

Excel 2016: Large Data 1 - Sorting and Filtering



Excel 2016: Large Data 1 - Sorting and Filtering

1.5 hours

In this workshop, we will work with single and multilevel sorting; learn to use data filters to automatically show only the specified data set; and do math on our filtered data sets. This workshop also contains a very brief introduction to other summary tools such as Subtotal and Pivot Tables. This intermediate workshop assumes prior experience with Microsoft Excel.

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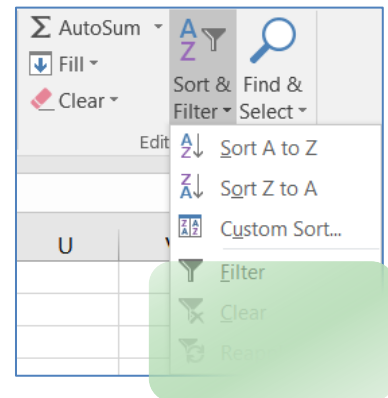
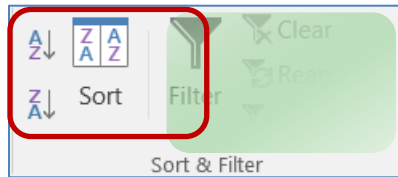
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Sorting Data

On the far right side of the **Home** tab, you will find a large Sort & Filter button. The menu you see when you Click on the button is reflected in the Sort & Filter group of the **Data** tab.

If you make a selection of cells, Excel will think you only want to sort or filter by that selection. But if your dataset has no blank rows and no blank columns Excel will see the whole range as one data set.



You can have blank cells, but not completely blank columns/rows; if you are not sure that your dataset is consistent, Click inside one cell, and press Ctrl-A. This will select all the cells within the dataset. A second "Ctrl-A", or pressing the shortcut in an empty cell, will select the entire sheet.

When you have completed a sort, you can Click the Undo button (or Ctrl-Z). Excel will undo the sort and it will select the dataset it used in the sort. This is another way to see your dataset.

Ascending Sorts

- **Text:** Sort alphabetically from A to Z
- **Numbers:** Sorts from smallest number to largest number
- **Dates:** Sorts from the newest date to the oldest date

	A	B	C
1	Apples	123	1/1/1971
2	Bananas	456	2/2/1982
3	Cherries	789	3/3/1993

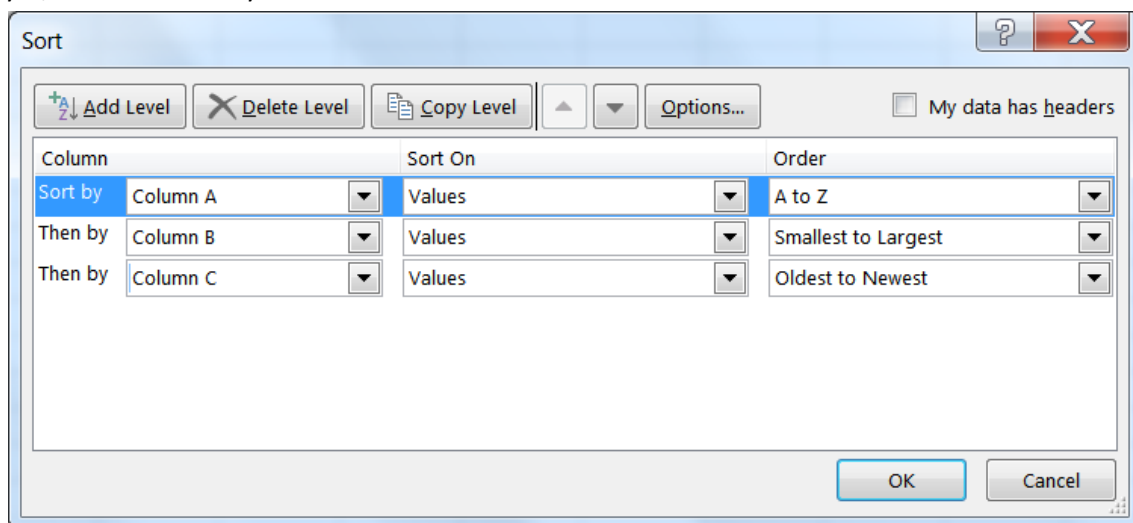
Descending Sorts

- **Text:** Sort alphabetically from Z to A
- **Numbers:** Sorts from largest number to smallest number
- **Dates:** Sorts from the oldest date to the newest date

	A	B	C
1	Cherries	789	3/3/1993
2	Bananas	456	2/2/1982
3	Apples	123	1/1/1971

Custom Sorts

When you first open this window, Excel will show the most recent sort options. If you haven't created a sort yet, this window may be blank.

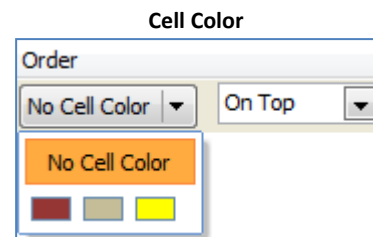
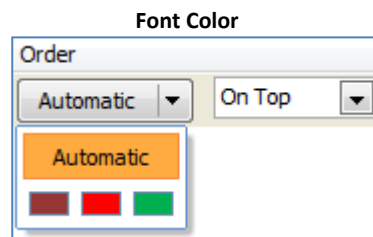
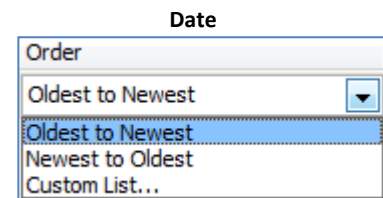
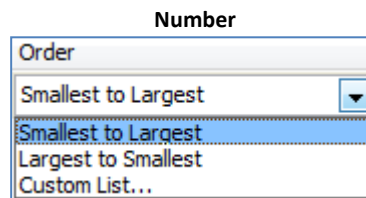
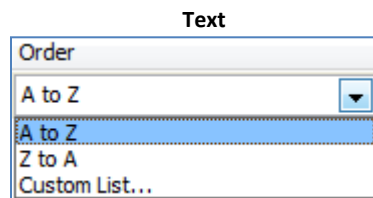
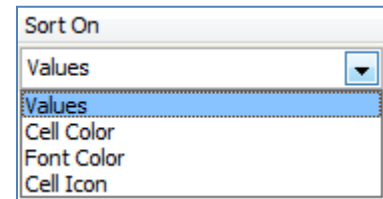


In Excel 2016, we can sort by 64 levels. From this sort window we can add levels, delete levels, copy levels, and even change the order of our sort using the up and down arrows in the toolbar.

