	John	25	12
CPU	Peter	49	20
Hard Disk	Roger	16	25
Monitor	John	50	22
RAM	Peter	25	33
Processor	Roger	35	24

There you go we have a VLOOKUP kind of formula to fetch the details from one table to another based on the common column between tables.

- Since we have fetched price details we can arrive in new columns as **“Total Value”** by multiplying **“Units Sold with Units Cost”**.

1 Total Value = Product_Table[Units Sold] * Product_Table[Units Cost]

Product	Sales Rep	Units Sold	Units Cost	Total Value
Keyboard	John	46	40	1840
Laptop	Peter	27	85	2295
Mouse	Roger	47	10	470
Dekstop	Roger	48	12	576
CPU	John	31	20	620
Hard Disk	Peter	34	25	850
Monitor	John	35	22	770
RAM	Peter	39	33	1287
Processor	Roger	44	24	1056
Keyboard	John	37	40	1480
Laptop	Peter	41	85	3485
Mouse	Roger	16	10	160
Dekstop	John	25	12	300
CPU	Peter	49	20	980
Hard Disk	Roger	16	25	400
Monitor	John	50	22	1100
RAM	Peter	25	33	825
Processor	Roger	35	24	840

Instead of adding two extra columns we can arrive at the total value in the single-column itself, below is the formula to arrive the total price in single-step itself.

Product	Sales Rep	Units Sold	Units Cost	Total Value	Column
Keyboard	John	46	40	1840	1840
Laptop	Peter	27	85	2295	2295
Mouse	Roger	47	10	470	470
Dekstop	Roger	48	12	576	576
CPU	John	31	20	620	620
Hard Disk	Peter	34	25	850	850
Monitor	John	35	22	770	770
RAM	Peter	39	33	1287	1287
Processor	Roger	44	24	1056	1056
Keyboard	John	37	40	1480	1480
Laptop	Peter	41	85	3485	3485
Mouse	Roger	16	10	160	160
Dekstop	John	25	12	300	300
CPU	Peter	49	20	980	980
Hard Disk	Roger	16	25	400	400
Monitor	John	50	22	1100	1100
RAM	Peter	25	33	825	825
Processor	Roger	35	24	840	840

Like this, by using the RELATED function in power BI we can fetch the data from one table to the other.

Note: Power BI RELATED function file can also be downloaded from the link below and the final output can be viewed.

Things to Remember Here

- The RELATED function works as VLOOKUP in Power BI.
- The RELATED function can be used only if there is any relationship between tables.
- Without a relationship, we cannot even get to see the table name and its column headings.