CREATING & USING LINKED TABLES IN POWER BI



One good thing about Power BI is that when you add two tables to a dashboard they are synchronized.

So, when you click on one table, the linked table filters on that selected value. (It uses <u>relationships</u> <u>between tables</u> to do that, which we've previously explained.)

Let's take a look at how this works.

(This article is part of our *Power BI Guide*. Use the right-hand menu to navigate.)

How to create linked tables

To illustrate, below is a report (dashboard) we want to make:

- On the left, we have transaction categories from our financial accounts
- On the right, transaction details.

The data is from the transactions.csv data file. (You can download your bank statement if you want to follow along.)

The data on the left is **categories**. The data on the right are **transactions**.

To put this in terms of SQL, the data on the left is basically the data:

select category, count(*) from transactions

The data on the right is:

Select * from transactions

We use the relationship wizard in Power BI to join them on the common element **category**. Then when we put two tables on the dashboard, Power BI uses this relationship to let us drill into the tables by category. In other words, we can see all our office expenses, advertising expenses, travel expenses, etc.

This is what the report looks like when we <u>publish it</u> to powerbi.com:

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Γ.	Create		Alcohol & Bars			CREDIT CARD	99.00	2020	Otr 2	April	3	Gift		Re
			ATM Fee			CREDIT CARD	99.44	2020	Otr 2	April	3	Internet		EA
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			Books			CREDIT CARD	6.95	2020	Otr 2	April	5	Coffee Shops		- 52.0
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			Fast Food			CREDIT CARD	15.51	2020	QU 2	April		Restaurants		0.
			Finance Charge			CREDIT CARD	6.11	2020	Qtr 2	April	9	Restaurants		LA
			Financial			CREDIT CARD	10.45	2020	QV 2	April	9	Restaurants		20
			Furnishings			CREDIT CARD	359.67	2020	Qtr 2	April	10	Restaurants		AU
			Gas & Fuel			CREDIT CARD	16.43	2020	Qtr 2	April	12	Alcohol & Bars		50
			Gift			CREDIT CARD	11.50	2020	Qtr 2	April	12	Coffee Shops		Sta
			Groceries			CREDIT CARD	11.85	2020	Qtr 2	April	12	Restaurants		G.
			Health & Fitness			CREDIT CARD	5.26	2020	Qtr 2	April	12	Restaurants		LA
			Hobbies			CREDIT CARD	6.42	2020	Qtr 2	April	14	Coffee Shops		Sta
			Home Phone			CREDIT CARD	23.24	2020	Qtr 2	April	15	Coffee Shops		Sta
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transaction detail data looks like:

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Group by category

Here are the categories. To make this view of the data we add data the **data source** transactions.csv a second time, then we dropped all the columns except category. Then we pick group by category.

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	Category 💌	Count 💌
Ħ	Credit Card Payment	129
	Transfer	575
친금	Taxes	1
	Financial	17
	Books	16
	Entertainment	9
	Electronics & Software	15
	Advertising	17
	Movies & DVDs	20
	Finance Charge	13
	Business Services	48
	Newspapers & Magazines	16

Newspapers & Magazines 16 Now, pick the table visualization and the fields. For the category table we obviously just pick one field, **category**.



Categrade For the transactions table we pick all the transactions fields.

Under fields we have the two data sources:

- Categories
- Transactions



Resizing the dashboard

Here is what the tables look like when put onto the dashboard. The table and table text are too small and not positioned in the right place when we start. So, grab the edges to move them around and then go to **Page View/Actual Size** to make them large enough to read.





Viewing relationships

Here is the **relationship** screen. We don't have to do anything as power BI matches by the common element, category.



the table, before we publish it to powerbi.com, we can test it. We cannot see the layout very well, meaning the full screen size or mobile layout.

But we can click on the category on the left. Then the table on the right updates to show only transactions in that selected category. You could call this **synchronized tables**.

Category &	x 🗅 V	⊑2 ···					
Advertising		- 1	Account Name	Amount	Year	Quarter	Month
Air Travel			CREDIT CARD	54.88	2020	Otr 2	May
Alcohol & Bars			CREDIT CARD	17.84	2020	Otr 2	May
ATM Fee			CREDIT CARD	6.88	2020	Otr 2	May
Bank Fee			CREDIT CARD	9.76	2020	Otr 2	May
Books			CREDIT CARD	17.84	2020	Otr 2	June
Business Services			CREDIT CARD	15.83	2020	Qtr 2	June
Cash & ATM			CREDIT CARD	17.84	2020	Qtr 3	July
Charity			CREDIT CARD	17.84	2020	Qtr 3	August
Check			CREDIT CARD	17.84	2020	Qtr 3	Septem
Clothing			CREDIT CARD	17.84	2020	Qtr 4	Octobe
Coffee Shops			CREDIT CARD	17.84	2020	Qtr 4	Novem
Credit Card Payment			CREDIT CARD	16.75	2020	Qtr 4	Novem
Doctor			CREDIT CARD	17.84	2020	Qtr 4	Decemb
Electronics & Software			CREDIT CARD	17.84	2021	Qtr 1	January
Entertainment			CREDIT CARD	17.84	2021	Qtr 1	Februar
Fast Food			Green Card	2.99	2020	Qtr 2	April
Finance Charge			Green Card	14.99	2020	Qtr 2	April
Financial							-
Furnishinos		-	C C I	007.00	0000	o: 0	••

Viewing full-size

As always, click Publish to Power BI to test the final version. And as we just said, it's really the only way to see the full-sized screen as Power BI Desktop does not have a very good preview function.



Related reading

- BMC Machine Learning & Big Data Blog
- Power BI Basics: Creating a Pie Chart with Power Query Editor
- Data Visualization Guide, a series of tutorials
- Data Storage Explained: Data Lake vs Warehouse vs Database
- Enabling the Citizen Data Scientists
- MySQL vs MongoDB: Comparing Databases