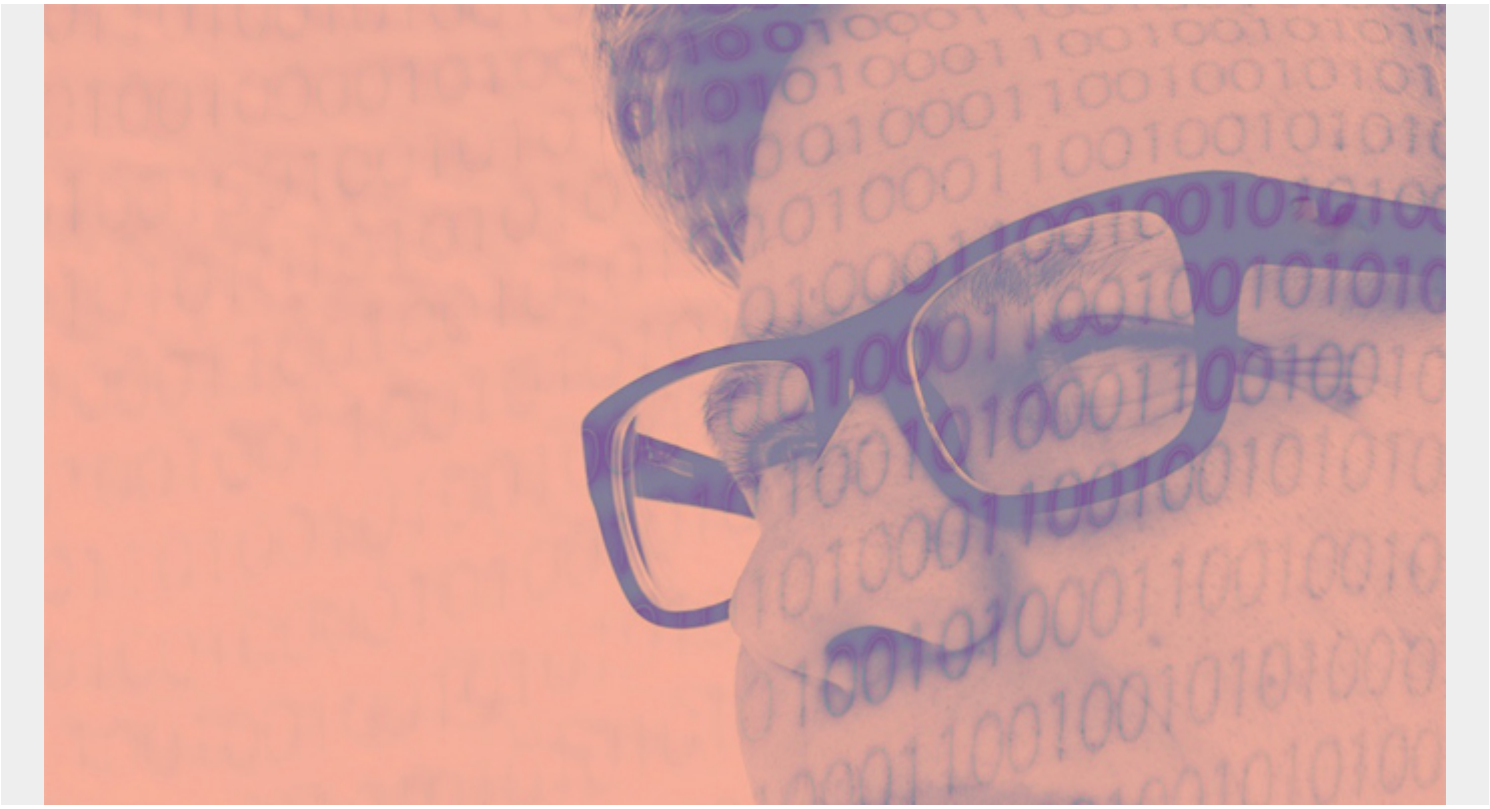
CREATING A TABLEAU TEXT TABLE WITH MEASURES AND DIMENSIONS



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

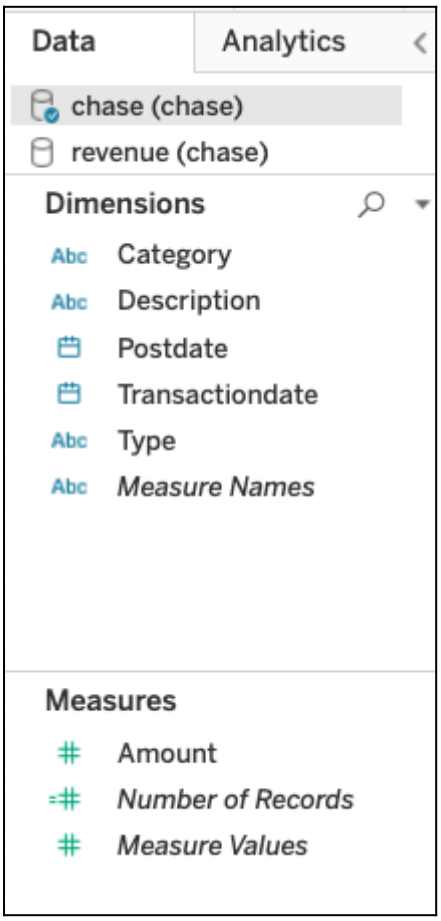
If you're new to Tableau, see our starter article Tableau: Getting Started with Real Examples. For the data, I'm