CREATING A TABLEAU TEXT TABLE WITH MEASURES AND DIMENSIONS



Part of our ongoing Tableau series, this article explains how to create a text table.

You can think of a **text table** in Tableau as the same as a pivot table in Excel. It's a table, not a chart, with one or more values in the rows and one or more values in the columns. The easiest way to picture a text table is to think of sales or expenses by date. In this example, we will use expenses.

Putting data in Tableau

If you're new to Tableau, see our starter article <u>Tableau: Getting Started with Real Examples</u>. For the data, I'm using my credit card statements. You can easily download your credit card into <u>one of the</u> <u>supported data sources</u>, like PostgreSQL.

Defining measures and dimensions

First, we need to understand two concepts: **measures** and **dimensions**. There are long definitions in various tutorials that try to explain what dimensions and measures are. But here's a really easy one:

- A **measure** is a number, which is anything you can do math on. A measure includes expenses, sales, etc.
- A **dimension** is anything that is not a number, such as dates, or text fields like category.

In Tableau, fields are grouped by dimension and measures on the left-hand side of the worksheet editor, like this:

Data		Analytics		<							
🔓 chase (chase)											
🖯 rev	🖯 revenue (chase)										
Dim	ension	s	Q	*							
Abc	Categ	ory									
Abc	Descr	iption									
Ē	Postdate										
Ē	Transactiondate										
Abc	Туре										
Abc	Measu	ıre Names									
Mea	sures										
#	Amou	nt									
=#	Numb	er of Records	5								
#	Measu	ıre Values									

Examples of text tables

By default, Tableau is designed to work with sums, which they call **aggregation**. So, a text table will by default display aggregated data.

Here are some examples of what your text table can show:

Expenses by category

This table has one dimension, category, and one measure, expenses.

			≣ Rows Cate	gory
∧ Filters				
Category			Expense Tabl	е
			Text	
∧ Marks				
T Toxt		-	Category	
E lext		· · · ·	Bills & Utilities	-758
	Ð	Т	Entertainment	-140
Color	Size	Text	Fees & Adjustments	-344
			Food & Drink	-1,378
	\Box		Gas	-118
Detail	Tooltip		Groceries	-1,736
			Health & Wellness	-415
I SU	M(Amoun	t)	Home	-549
			Personal	-56
			Shopping	-1,521
			Travel	-307
			Grand Total	-7,321

Expenses by date and category

In this table, we add a second dimension: date. If this was a chart you would say that a dimension is an axis, like the XY-axis in a <u>scatter chart</u>.

E Rows Category A grant postdate Category A grant postdate Category A grant postdate Postdate Postdate March March A grant post A	jij Columns	iii Columns (E MONTH(Postdate)									
Expense Table TextPostateCategoryJanuaryFebruaryMarchBills & Utilities-505-197-555Entertainment-120-133-77Fees & Adjustments-800-138-126Food & Drink-323-750-305Gas-113-413-926Health & Wellness-270-1144-312Home-536-122-1072Personal-56-1145-449Travel-75-2,4082,176Grand Total-2377-5,166221	≣ Rows Cate	egory									
PostdateCategoryJanuaryFebruaryMarchBills & Utilities-505-197-555Entertainment-120-133-776Fees & Adjustments-303-133-126Food & Drink-323-750-305Gas-113-449-526Health & Wellness-270-1144-312Home-556-121-449Shopping-575-2,4082,176Grand Total-2337-5,166221	Expense Table Text										
CategoryJanuaryFebruaryMarchBills & Utilities-505-197-555Entertainment-120-133-77Fees & Adjustments-800-138-126Food & Drink-323-750-305Gas-113-413-926Groceries-398-413-926Health & Wellness-270-1144-31Home-556-122-Personal-56-1072-449Travel-75-2,4082,176Grand Total-2377-5,166221			Postdate								
Bills & Utilities-505-197-555Entertainment-120-133-77Fees & Adjustments-80-138-126Food & Drink-323-750-305Gas-13-449-56Groceries-398-413-926Health & Wellness-270-114-31Home-536-12-1072Personal-56-1072-449Travel-75-2,4082,176Grand Total-2,377-5,166221	Category	January	February	March							
Entertainment -120 -133 -77 Fees & Adjustments -80 -138 -126 Food & Drink -323 -750 -305 Gas -13 -493 -56 Groceries -398 -413 -926 Health & Wellness -270 -114 -31 Home -536 -12 - Personal -56 -12 - Shopping -1,072 -449 -449 Travel -75 -2,408 2,176 Grand Total -2,377 -5,166 221	Bills & Utilities	-505	-197	-55							
Fees & Adjustments -80 -138 -126 Food & Drink -323 -750 -305 Gas -13 -49 -56 Groceries -398 -413 -926 Health & Wellness -270 -114 -31 Home -536 -122 -21 Personal -56 -126 -449 Travel -75 -2,408 2,176 Grand Total -2,377 -5,166 221	Entertainment	-120	-13	-7							
Food & Drink -323 -750 -305 Gas -13 -49 -56 Groceries -398 -413 -926 Health & Wellness -270 -114 -31 Home -536 -12 - Personal -56 - - Shopping -1,072 -449 -449 Grand Total -2,377 -5,166 221	Fees & Adjustments	-80	-138	-126							
Gas -13 -49 -56 Groceries -398 -413 -926 Health & Wellness -270 -114 -31 Home -536 -122 - Personal -56 - - Shopping -1,072 -449 -449 Grand Total -2,377 -5,166 221	Food & Drink	-323	-750	-305							
Groceries -398 -413 -926 Health & Wellness -270 -114 -31 Home -536 -12 - Personal -56 -1 - Shopping -1,072 -449 Travel -75 -2,408 2,176 Grand Total -2,377 -5,166 221	Gas	-13	-49	-56							
Health & Wellness -270 -114 -31 Home -536 -12 - Personal -56 - - Shopping -1,072 -449 Travel -75 -2,408 2,176 Grand Total -2,377 -5,166 221	Groceries	-398	-413	-926							
Home -536 -12 Personal -56 - Shopping -1,072 -449 Travel -75 -2,408 2,176 Grand Total -2,377 -5,166 221	Health & Wellness	-270	-114	-31							
Personal 56 Shopping -1,072 -449 Travel -75 -2,408 2,176 Grand Total -2,377 -5,166 221	Home	-536	-12								
Shopping -1,072 -449 Travel -75 -2,408 2,176 Grand Total -2,377 -5,166 221	Personal	-56									
Travel -75 -2,408 2,176 Grand Total -2,377 -5,166 221	Shopping		-1,072	-449							
Grand Total -2,377 -5,166 221	Travel	-75	-2,408	2,176							
	Grand Total	-2,377	-5,166	221							

