

Summaries, cross-tabs, groups. "Arguably the most useful tool with a spreadsheet"

What are doing?

1. Intro - what are these, why?
2. Fundamentals - rows, columns, values, totals, sorting
3. Tips and tricks - multiple value fields, changing aggregation types, adding filters, multiple row fields, copying pivot tables.

1.Intro

Pivot tables help you quickly aggregate, or group your data to answer questions like: how many of this type are in my data? What's the total cost of the group? What's the total cost by category? Which category costs the most? How does it compare to past years? What's the trend?

You *could* do this several ways. Functionally, this is a =UNIQUE(range), =COUNTIF(range, criterion) and =SUMIF(range, criterion). But pivot tables supercharge those formulas to happen faster and give you flexibility to change your mind and slice and dice.

Reminder-- a lot of the fundamentals of data in excel applies to this. Make a copy of your original data and hide it. Remember Copy-Paste-values to get rid of formulas. Common functions like SORT and FILTER also will be used in pivot tables-- as well as COUNT and AVERAGE and SUM etc. Check your data for conditional values by putting on a filter and seeing if it's what you expect. Yes/No example with blanks or mistyped values will matter.

Simple example:

	A	B	C
1	Property Type	Sales price	
2	Apartment	\$328,484	
3	House	\$1,145,078	
4	Apartment	\$587,737	
5	Apartment	\$522,867	
6	Apartment	\$321,706	
7	Condo	\$486,653	
8	Apartment	\$482,425	
9	Townhouse	\$931,004	
10	Condo	\$321,095	
11	Townhouse	\$548,455	
12	Apartment	\$376,895	
13	Condo	\$709,642	
14	Apartment	\$277,876	
15	Townhouse	\$838,370	
16	Condo	\$227,156	
17			

	A	B	C
1	Property Type	COUNTA of Property Type	SUM of Sales price
2	Apartment	7	\$2,897,990
3	Condo	4	\$1,744,546
4	House	1	\$1,145,078
5	Townhouse	3	\$2,317,829
6	Grand Total	15	\$8,105,443
7			
8			

2. Fundamentals

At the core of every pivot table we have rows, columns and values. You'll INSERT your pivot table based on your range of data. Left is the table, right is the builder or editor. Make a copy of this data copy→ paste values

https://docs.google.com/spreadsheets/d/18UR3mSbMB_4nZhC1we7HcrJ2ze8nEEV-vpK0cZyggYU/edit#gid=0

ROWS - when we're adding rows, we're presented with a list of *column* headings in our data. This might be confusing, but helps explain the logic of a pivot table, we are pivoting our columns into categories of their own. When you add a ROW to your pivot table you're asking the computer to find all the *unique* items from that column and add them into your pivot table as row headings. In the property case we're taking all the rows of property data and squashes them into four-- each unique property type. (THIS IS ALSO A GREAT WAY TO VERIFY AND CHECK FOR DIRTY DATA).

COLUMNS produces same effect as adding rows, but in area of columns. These columns are aggregated values data analyzed for each column. In our property example we can ask for a COUNT of how many in that category. Or we can ask for a SUM of the value of that category. Columns are the "cross-tab" part of showing options within your rows.

Values - section is where you tell the computer to add these columns with the type. You switch the value you want aggregated by clicking the Value Fields Settings - options: Sum, Count, Average, Max, Min...) Then can "show values as" to make it % of grand total-- a useful metric.

Sorting - This allows you to rank your results by column in your pivot table. You can also format your results to show dollars or whatever value you're using.

3. Tips and Tricks

Pull up other dataset with property sales including the realtor.

You can add multiple columns with different values. You could look at both SUM of the sales prices and the AVERAGE sales price by type.

Pivot table filters are conceptually the same as ordinary filters we use in our data. We add a filter to show only a subset of the data based on some condition. For example, you could add a filter to only see the data from 2018, or just the month of September, or Region A. etc.

Try inserting a filter based on the AGENT. You can then select just the stats for Bob, for instance.

MULTIPLE CATEGORIES - this adds multiple fields to our ROWS section. A single field you include provides a unique list of items from that category. A second row field appears as a

sub-category-- all the unique combinations of those two fields. You can then swap the order of the row fields by dragging them around the wizard.

In our property example you could summarize: how many property types by each agent or property sales by agent, by type. This is a good space to experiment and view your data in different ways. It's best to think about these as answering questions you dream up.

4. Examples

VEGI data

https://drive.google.com/file/d/156BN3tJSd1ZpTIJNWBIWEn1IjJqjgmM_9/view?usp=sharing

Broadband data

<https://drive.google.com/file/d/1ZCN88ibxiefvjR-ZHmHwUihznHilzNE2/view?usp=sharing>

Bail data

https://drive.google.com/file/d/1aTGpCH_vJCS767pfTliUyhomUKOYSXWP/view?usp=sharing

5. Other resources

Cody Baldwin - <https://www.youtube.com/watch?v=qu-AK0Hv0b4>

Ben Collins - <https://www.youtube.com/watch?v=imY1Z9ypHRo&t=167s>

MaryJo Webster - https://www.youtube.com/watch?v=NjOfLP5s24w&feature=emb_title