Column: The column drop-down menu will show the names of your columns, your 'fields'. If your data does not have titles, Excel lists the column heading letters instead. If you were expecting titles, but is only showing the column letters, you can Click on the check box in the upper right hand corner of the Sort window to let Excel know your data has headers.

Sort On: You can Sort on the values of the cells, the cell colors, the font colors, or the cell icons.

Order: The order options change depending on the values in the cells.

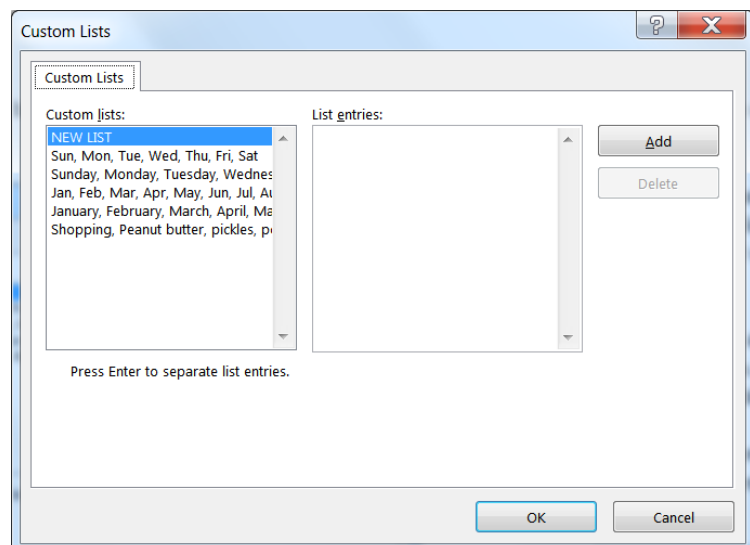


Custom Lists

Custom lists can be built through the Excel Options under the **File** menu in the **Advanced** section under **General**. Or by choosing **Custom List...** option at the bottom of each order box above.

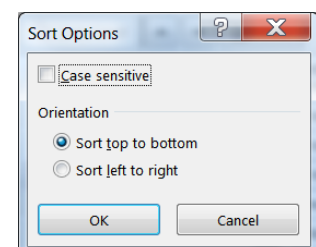
If you choose this option, you will be able to select from one of these lists. Alphabetically, April comes before January. With the Custom List order, we can ensure January comes first.

These custom lists will work as patterns with the fill handle. Notice the "Shopping" list? Once I set this up, I can type any of the words in a cell and use the fill handle to follow this pattern.



Sort Options

- **Case sensitive:** Sort lowercase letters before uppercase letters
- **Orientation:** Sort vertically (top to bottom, sort rows) or horizontally (left to right, sort columns)

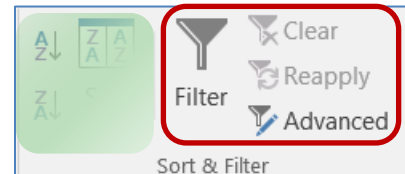
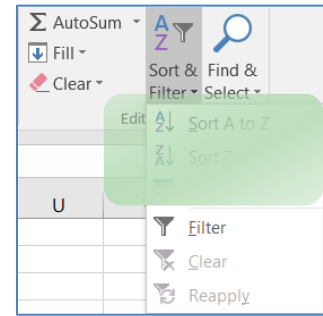


Filtering Data

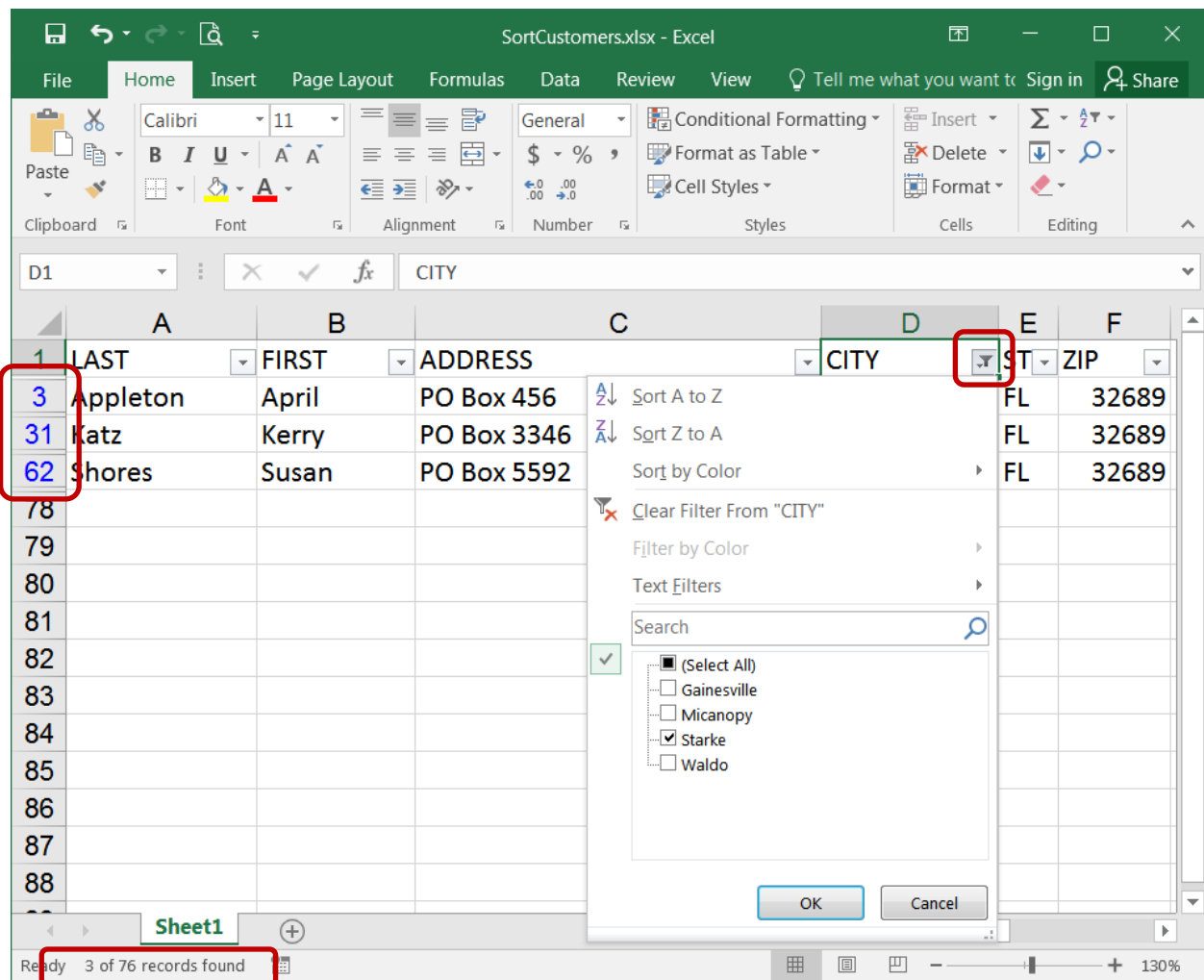
Filters hide rows (records) based on criteria you set. You can turn the filter on and off by choosing **Filter** from the **Sort & Filter** button on the Home tab, or choosing the **Filter** button on the Data tab.