Expenses by date, category, and description

Here, we'll add a third dimension: payee. You could use any other description, too.

(Note: If this was a chart it would be a three-dimensional chart. Because those are hard to visualize, it's easier to use a text table. Of course, there are ways to see more than one dimension on a chart by, for example, adding more than one line to a line chart and making use of both the left and right-hand axes of a chart.)

jij Columns 🖽 M	ONTH(Postdate)										
≣ Rows Cat	tegory Description										
Expense Table Text											
			Postdate								
Category	Description	January	February	March							
Bills & Utilities	apply.gov.ee	-133									
	CYTA EBILL	-57	-55								
	DIMOS PAPHOU	-58		-38							
	EAC		-120								
	ROAD TAX DEPARTMENT 2	-235									
	SO EASY TOP-UP	-22	-22	-17							
Entertainment	WWW.CYSO.ORG.CY	-120	-13								
	WWW.WATCHNEWS.PRO			-7							
Fees & Adjustments	PURCHASE INTEREST CHA	-80	-138	-126							
Food & Drink	BACK STREET		-10								
	BATHS OF APHRODITE RE		-26								
	BEANHAUS COFFEE ROAS	-32	-8								
	BOULEVARD REST WINE &		-67								

We put dimensions on

the row and columns. If you were to flip the rows and columns of the text table above, you get two **columns of columns** (category and description) by month.

This makes sense if you think of the idea of a **column** as being all the fields you have added to the column line at the top. A programmer would call this (category, description) a **tuple**.

You can also think of rows the same way, as being a collection of whatever you assign to the row line. For example, above each row contains both category and description or (category, description) pairs.

iii Columns	Category	1	D	escription								
≣ Rows		H(Postdat	e)									
Expense	Table T	Text										
			Bills & U	Itilities			Enterta	inment	Fees & Adjust			
Month of		CYTA	DIMOS		ROAD	SO EASY			PURCHA	BACK	BATHS	B
Postdate	apply.g	EBILL	PAPHOU	EAC	TAX DE	TOP-UP	WWW	WWW	SE INTE	STREET	OF APH	U
January	-133	-57	-58		-235	-22	-120		-80			
February		-55		-120		-22	-13		-138	-10	-26	
March			-38			-17		-7	-126			

Adding measures to the text table

When you first pick a row and column dimension, Tableau does not know what value you want to put at each row, column intersection. So, it populates each cell with **abc**. To fix that, we add a **measure** to the table. You do that by dropping it onto the marks tab and then selecting **text**, **line**, **bar**, or however you want to display this. We use text for a text table.

 Pages 			iii Columns	(⊞ MC	ONTH(Pos	tdate)	
			⊞ Rows	Cate	gory		
∧ Filters							
Categor	y		Expense	Tabl	e Text		
						Postdate	
 Marks 			Category		January	February	March
T Text		•	Bills & Utilitie	S	Abc	Abc	Abc
	0		Entertainmen	Entertainment		Abc	Abc
	6	Т	Fees & Adjust	ments	Abc	Abc	Abc
Color	Size	lext	Food & Drink		Abc	Abc	Abc
			Gas		Abc	Abc	Abc
Detail	Tooltin		Groceries		Abc	Abc	Abc
Detail	loonip		Health & Well	ness	Abc	Abc	Abc
			Home		Abc	Abc	
			Personal		Abc		
			Shopping			Abc	Abc
			Travel		Abc	Abc	Abc
			Grand Total		Abc	Abc	Abc

First note that

we change date from **year(Postdate)** to **Month(Postdate)** as Tableau, by default, usually assumes we want to sum values by year. That is, aggregation is its initial position, and for whatever reason it picks year first.

∃M	ONTH(Postdate) 루		
	Show Filter		
	Show Highlighter		
	Sort		
	Clear Sort		
\checkmark	Show Header		
~	Include in Tooltip		
~	Standard Gregorian		
	ISO-8601 Week-Based		
	Year	2015	
	Quarter	Q2	
1	Month	May	
	Day	8	
	More	•	

To put a number (dimension) onto the table, drag a

dimension, in this case **amount**, onto the text mark. Since Tableau assumes aggregation it will add **sum()** to amount to give us expenses by month.



Then the worksheet fills in the numbers:

Expense Table Text

			Postdate	
Category	Ξ.	March	January	February
Groceries		-926	-398	-413
Shopping		-449		-1,072
Food & Drink		-305	-323	-750
Bills & Utilities	5	-55	-505	-197
Home			-536	-12
Health & Wellness		-31	-270	-114
Fees & Adjustn	nents	-126	-80	-138
Travel		2,176	-75	-2,408
Entertainment	:	-7	-120	-13
Gas		-56	-13	-49
Personal			-56	