using my credit card statements. You can easily download your credit card into one of the supported data sources, like PostgreSQL.

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:



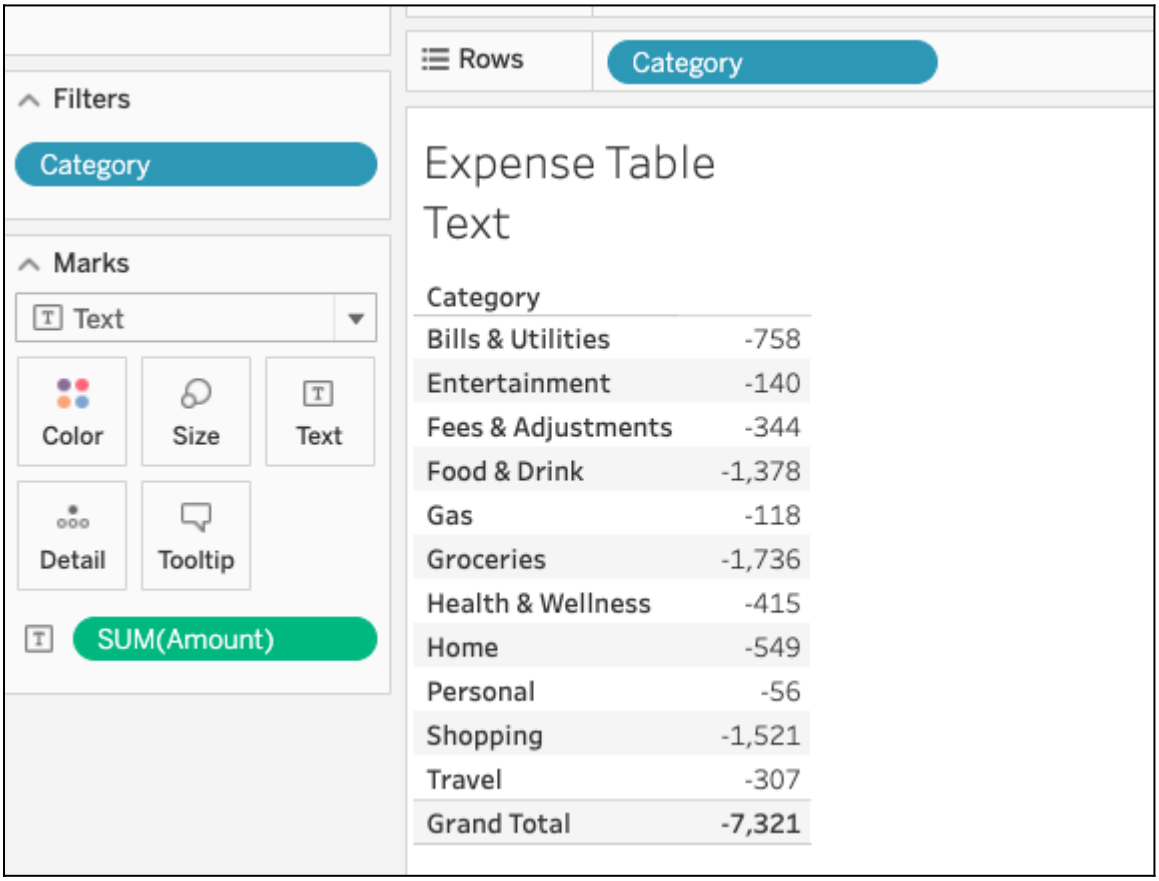
Examples of text tables

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:

