

Excel 2016: Large Data 2 PivotTables



Excel 2016: Large Data 2 - PivotTables

1.5 hours

PivotTables are very powerful summary reports created from an organized data set. In this workshop we will learn to plan and create PivotTables; work with grouping, filters, and summary options; create a PivotChart; and explore formatting options. This advanced workshop assumes prior experience with Microsoft Excel.

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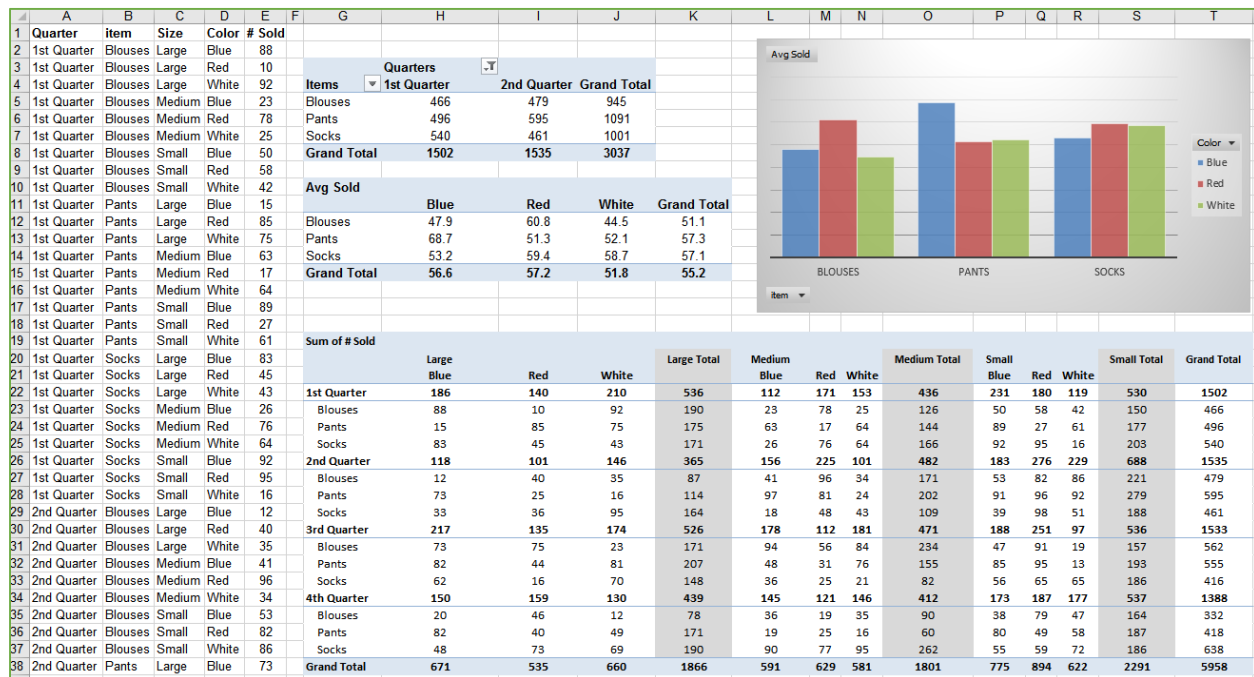
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PivotTables

PivotTables are summary reports. They give you the ability to take a large boring set of repetitive data and summarize it into a neat table that you can very easily rearrange, filter, format, and even chart.

Here's an example of a repetitive raw data set, three PivotTables, and a PivotChart.



Planning

The most important part of building a PivotTable is planning. You have to remove yourself from the raw data and think about the final result. There's a learning curve, have patience with yourself and with Excel and you'll get there.

The Data

The data has to be repetitive. It looks wrong at first, but the more boring and repetitive your data, the more you can do with it. In the Large Data 1 class we learn about sorting and filtering in Excel. We don't need to keep each quarter, each department, each person on a different sheet. If we keep all of the data in the same place, we can look at each category, one at a time, using the filter, and beautifully because it is all in the same place, we can look across categories and quickly summarize with a PivotTable.

The data has to be consistent. We don't want to see entries like: 4th Qtr, 4th Quarter, Qtr 4. In the Large Data 3 (vLookups) class we'll learn about validation rules, and in Large Data 4 (report) we'll see how to use vLookups to help us cleanup inconsistent data entry.

The definition of a database is a structured collection of related data. Rows of a data table are **records**. When we filter in Excel, the Status Bar tells us how many Records were found.

Columns of a data table are **fields**. The column titles of your original dataset will appear in the PivotTable Field List. You'll use these titles to control the structure of the PivotTable. If possible, **use clear, concise, and unique column titles**. If you use the same column title more than once, Excel will add a number after the subsequent titles. Example: *Home Address, City, State, Zip, Work Address, City, State, Zip* becomes *Home Address, City, State, Zip, Work Address, City(2), State(2), Zip(2)*.

The Result

By all means, jump in and play with the tools, get comfortable with how to make a PivotTable. But when it comes down to needing a specific report, you have to "show your work". Think about what it is you actually want to see.

"I want to know how many items we ordered." Okay. Do you care what the items were? Do you care about the data across the year, or do you only want the total? What about the other details? Each versus boxes? Would you like to compare your orders to another departments?

"I want to know how many patients were admitted last month." Okay. Do you want to see the break down by time, perhaps by morning and afternoon? By shift? By Department? Or would you like to have the flexibility to change (filter) the shifts and departments?

The more you think about what you want out of the glorious summary report known as a PivotTable, the better it will come together for you.