Excel will place a drop-down arrow at the end of each cell in the title row (the first row of the dataset). When you Click on this arrow, we see several options including our sort orders:

- Sort Ascending, Descending, and by color
- Clear the Filter
- Filter by Color
- Set a custom filter (text, number, date)
- Search for a matching value in the column
- List of values in the column (field). **Select All** will toggle between everything and nothing.



Once a filter has been set Excel will hide all the rows that do not match the criteria. The status bar will show how many records (rows) were found that matched. The row numbers of the original data will remain the same, but will appear blue. The dropdown arrows of the columns that are being filtered will show the filter icon (funnel). The double line between the row numbers indicate hidden rows.



Custom Filters

Depending on the data in the column, you will have the option to set a custom filter based on text, numbers, and dates.

Text Filters	Number Filters	Date Filters
<u>E</u> quals...	<u>E</u> quals...	<u>E</u> quals...
Does <u>N</u> ot Equal...	Does <u>N</u> ot Equal...	<u>B</u> efore...
<u>B</u> egins With...	<u>G</u> reater Than...	<u>A</u> fter...
<u>E</u> nds With...	Greater Than <u>O</u> r Equal To...	<u>B</u> etween...
<u>C</u> ontains...	<u>L</u> ess Than...	<u>T</u> omorrow
<u>D</u> oes Not Contain...	Less Than Or Equal To...	<u>T</u> oday
<u>C</u> ustom <u>F</u> ilter...	<u>B</u> etween...	<u>Y</u> esterday
	<u>T</u> op 10...	<u>N</u> ext <u>W</u> ee <u>k</u>
	<u>A</u> bove Average	<u>T</u> his <u>W</u> ee <u>k</u>
	<u>B</u> elow Average	<u>L</u> ast <u>W</u> ee <u>k</u>
	<u>C</u> ustom <u>F</u> ilter...	<u>N</u> ext <u>M</u> on <u>th</u>
		<u>T</u> his <u>M</u> on <u>th</u>
		<u>L</u> ast <u>M</u> on <u>th</u>
		<u>N</u> ext <u>Q</u> uar <u>ter</u>
		<u>T</u> his <u>Q</u> uar <u>ter</u>
		<u>L</u> ast <u>Q</u> uar <u>ter</u>
		<u>N</u> ext <u>Y</u> ear
		<u>T</u> his <u>Y</u> ear
		<u>L</u> ast <u>Y</u> ear
		<u>Y</u> ear to <u>D</u> ate
		<u>A</u> ll Dates in the <u>P</u> eriod ▶
		<u>C</u> ustom <u>F</u> ilter...

If you choose one of the options on the Filter List with the ellipsis (...), you will see a Custom Auto Filter window such as this. From here, we can set up to two filters.

Custom AutoFilter

Show rows where:

BALANCE

equals

☒ And ☐ Or

Use ? to represent any single character
Use * to represent any series of characters

OK Cancel

Be careful with the AND/OR relationships. If you ask Excel to show the rows where the City equals Jacksonville **AND** the City equals Gainesville, you will get no results, because one cell cannot equal both values. However, if you ask for the same using the OR, Excel will show all the records for both cities. Or's tend to work for exact matches (Equals This **OR** Equals That), whereas AND's tend to work for ranges (Greater than This **AND** Less than That).

You can use the "Wildcards" ? and * to help you with your filter. ? is used for one character, * for multiple.

Equals Jacks* -> Jacksonville, Jacksonville Beach, Jackson Heights

Some of the filter choices may work just as well. I could say Contains 'Jacks' or Begins with 'Jacks'.

SUBTOTAL Worksheet Function

We can do common mathematical functions with our filtered lists using the SUBTOTAL worksheet function. The syntax is for this function is "SUBTOTAL(function_num,ref1,ref2,...)". Function_num is the number 1 to 11 that specifies which 'function' to use in calculating subtotals within a list (see below). The ref1, ref2... are the ranges of data that should be used in the equation, there can be up to 29 different ranges used in this function.

Function_Num	Function	Function_Num	Function
1	AVERAGE	7	STDEV
2	COUNT	8	STDEVP
3	COUNTA	9	SUM
4	MAX	10	VAR
5	MIN	11	VARP
6	PRODUCT		

Function numbers 1 through 11 will include manually hidden rows, ones you have hidden yourself. Function numbers 101-111 will exclude your hidden rows from the function. Filtered-out rows are always excluded.

	A	B	C	D	E	F
1	Sum	1411		SubSum	1411	
2	Average	8.70987654		SubAvg	8.70987654	
3	Count	162		SubCount	162	
4						
5	Quarter	Item	Size	Color	# Sold	
6	1st Quarter	blouses	Large	Blue	14	
7	1st Quarter	blouses	Large	Red	6	
8	1st Quarter	blouses	Large	White	10	
9	1st Quarter	blouses	Medium	Blue	2	
10	1st Quarter	blouses	Medium	Red	4	

	A	B	C	D	E	F
1	Sum	1411		SubSum	24	
2	Average	8.70987654		SubAvg	8	
3	Count	162		SubCount	3	
4						
5	Quarter	Item	Size	Color	# Sold	
43	2nd Quarter	pants	Large	Red	8	
46	2nd Quarter	pants	Medium	Red	6	
49	2nd Quarter	pants	Small	Red	10	
168						
169						

	A	B	C	D	E
1	Sum	=SUM(E5:E168)		SubSum	=SUBTOTAL(9,E5:E168)
2	Average	=AVERAGE(E5:E168)		SubAvg	=SUBTOTAL(1,E5:E168)
3	Count	=COUNT(E5:E168)		SubCount	=SUBTOTAL(2,E5:E168)
4					
5	Quarter	Item	Size	Color	# Sold
43	2nd Quarter	pants	Large	Red	8
46	2nd Quarter	pants	Medium	Red	6
49	2nd Quarter	pants	Small	Red	10
168					
169					