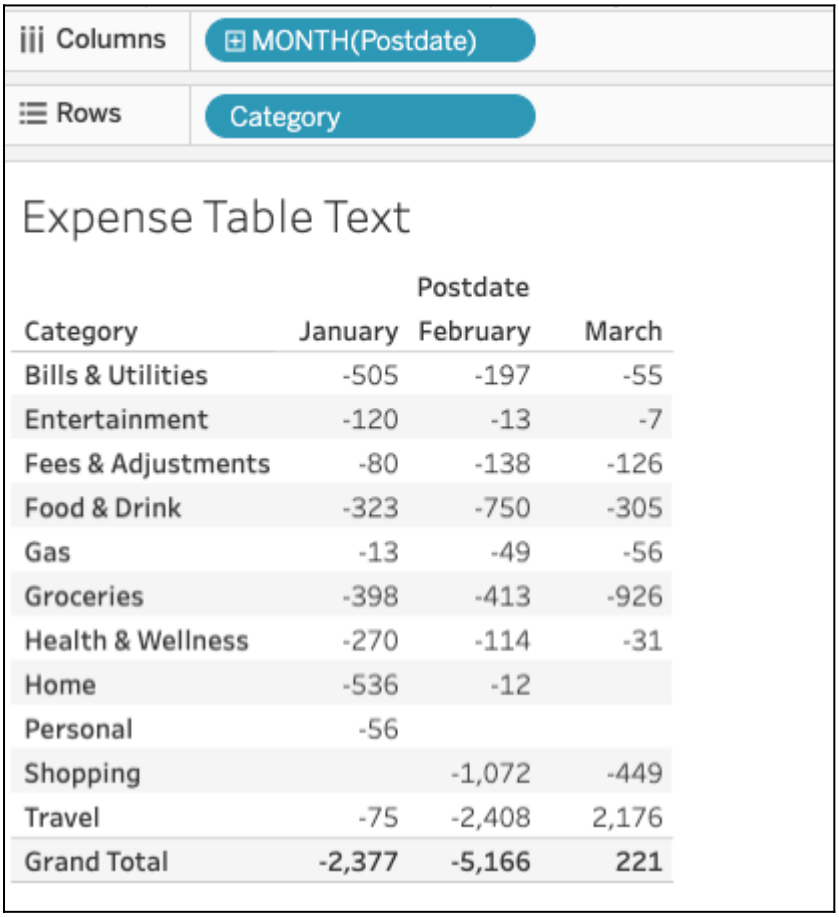
Expenses by category

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



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 scatter chart.

