

Excel Core

Session 2

Data!

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Data!

Open Session 2 -> Scratch

Create Data

When you create the structure of a data range, or a series of formulas, you can automate the process of completing data patterns (such as January, February, March) or copying calculations from one row or column to those adjacent. Automation saves time and can help prevent human errors.

You can quickly fill adjacent cells with data that continues a formula or a series of numbers, days, or dates, either manually from the Fill menu, or automatically by dragging the fill handle. When copying or filling data by using the Fill menu commands, you can set specific options in the Series dialog box for the pattern of the data sequence you want to create.

To create a custom fill series:

1. On the Advanced page of the Excel Options dialog box, in the General area, click the Edit Custom Lists button.
2. In the Custom Lists dialog box, enter the fill series elements in the List entries box, pressing Enter after each.
3. In the List entries list, verify or edit the entries. Click Add, and then click OK in each of the open dialog boxes.

Flash Fill

If you give Excel a hint of what the new data should look like, you can fill the rest of the data without any additional formulas. On tab Names - for example:

C2				Lincoln
	A	B	C	D
1	Full Name	First Name	Last Name	
2	Abe Lincoln	Abe	Lincoln	
3	Benjamin Franklin	Benjamin		
4	Carl Sagan	Carl		
5	David Duckworth	David		
6				
7				

Sorting Lists

You can sort and filter information in Excel by creating a table. There are a few rules to follow. Make sure you have a Blank row at the end of the table. DO NOT leave a blank row after the column headings and before the data. DO leave a blank row after all the records and before any totals. Each column must have a field name (label at the top of the data indicating the contents of that column) and it must be unique.

To sort in a list by one item:

- ◆ Click into a cell in the table in the column you first want to sort on
- ◆ On the Home Tab of the Ribbon, in the Editing Section, click on “Sort & Filter”

To sort in a list by multiple items:

- ◆ Click into a cell in the table you want to sort
- ◆ Click on the dropdown on the “Sort & Filter” icon and select “Custom Sort”
- ◆ In the drop down, select on the column to sort on and order
- ◆ Click on “Add Level” to sort on additional columns.
- ◆ Click on OK

The screenshot shows an Excel spreadsheet with a table containing 18 rows of data. The columns are labeled: OrderID, ProductID, UnitPrice, Quantity, Discount, and ExtendedPrice. A 'Sort' dialog box is open, showing the following settings: 'Sort by' is set to 'OrderID', 'Sort On' is set to 'Cell Values', and 'Order' is set to 'Smallest to Largest'. The 'My data has headers' checkbox is checked. The dialog box also includes buttons for 'Add Level', 'Delete Level', 'Copy Level', 'Options...', 'OK', and 'Cancel'.

To filter contents:

- ◆ Select any cell in the table
- ◆ Click on the dropdown on the “Sort & Filter” icon and select “Filter”
- ◆ Click on any dropdown arrow for the field you want to use to filter and choose a filter from the criteria dropdown list.
- ◆ To see all records again, reset all filter criteria to “all”

	A	B	C	D	E	F	G
	OrderID	ProductID	UnitPrice	Quantity	Discount	ExtendedPrice	
3	11100	41	\$24.00	1	0.00	\$24.00	
4	11100	43	\$20.00	1	0.00	\$20.00	
5	11100	109	\$4.50	1	0.00	\$4.50	
5							
6							

Advanced Filter

The screenshot shows the 'Advanced Filter' dialog box in Microsoft Excel. The background is a data table with columns: OrderID, ProductID, UnitPrice, Quantity, Discount, and ExtendedPrice. The dialog box has the following fields:

- Action:** ☒ Filter the list, in-place; ☐ Copy to another location
- List range:** \$A\$6:\$F\$219
- Criteria range:** \$A\$1:\$F\$3
- Copy to:** (empty)
- ☐ Unique records only
- Buttons:** OK, Cancel

The criteria range \$A\$1:\$F\$3 contains the following criteria:

OrderID	ProductID	UnitPrice	Quantity	Discount	ExtendedPrice
			>2		<10

Located Data Tab -> Sort & Filter -> Advanced

Each Line is an “or” for the filter

Subtotals

You can automatically calculate subtotals and grand totals in a list for a column by using the **Subtotal** command.