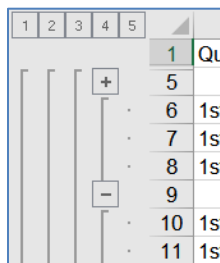
Other Summary Tools

Subtotal Outlines

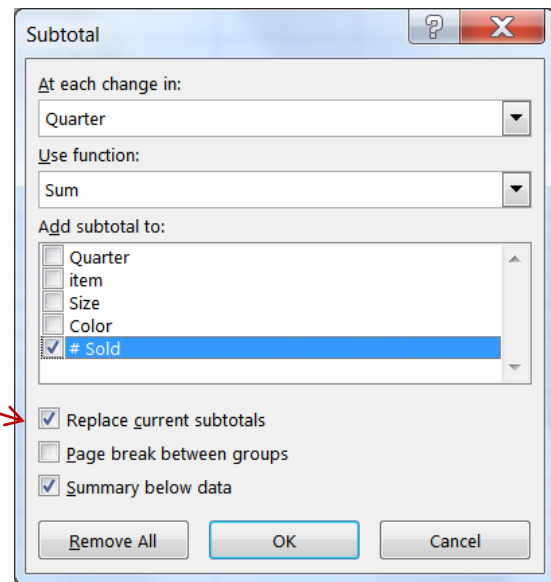
One way to sum up a large set of data is to use the **Subtotal** tool in the **Outline** group of the **Data** tab. This tool will total sets of related data and insert a subtotal row into the sheet at each change in the column of your choosing. It will also create a grand total at the bottom of the dataset.

This tool is very particular about your sort order. If you are going to group a column, make sure it is sorted first.

Also, pay attention to the **Replace Current Subtotals** option, as it does erase the previous totals.



Excel adds outline symbols to the left side of the worksheet. The numbers represent the outline level, the plus is used to expand a group, and the minus is to collapse a group.

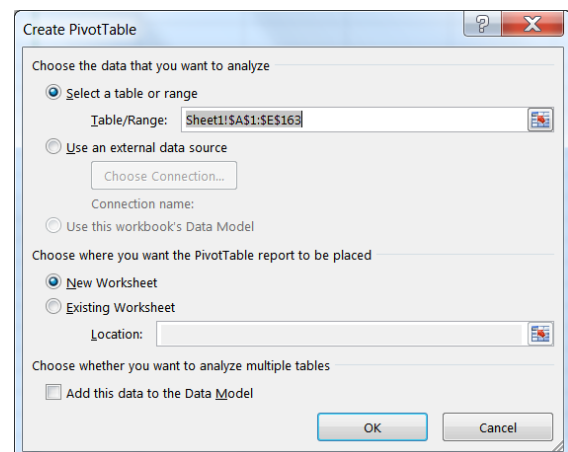


Pivot Tables

Another amazing summary tool built into Microsoft Excel is the Pivot Table. You will find this button at the beginning of the Insert tab.

By default, this tool will create a new sheet with a blank table on it. You can use the Pivot Table field list to decide where your field names (titles) should be placed as labels and summarizing the values as needed.

Every field of the pivot table can be filtered, and once you have multiple levels as seen below, you will see the collapse/expand buttons as with the Subtotal Outline.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2														
3	Sum of # Sold													
4														
5		Blue	Red	White		Blue	Red	White		Blue	Red	White		
6	1st Quarter	26	30	26	82	15	21	18	54	36	24	30	90	226
7	Blouses	14	6	10	30	2	4	3	9	18	14	16	48	87
8	Pants	2	6	2	10	5	7	6	18	12	8	10	30	58
9	Socks	10	18	14	42	8	10	9	27	6	2	4	12	81
10	2nd Quarter	18	31	21	70	30	19	24	73	26	32	30	88	231
11	Blouses	3	5	4	12	16	12	14	42	10	2	6	18	72
12	Pants	6	8	7	21	10	6	8	24	2	10	6	18	63
13	Socks	9	18	10	37	4	1	2	7	14	20	18	52	96
14	3rd Quarter	42	62	48	152	39	49	39	127	66	54	58	178	457
15	Blouses	8	21	13	42	15	26	18	59	14	12	12	38	139
16	Pants	14	20	19	53	17	13	12	42	22	18	20	60	155
17	Socks	20	21	16	57	7	10	9	26	30	24	26	80	163
18	4th Quarter	62	73	58	193	42	62	48	152	44	61	47	152	497
19	Blouses	6	31	12	49	8	21	13	42	17	11	14	42	133
20	Pants	20	26	29	75	14	20	19	53	8	14	9	31	159
21	Socks	36	16	17	69	20	21	16	57	19	36	24	79	205
22	Grand Total	148	196	153	497	126	151	129	406	172	171	165	508	1411
23														

PivotTable Fields

Choose fields to add to report:

Search

☒ Quarter

☒ Item

☒ Size

☒ Color

Drag fields between areas below:

FILTERS

COLUMNS

Size

Color

ROWS

Quarter

Item

VALUES

Sum of # Sold

☐ Defer Layout Update

UPDATE

Ready

Sheet2

Sheet1

+

Ready

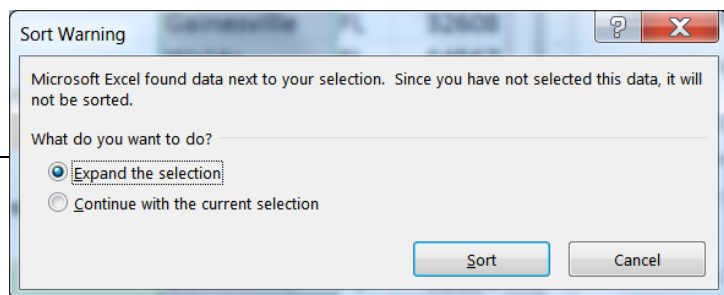
100%

Class Exercise

- Open file SortCustomers.xlsx

Simple Sorts

- Click in the title CITY in cell D1
- Home Tab -> Sort and Filter -> Sort A to Z (ascending)
- Undo
 - Sort is "undone" and data set that was sorted is selected
- Select Column D (city)
- Home Tab -> Sort and Filter -> Sort A to Z (ascending)
 - Say OK to the message
- Undo