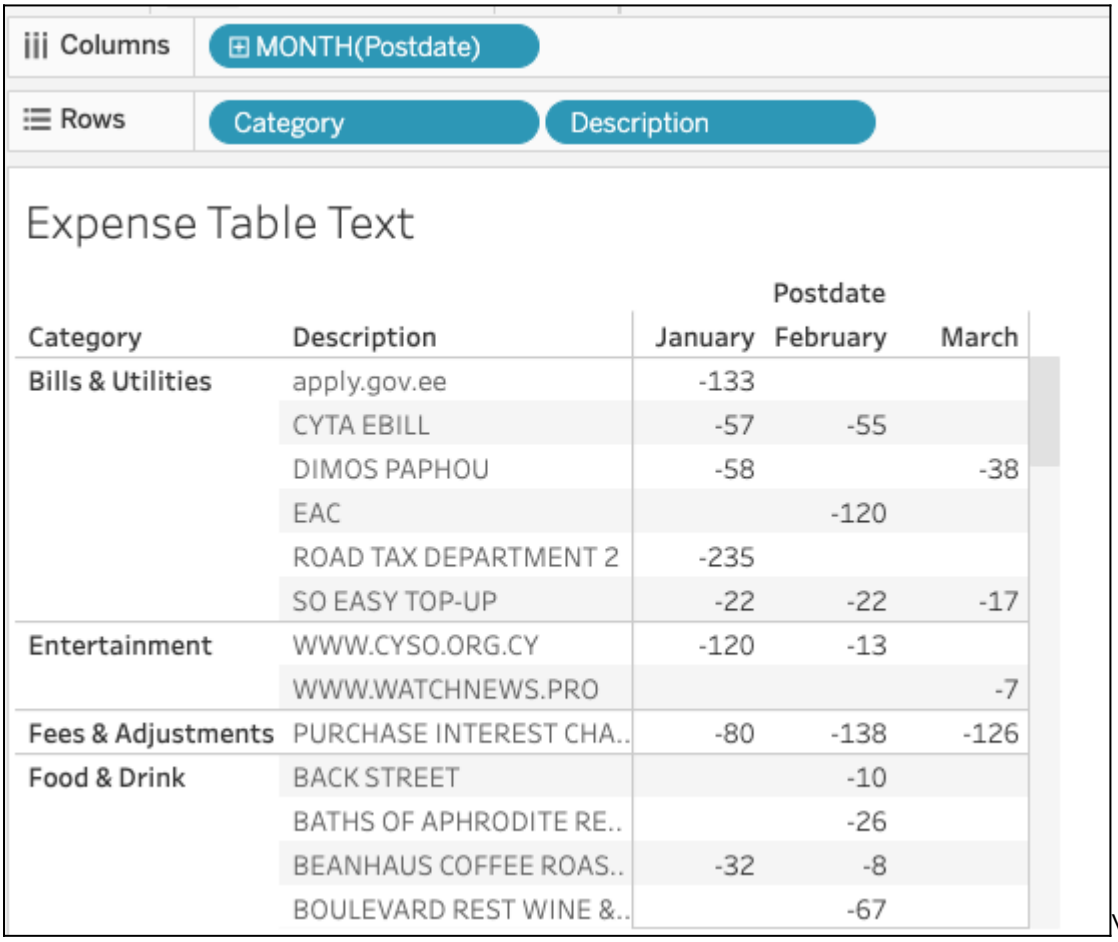


	Postdate		
Category	January	February	March
Bills & Utilities	-505	-197	-55
Entertainment	-120	-13	-7
Fees & Adjustments	-80	-138	-126
Food & Drink	-323	-750	-305
Gas	-13	-49	-56
Groceries	-398	-413	-926
Health & Wellness	-270	-114	-31
Home	-536	-12	
Personal	-56		
Shopping		-1,072	-449
Travel	-75	-2,408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



Category	Description	Postdate 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.

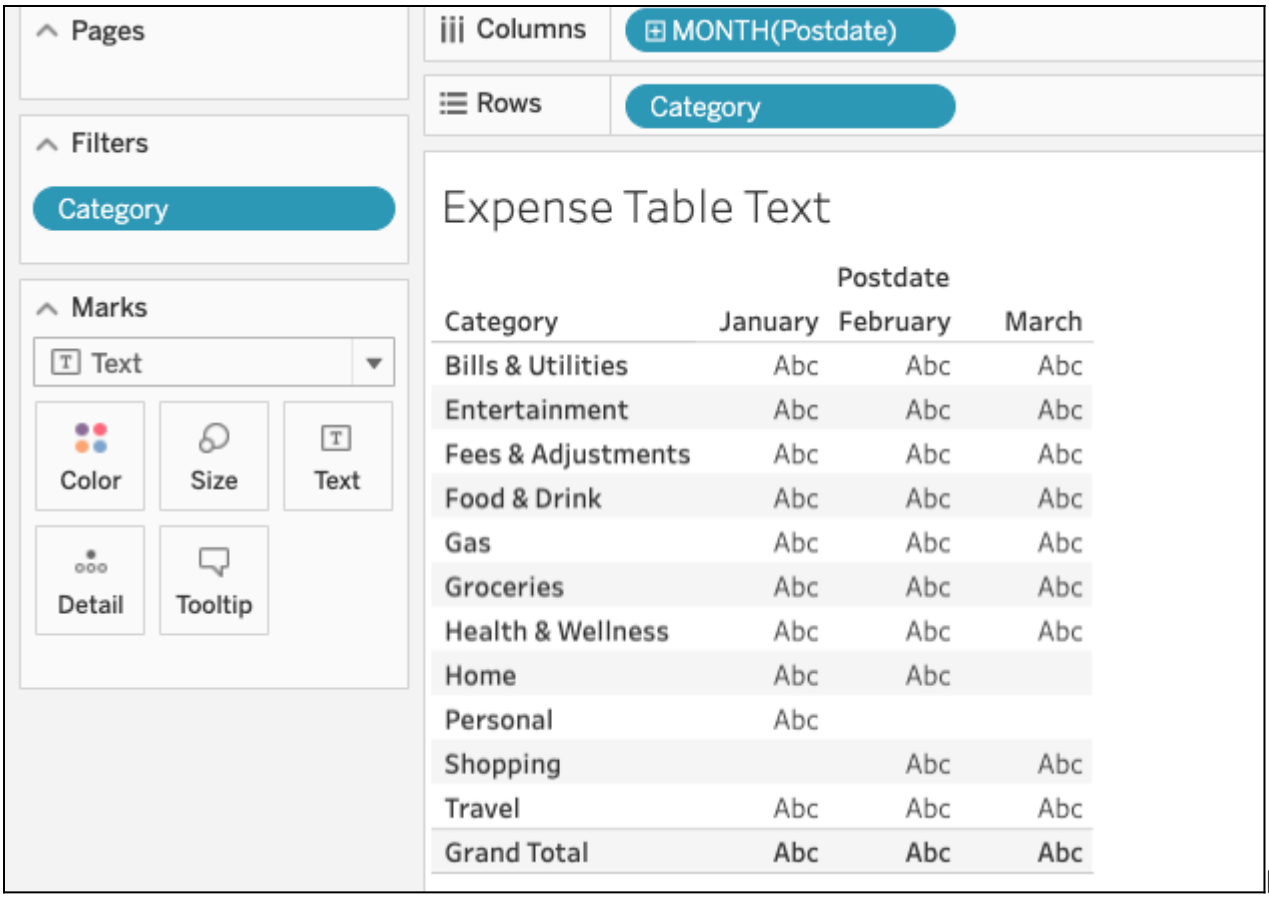
This makes sense if you think of the idea of a **column** as being all the fields you have added to the column line at the top. A programmer would call this (category, description) a **tuple**.