Building

The PivotTable field list shows the column titles of our original dataset, these are our **Fields**. If you rename, add, or delete columns in the dataset you will not see the change here until you refresh the data. The **Refresh** button is on the Analyze tab of the PivotTable Tools, and can be found on the shortcut menu if you right-click inside the table.

- Fields in the **Filters** will appear above the table.
- Fields in the **Columns** will appear at the top of each column of the PivotTable.
- Fields in the **Rows** will appear at the left of each row of the PivotTable.
- Fields in the **Values** will be summarized. By default, text and date fields will be counted, number fields will be summed.

| Quarter | 1st Quarter | | | |
|--------------------|-------------|------------|------------|-------------|
| Sum of # Sold | Blue | Red | White | Grand Total |
| Blouses | 161 | 146 | 159 | 466 |
| Large | 88 | 10 | 92 | 190 |
| Medium | 23 | 78 | 25 | 126 |
| Small | 50 | 58 | 42 | 150 |
| Pants | 167 | 129 | 200 | 496 |
| Large | 15 | 85 | 75 | 175 |
| Medium | 63 | 17 | 64 | 144 |
| Small | 89 | 27 | 61 | 177 |
| Socks | 201 | 216 | 123 | 540 |
| Large | 83 | 45 | 43 | 171 |
| Medium | 26 | 76 | 64 | 166 |
| Small | 92 | 95 | 16 | 203 |
| Grand Total | 529 | 491 | 482 | 1502 |

PivotTable Fields

Choose fields to add to report:

Search

- Quarter
- item
- Size
- Color
- # Sold

MORE TABLES...

Drag fields between areas below:

FILTERS: Quarter

COLUMNS: Color

ROWS: item, Size

VALUES: Sum of # Sold

Defer Layout Update

UPDATE

Arranging Fields

Adding

- Click the check box in front of the field name
 - Text fields will go into the **Rows** showing each unique value from the dataset
 - Date fields will go into the **Rows** grouping the values across time
 - Number fields will go into the **Value** as a sum
- Drag fieldname from the field list to an area
 - You will *have* to drag to add a field to the value area multiple times
- Right-click on the fieldname in the field list and choose an area

Moving

- Drag fieldname from an area to a new area
- Right-click on the fieldname in the field list and choose a new area
- Left-click on a field in an area and choose a new area

Deleting

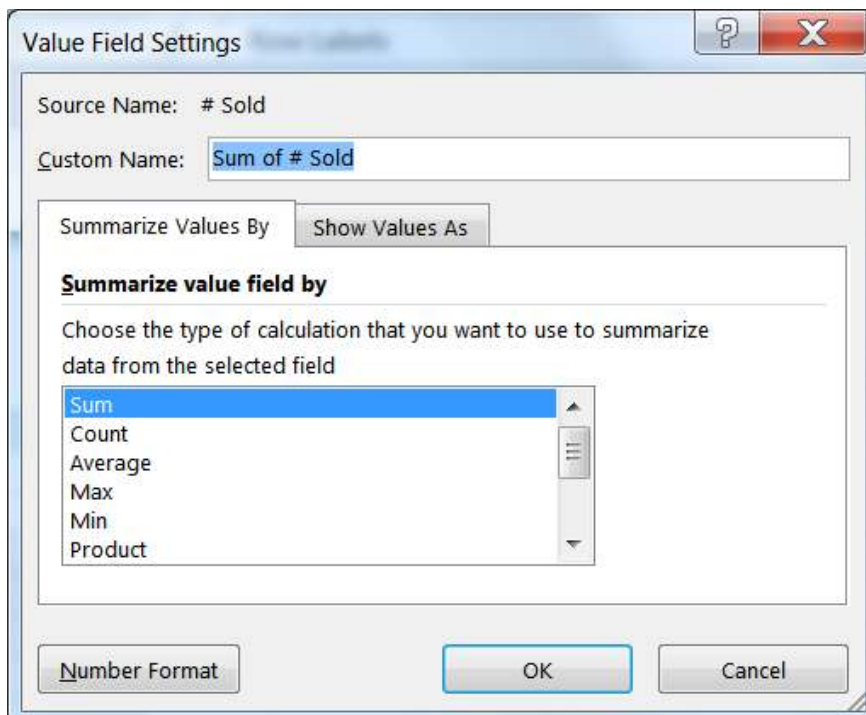
- Drag fieldname out of the area section
- Left-click on a field in the area and choose **Remove Field**

Value Field Settings

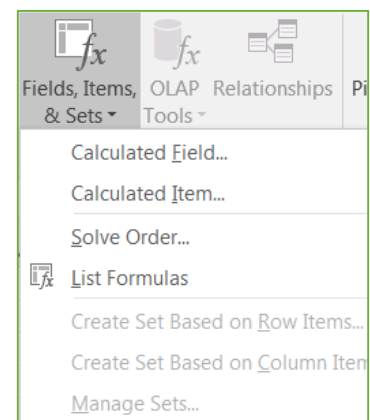
Fields added to the value section are summarized within the grouping of the row and column headings set in the PivotTable. Numbers will sum, other values will be counted. To change how the data is summarized, left-click on the fieldname in the Values area and choose **Value Field Settings**.

You can reformat your numbers with the Excel formatting tools, but if you reformat from the Value Field Settings window you'll format the Table, this means if you change the structure of your table by adding fields you won't have to reformat any new cells occupied by the table.

Page 7 of this handout discusses the **Show Values As** options.



It is possible to create other summary options, but it's beyond the scope of this class. If you would like to explore, look at the **Fields, Items, & Sets** option on the Analyze tab.



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