Default Sort Order

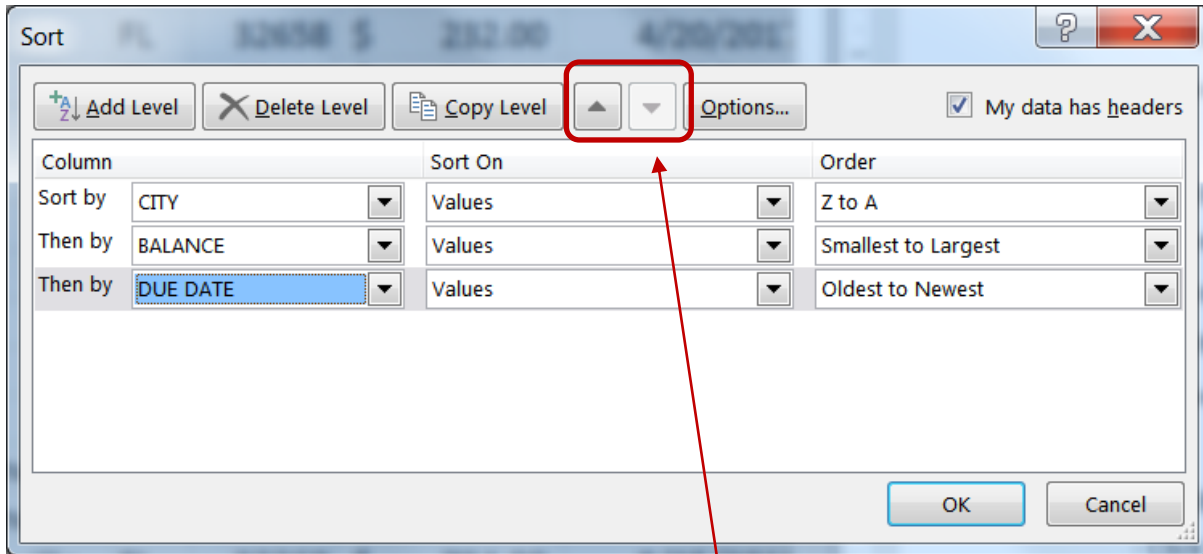
- Right-Click Column A (LAST)
- Insert a Column
- Title the new column SORT (A1)
- In A2 type: 1
- In A3 type: 2
- Select both numbers
- Double-Click the fill handle to copy the pattern to the end of the data set
- Sort by column CITY
- Sort by column SORT
- Delete Column A

Blank Columns (every column should have a heading)

- Select Column B (FIRST)
- Insert a Column
- Sort by CITY Z to A (descending) - Notice the first and last names no longer match up
- **Undo** - Notice the last name column is left out of the selection
- In B1 type: SUFFIX
- Sort by City Z to A
- Undo until the new column (SUFFIX) is gone

Custom Sort - Multiple levels

- Click on the large sort button on the Data tab
- Set the sort order for CITY, BALANCE, and DUE DATE
 - Use the Add Level buttons to create new lines
- View the Results



Custom Sort - Rearranging

- Open the Custom Sort again
- Select the DUE DATE row and use the arrows to move it ▲ ▼
- Set the sort order for CITY, DUE DATE, and BALANCE
- View the Results

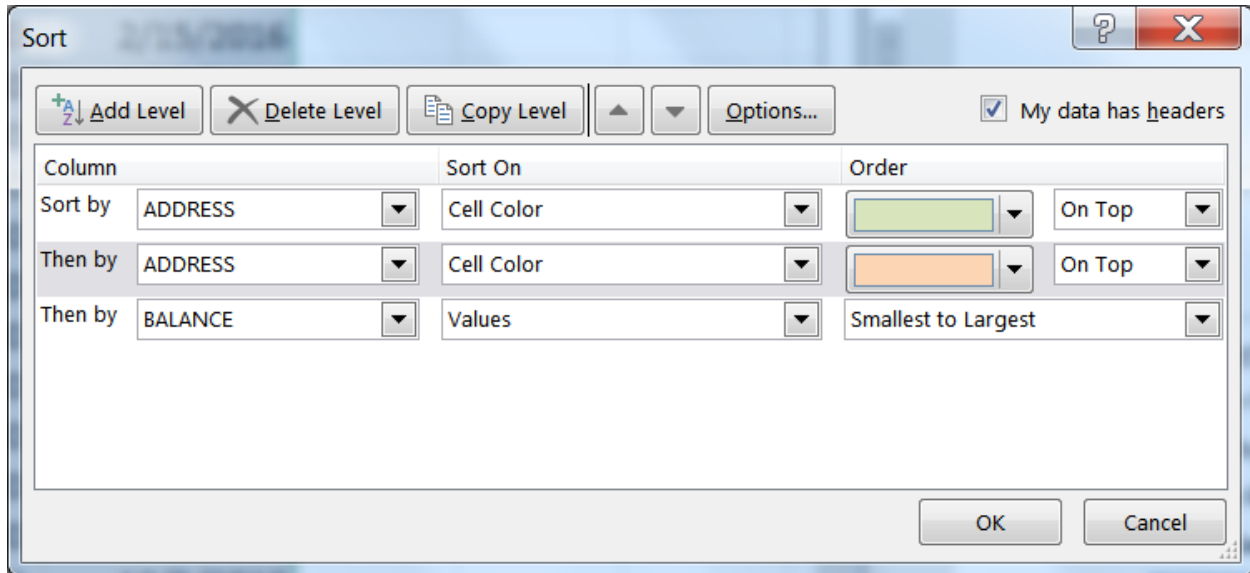
	E	F	G	H	I
1	CITY	ST	ZIP	BALANCE	DUE DATE
2	Gainesville	FL	32608	\$ 501.00	1/15/2016
3	Gainesville	FL	32684	\$ 51.00	2/15/2016
4	Gainesville	FL	32597	\$ 80.00	2/15/2016
5	Gainesville	FL	32597	\$ 157.00	2/15/2016
6	Gainesville	FL	32684	\$ 131.00	3/15/2016
7	Gainesville	FL	32655	\$ 270.00	3/15/2016
8	Gainesville	FL	32732	\$ 532.00	3/20/2016

Custom Sort - Resetting

- Click in the Column A (LAST)
- Click the Ascending button
- Open the Custom Sort window
 - Sort order has been reset


Custom Sort - by Color

- Open the Custom Sort window
- Sort by Address, Sort on Cell Color, Order Green "On Top"
- **Copy Level** and set the Order to Peach "On Top"
- **Add Level** -> Balance, smallest to largest