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.

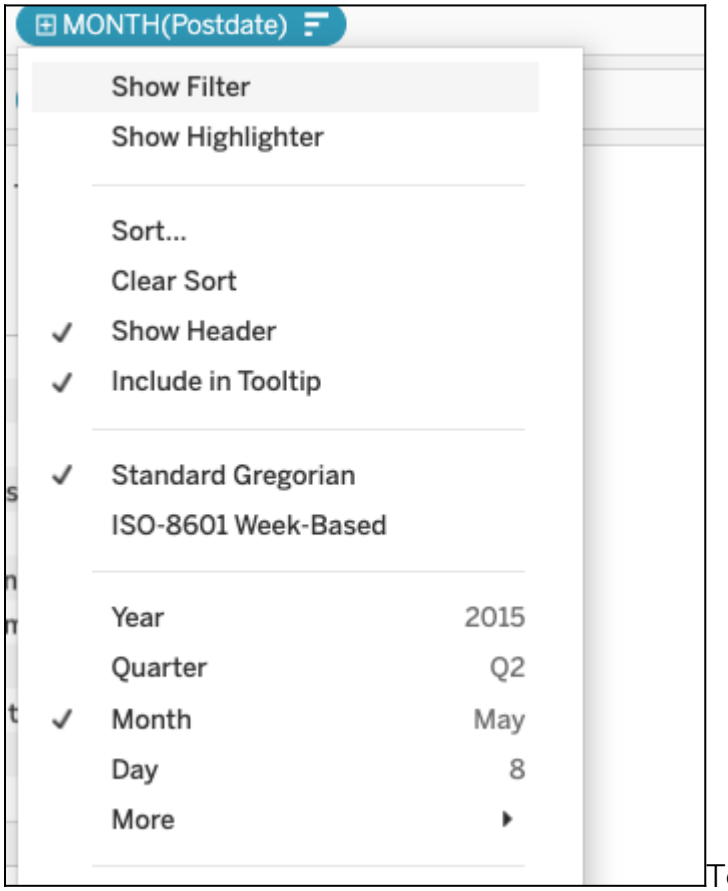
	Bills & Utilities						Entertainment		Fees & Adjust..			
Month of Postdate	apply.g..	CYTA EBILL	DIMOS PAPHOU	EAC	ROAD TAX DE..	SO EASY TOP-UP	WWW...	WWW...	PURCHASE INTE..	BACK STREET	BATHS OF APH..	BE U
January	-133	-57	-58		-235	-22	-120		-80			
February		-55		-120		-22	-13		-138	-10	-26	
March			-38			-17		-7	-126			

Adding measures to the text table

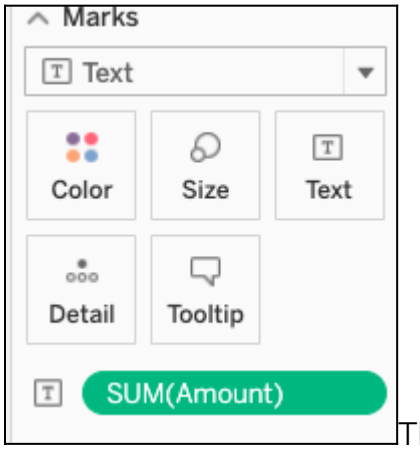
When you first pick a row and column dimension, Tableau does not know what value you want to put at each row, column intersection. So, it populates each cell with **abc**. To fix that, we add a **measure** to the table. You do that by dropping it onto the marks tab and then selecting **text**, **line**,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



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.



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