IMPORTANT:

The **Subtotal** command will appear grayed out if you are working with a Microsoft Excel table. To add subtotals in a table, you must first convert the table to a normal range of data, and then add the subtotal. Note that this will remove all table functionality from the data except table formatting.

When you insert subtotals:

- **Subtotals** are calculated with a summary function, such as **Sum** or **Average**, by using the SUBTOTAL function. You can display more than one type of summary function for each column.
- **Grand totals** are derived from detail data, not from the values in the subtotals. For example, if you use the **Average** summary function, the grand total row displays an average of all of the detail rows in the list, not an average of the values in the subtotal rows.

1	2	3		A	B
				1	Sport Sales
				2	Golf \$5,000
				3	Golf \$2,000
				4	Golf \$1,500
				5	Golf Total \$8,500
				6	Safari \$9,000
				7	Safari \$4,000
				8	Safari Total \$13,000
				11	Tennis Total \$2,000
				12	Grand Total \$23,500

If the workbook is set to automatically calculate formulas, the **Subtotal** command recalculates subtotal and grand total values automatically as you edit the detail data. The **Subtotal** command also outlines the list so that you can display and hide the detail rows for each subtotal.

Create a PivotTable

Open the tab Trees.

If you have limited experience with PivotTables, or are not sure how to get started, a **Recommended PivotTable** is a good choice. When you use this feature, Excel determines a meaningful layout by matching the data with the most suitable areas in the PivotTable. This helps give you a starting point for additional experimentation. After a recommended PivotTable is created, you can explore different orientations and rearrange fields to achieve your specific results. The Recommended PivotTables feature was added in Excel 2013.

	A	B	C	D	E	F	G	H
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								

	A	B	C	D	E	F	G	H
1	Month	(All)						
2								
3	Sum of Quantity	Type						
4	County	Blue Spruce	Concolor Fir	Frazier Fir	Scotch Pine	White Pine	Grand Total	
5	Cook		22000				22000	
6	Itasca	65000	13500		15000	15500	109000	
7	Lake	16600		22000		32000	70600	
8	St. Louis	15000		6500		63500	85000	
9	Grand Total	96600	35500	28500	15000	111000	286600	
10								

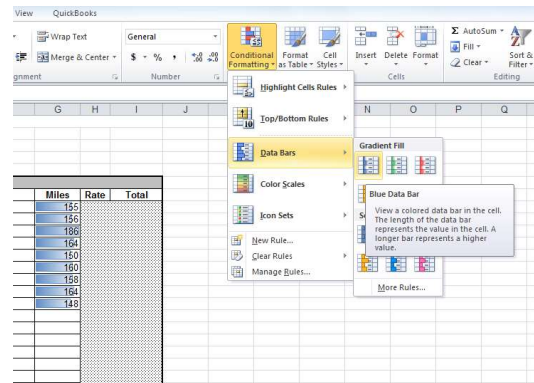
In the **Field Name** area at the top, select the check box for any field you want to add to your PivotTable. By default, non-numeric fields are added to the **Row** area, date and time fields are added to the **Column** area, and numeric fields are added to the **Values** area. You can also manually drag-and-drop any available item into any of the PivotTable fields, or if you no longer want an item in your PivotTable, simply drag it out of the Fields list or uncheck it.

Conditional Formatting

Go to Conditional Formatting Tab

To create conditional formatting:

- ◆ Select the cell or range of cells that you want formatting to appear in. (Column G)
- ◆ Click on the “Home” Tab, Select Conditional Formatting in the Styles section.
- ◆ A gallery appears on the many different types Conditional Formatting that are available. Look through the options of Data Bars, Color Scales, Icon Sets.