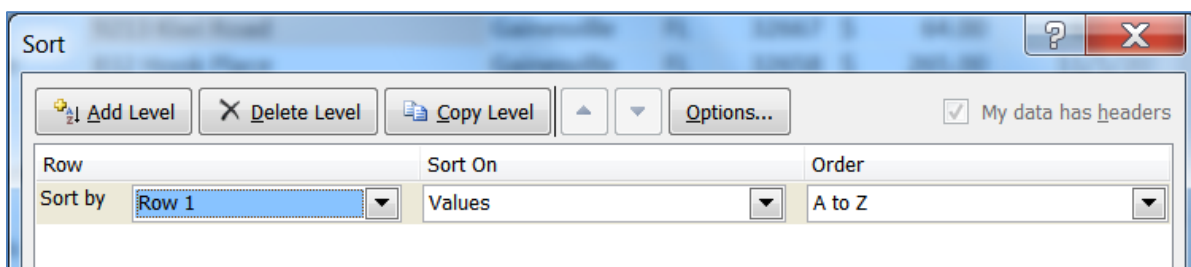
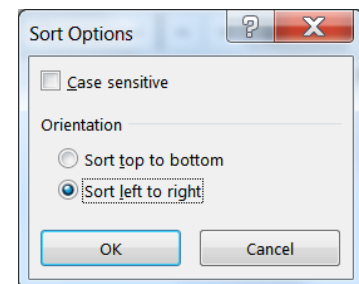
- View the Results

Reset to our default sort order

- Click in the column A (LAST)
- Click the Ascending button 

Custom Sort - Left to Right

- Open Custom Sort Window
- Click on the **Options...** button
- Change orientation to **Sort left to right**
- Click OK
- Sort by Row 1, A to Z



- Columns have rearranged to Address through Zip

Custom Sort - Left to Right

- Select Row 2, and Insert a row
- Number the cells: 3, 8, 4, 7, 1, 2, 5, 6


	A	B	C	D	E	F	G	H
1	ADDRESS	BALANCE	CITY	DUE DATE	FIRST	LAST	ST	ZIP
2	3	8	4	7	1	2	5	6
3	6831 NW 4th Ave	\$ 236.00	Gainesville	2/10/2017	Annie	Adams	FL	32655
4	PO Box 456	\$ 467.00	Starke	9/25/2018	April	Appleton	FL	32689
5	234 SE 45th Road	\$ 128.00	Gainesville	12/5/2017	Arnold	Arlington	FL	32597
6	234 Peter Pan Trail	\$ 17.00	Gainesville	3/25/2017	Bobbie	Brown	FL	32597
7	3243 SE 4th Ter	\$ 106.00	Gainesville	5/5/2016	Butch	Bruce	FL	32608

- Open Custom Sort Window
- Sort by Row 2
- View the result

Custom Sort - Left to Right - Selection

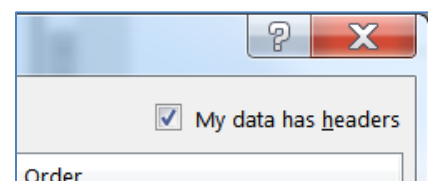
- Select Columns A and B (FIRST and LAST)
- Open Custom Sort window
- Sort by Row 2, Largest to Smallest
- Repeat for Columns G and H (DUE DATE and BALANCE)
- Delete Row 2

Reset to our default sort order

- Click in the Column A (LAST)
- Click the Ascending button 
- Title row disappears
 - LAST has shuffled down to the L's
- Undo the sort

My data has headers

- Open the custom sort window
- Sort by only lists the column letters for the 8 columns in our dataset
 - (if it is still offering rows, change the options)
- In the upper right of the window Click the **My data has headers** checkbox
- Sort by LAST, A to Z

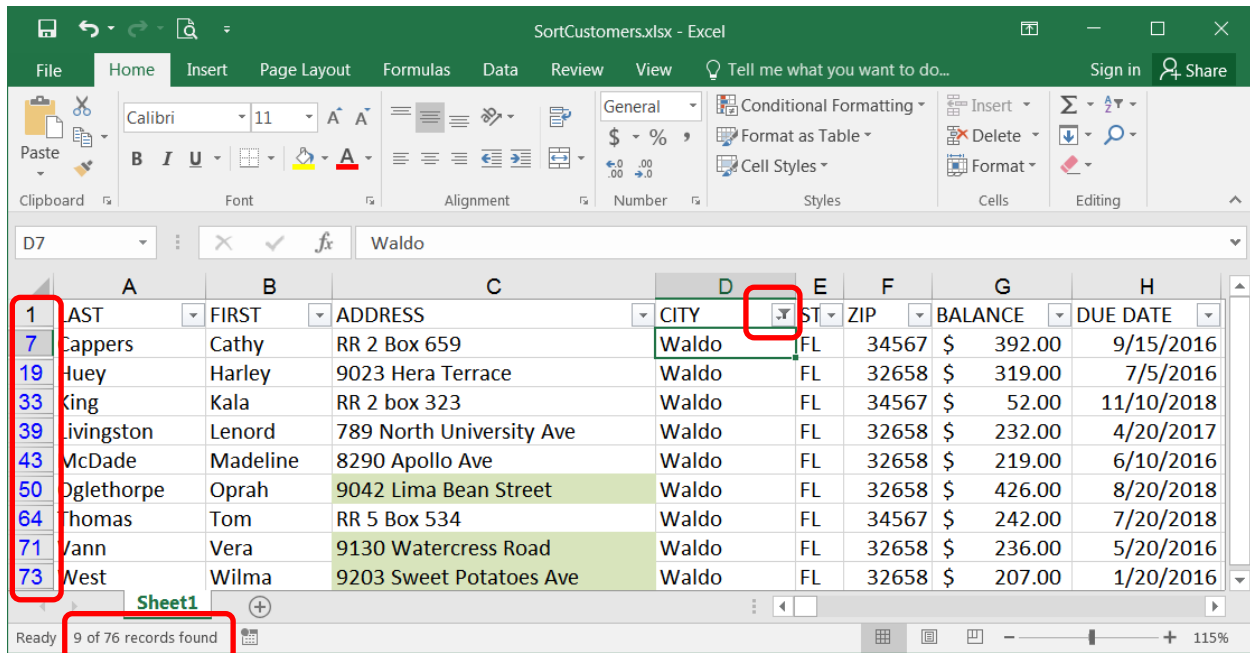


Start over

- Exit Microsoft Excel
- **DO NOT SAVE**

Instant Filter

- Open SortCustomers.xlsx
- Right-Click on a city of **Waldo**
- Choose Filter -> Filter by Selected Cell's Value