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of
and

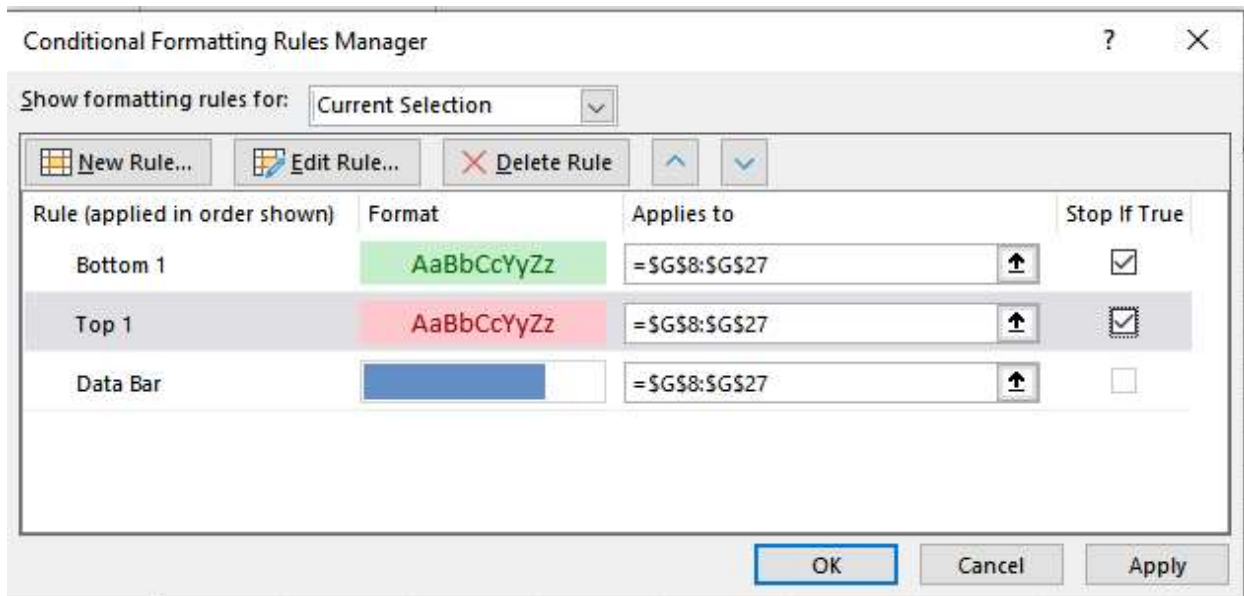
Change or adjust the rules of the Conditional:

- ◆ Click the Conditional Formatting button and go to the “Manage Rules...” Menu Item
- ◆ Use the Edit Rule... button to change how the format behaves (color or style)
- ◆ Click on OK – Click on OK again.

Add in additional Conditions

What if we want the highest mileage to be red and the lowest mileage to be green. We can add additional rules.

- ◆ Click the Conditional Formatting button and go to the “Manage Rules...” Menu Item
- ◆ Click on New Rule...
- ◆ Select “Format only top or bottom ranked values”
- ◆ Change the 10 to a 1 and select the Format... button
- ◆ Change the Font style to Bold and the Fill to Red
- ◆ Do the same thing for the Bottom 1 making it Bold and Green. The Rules manager should look like below.
- ◆ The “Stop if True” says no additional formatting will occur to the cells that already match this condition.
- ◆ The Order from Top to Bottom is how the rules are applied. If they are not in the correct order, use the blue button at the top to adjust the rules placement.



Tables

Use the tab “More data”

Select anywhere in the data – then go to Insert->Table

	B	C	D	E	F	
	Column1	Jan-00	Feb-00	Mar-00	Apr-00	Ma
	Smith	18,000	19,500	24,500	24,833	2
	Jones	18,500	17,000	19,250	19,000	1
	Peterson	12,000	11,300	12,500	12,433	1
	Hanson	25,000	27,000	30,000	22,800	3

When you create a table, you can apply a combination of formatting elements called a *table style*. The table style includes fonts, borders, and fills that are coordinated to provide a professional appearance. The available table styles are based on the worksheet theme colors. You can change the table style by choosing another from the Table Styles gallery.

With tables, you can move columns by selecting and dragging- Select the table column you want to move, and point to the top edge of the column. When the cursor changes to a four-headed arrow, drag the column to the new location (indicated by a thick vertical insertion bar).

Adding a column is as simple as going to the column after the one you want to add and start typing! Excel is smart enough to know that the new information should be part of the table!

Since the table is filled with data – Excel figures you *may* want to Total items on the bottom. This is as simple as selecting the “Total Row” on the Table Style Options. This gives a dropdown that can do more than just add totals.

Remove Duplicates

Go to tab -> Remove Duplicates

When working with data – sometimes we will get duplicates in the data. Since we may only want unique values – we can ask Excel to do that.

Table Design -> Tools -> Remove Duplicates