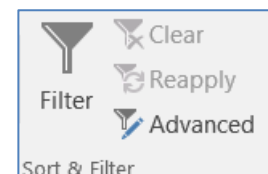
- *** Filter arrows appear on all columns of the data set
- *** All rows not matching the criteria have disappeared
- *** Row numbers turn blue, but maintain original cell numbers
- *** Bottom of the window shows how many records (rows) match

Turn the Filter Off

- From the **Sort & Filter** button on the **Home** tab, choose **Filter**
- *** All filter signs will disappear

Filter by Unchecking

- Click the large **Filter** button on the **Data** tab
- From the City drop down, uncheck *Jacksonville*, Click OK (67 records)
- From the City drop down, uncheck *Gainesville*, Click OK (12 records)
- From the City drop down, check *Select All*, Click OK

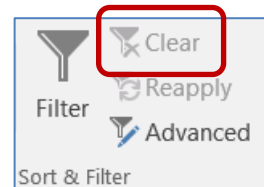


Filter by (Un)Select all

- from the Zip drop down
 - uncheck *Select All*
 - check 32608
- Click OK (12 records)

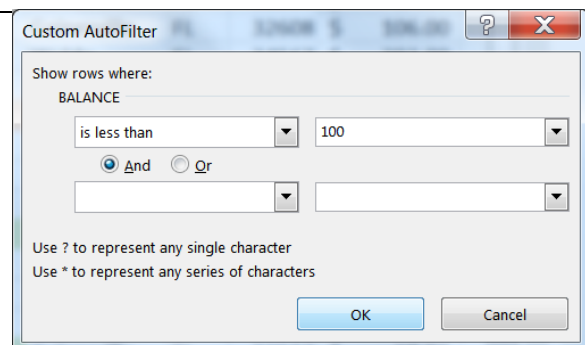
Adding another filter

- Keep the 32608 filter
- from the City drop down, uncheck *Jacksonville*
- Click OK (9 records)
- from the **Data** tab, choose the filter **Clear** button



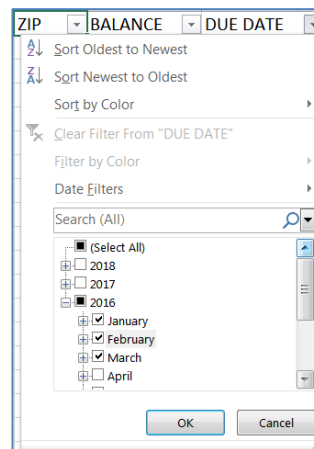
Custom number filter

- Balance drop down
- choose Number Filter
- choose Less than, type in 100
- Click OK (12 records)
- **Clear the filter**



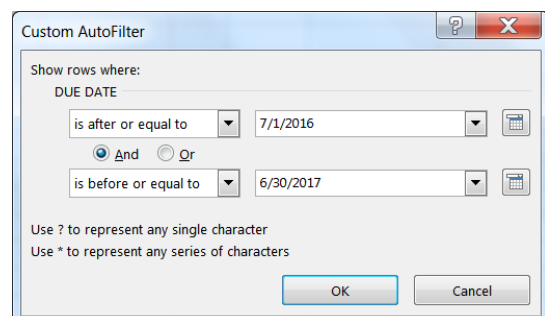
Date filter

- Due Date drop down
- uncheck *Select All*
- use the expand (+) buttons to open the dates
- check the first three months of 2016
- Click OK (11 records)



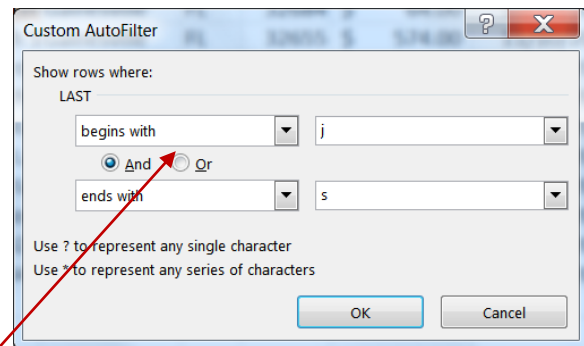
Custom date filter

- From the Due Date drop down, choose *Date Filters*
- Choose Between
- type in 7/1/2016, type in 6/30/2017
- Click ok (23 records)
- **Clear the filter**



Custom text filter

- From the Last drop down, choose *Text Filter*
- Choose *Begins with*, type J
 - Click ok (10 records)
- From the Last drop down, choose *Text Filter*
- Choose *Ends with*, type S
 - Click ok (21 records)
- From the Last drop down, choose *Text Filter*
- Choose *Begins with*, type J
- On the second line choose *Ends with*, type S
- Click ok (6 records)
- From the Last drop down, choose *Text Filter*
- Choose *Custom Filter*
- Change the bubble (radio button) to **OR**
- Click ok (25 records)



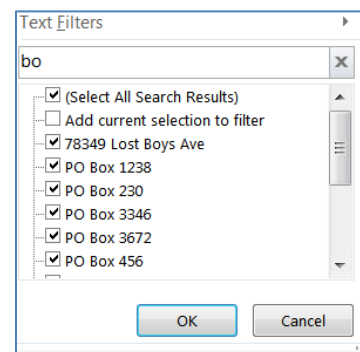
- **Clear the filter**

Custom text filter

- From the Address drop down, choose *Text Filter*
- Choose **Contains**, type Box
 - Excel is not case sensitive. BOX = Box = box
- Click ok (12 records)
- **Clear the filter**

Search filter

- From the Address drop down, Click inside the **Search** box
- Type box
 - **** Type it slowly, one letter at a time to see the list get smaller as you go
- Click ok (12 records)
- **Clear the filter**

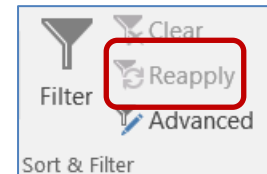


Filter by Color

- From the Address drop down, choose Filter by color
- Choose the green addresses (13 records)
- **Clear the filter**

Refreshing Filtered Data

- From the Balance drop down, choose Number Filter
- Choose **Greater Than**, type 600
- Click ok (4 records)
- Change Edgar's balance to 300
- From the **Data** tab, choose the filter **Refresh** button (3 records)
- **Clear the filter**



Copying filtered data

- | | |
|---|---|
| <ul style="list-style-type: none">- Use the filter tools to find these <u>7 records</u>:<ul style="list-style-type: none">- Balance under 300- Address color has no fill- Due Date in 2018- Select All, Copy- Create a new worksheet- Paste in Cell A1 | <ul style="list-style-type: none">- Use the filter tools to find these <u>9 records</u>:<ul style="list-style-type: none">- Balance under 350- Address color has no fill- Due Date in 2017- Select All, Copy- Turn to Sheet 2- paste in Cell A11 |
|---|---|
- Return to Sheet 1 and **Clear the filter**

	A	B	C	D	E	F	G	H
1	LAST	FIRST	ADDRESS	CITY	ST	ZIP	BALANCE	DUE DATE
2	Adams	Annie	6831 NW 4th	Gainesville	FL	32655	\$ 236.00	2/10/2017
4	Arlington	Arnold	234 SE 45th R	Gainesville	FL	32597	\$ 128.00	12/5/2017
5	Brown	Bobbie	234 Peter Pan	Gainesville	FL	32597	\$ 17.00	3/25/2017
10	Dawson	Debbie	832 Hook Plac	Gainesville	FL	32658	\$ 265.00	11/15/2017
39	Livingston	Lenord	789 North Uni	Waldo	FL	32658	\$ 232.00	4/20/2017
51	Owens	Orville	723 SW 35th I	Gainesville	FL	32655	\$ 17.00	6/5/2017
60	Saunders	Samuel	9303 Neverlar	Jacksonville	FL	32268	\$ 331.00	7/15/2017
69	Tweed	Thomas	PO Box 5678	Gainesville	FL	32689	\$ 156.00	9/15/2017
70	Van Gogh	Vincent	PO Box 230	Gainesville	FL	32684	\$ 91.00	1/10/2017

Notice the copy lines do not go between contiguous rows.

- In Sheet 2, Select ALL of the sheet
 - AutoFit the column widths
 - Double-Click between column headings

Filter on one data set

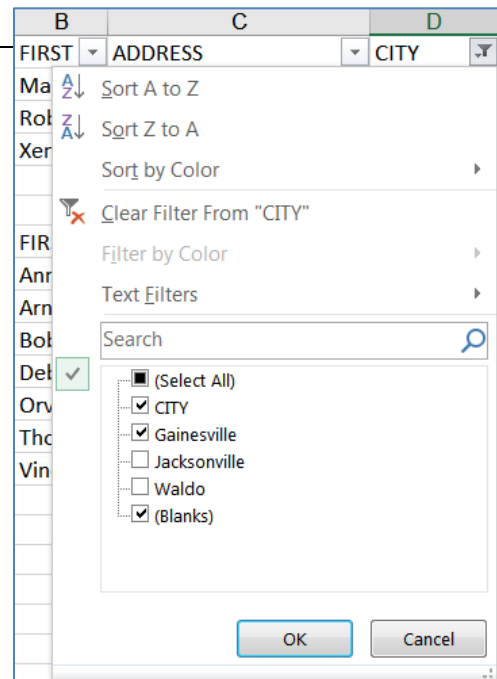
- Move to Cell A1 (Ctrl Home)
- Turn on the filter
- From the City drop down, uncheck *Gainesville*
- Click ok (4 records)
 - ****Gainesville only disappears from the first list because of the gap
- **Turn off the filter**

Filter on multiple data sets

- Select all the data columns (not just the data, all the columns A:H)
- Turn on the filter
 - Autofit again
- From the City drop down, uncheck *Gainesville*
- Click ok (6 people)
 - ****Gainesville disappears from both lists, but the record count is wrong
- **Clear the filter**

Filter including gap

- From the City drop down, uncheck *Select All*
- From the City drop down, check *Gainesville*
- From the City drop down, check *(Blanks)*
- From the City drop down, check *City*
- From the City drop down, uncheck *Gainesville*
- From the City drop down, check *Jacksonville*



Start over

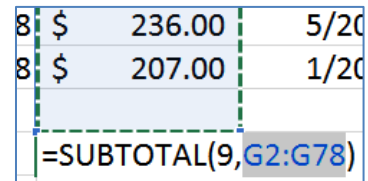
- Exit Microsoft Excel
- **DO NOT SAVE**

Set up Grand Total

- Open file SortCustomers.xlsx
- Turn on the Filter
- Go to Cell H79, Type SubTotal
- Go to Cell H80, Type Total
- Go to Cell G80, press the AutoSum button Σ (on the Home or Formulas tab)
- Modify equation to stop at row 78
 - **** =SUM(G2:G78)
- Result: \$23,192.00

Set up SubTotal

- Return to the top of the worksheet (Ctrl-Home)
- Set City filter to show only Waldo
- Go to Cell G79, press the AutoSum button Σ
 - **** See Page 5 for details on the SubTotal Worksheet Function
- Result: \$2,325.00



8	\$	236.00	5/20
8	\$	207.00	1/20
		=SUBTOTAL(9,G2:G78)	

Viewing the different Subtotals

- From the City drop down, set it so you can only see Starke
 - Result: \$1,290.00
- From the City drop down, set it so you can only see Jacksonville
 - Result: \$3,506.00
- From the City drop down, set it so you can only see Gainesville
 - Result: \$16,071.00
- **Clear the filter**

Start over

- Exit Microsoft Excel
- *DO NOT SAVE*

SubTotal Worksheet Function Exercise

- Open file SortSales.xlsx

- 1) Insert four rows at the top of the worksheet
 - a. Select the first four rows
 - b. Right-Click inside the select and choose INSERT

- 2) Create this table:

	A	B	C	D	E	
1	Sum			SubSum		
2	Average			SubAvg		
3	Count			SubCount		
4						
5	Quarter	item	Size	Color	# Sold	
6	1st Quarter	blouses	Large	Blue	14	

- 3) Click inside the dataset, turn on the Filter

- 4) Use the filter tools to find these 3 records:

- Quarter: 2nd Quarter
- Item: Pants
- Color: Red

- 5) Build the following equations

	A	B	C	D	E
1	Sum	=SUM(E5:E168)		SubSum	=SUBTOTAL(9,E5:E168)
2	Average	=AVERAGE(E5:E168)		SubAvg	=SUBTOTAL(1,E5:E168)
3	Count	=COUNT(E5:E168)		SubCount	=SUBTOTAL(2,E5:E168)
4					
5	Quarter	Item	Size	Color	# Sold
43	2nd Quarter	pants	Large	Red	8
46	2nd Quarter	pants	Medium	Red	6
49	2nd Quarter	pants	Small	Red	10
168					
169					

*You have to go above and below the showing numbers so that you include all the hidden cells!
If you only use E43:E49 you will lose all the data currently hidden.*

- 6) View Page 5 for the "answers"
- 7) Clear the filter, the numbers in Column E should match the numbers in Column B