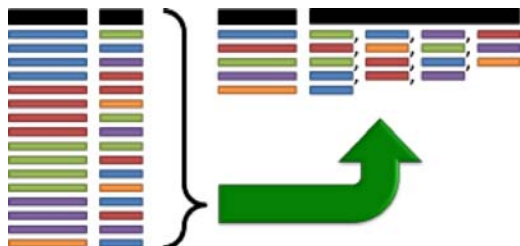


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How to Combine Data from Multiple Rows into One Cell

BY ANDREW ROBERTS



Often, our data comes to us in ways that are better for calculating than they are for reading. One example of this is a standard data table that repeats headers and labels for each row. When we are sorting, alphabetizing, and filtering, this format is incredibly useful. However, when we want to read a summary of the information, these tables are difficult to work with. Sometimes, it is better to have all the options in a table listed in a comma-separated list rather than broken out across

many rows. Unfortunately, Excel doesn't have a simple function to make this possible. Here is a quick set of data manipulation steps that will build a comma-separated list in a single cell from multiple rows of data...

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list of all the makes and models of cars available in the U.S. for 2014. They are stored in a table with a separate row for each model, so the make of the car is repeated in each row as well.

	A	B
1	Make	Model
2	Acura	ILX
3	Acura	MDX
4	Acura	RDX
5	Acura	RLX
6	Acura	TL
7	Acura	TSX
8	Acura	TSX WAGON
9	Aston Martin	DB9
10	Aston Martin	Rapide S
11	Aston Martin	V8 Vantage
12	Aston Martin	V8 Vantage S
13	Aston Martin	Vanquish
14	Audi	A4
15	Audi	A5 Cabriolet
16	Audi	A5

What we want is a single row for each make of vehicle with a list of models after it, separated by commas. It should look like this:

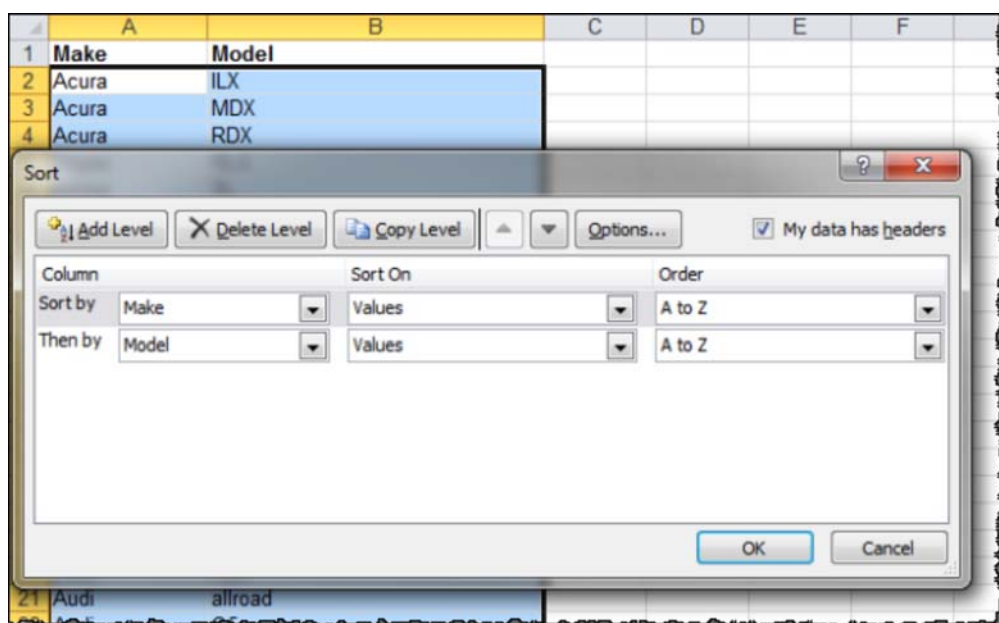
	A	B	C	D	E	F	G
1	Make	Models					
2	Acura	ILX, MDX, RDX, RLX, TL, TSX, TSX WAGON					
3	Aston Martin	DB9, Rapide S, V8 Vantage, V8 Vantage S, Vanquish					
4	Audi	A4, A5 Cabriolet, A5, A6, A7, A8, A8L, allroad, Q5, Q5 Hybrid, Q					
5	Bentley	Continental GT, Continental GT Speed CONVERTIBLE, Continent					
6	BMW	320i, 328d, 328d Sports Wagon, 328i, 328i Gran Turismo, 328i S					
7	Bugatti	Veyron					
8	Buick	ENCLAVE, ENCORE, LACROSSE, REGAL, VERANO					
9	Cadillac	ATS, CTS, CTS SEDAN, CTS V, CTS WAGON, ESCALADE, ES					
10	Chevrolet	C10 SUBURBAN, C10 TAHOE, C15 SILVERADO, CAMARO, CA					
11	Chrysler	200, 300, 200 CONVERTIBLE, 300 SRT8, Town & Country					
12	Dodge	Avenger, Challenger, Challenger SRT8, Charger, Charger SRT8, D					
13	Ferrari	458 Italia, 458 Spider, F12, Ferrari California, FF					
14	FIAT	500, 500 Abarth, 500L					
15	Ford	F150 VAN, F150 WAGON, F250 VAN, F350 VAN, F350 WAGO					

The steps that follow will show you how to get to this result.

Building the Concatenation Helper Column

To combine the rows for each make of vehicle, we are going to build a few columns that help us stitch together the multiple rows, but first we need to make sure the list is sorted. All the vehicles of the same make need to be next to each other for this technique to work.

First, we select all the cells, and choose **Sort** from the **Data** menu tab.



We want to sort first by Make and then by Model as the screen shot above shows.

Now that we are sure that the list is in the proper order, we can build our helper columns.

In the next available column (column **C** in our example), title the first helper column **Models**. This is where our combined list of vehicle models will end up.

In the first row of data (**C2** in this example), write the following formula:

```
=IF (A2=A1, C1 & ", " & B2, B2)
```

	A	B	C	D	E
1	Make	Model	Models		
2	Acura	ILX	=IF(A2=A1,C1&","&B2,B2)		
3	Acura	MDX			

This **IF** function compares the value in the **Make** column of the current row to the **Make** cell in the previous row. If they are the same, it stitches together the contents of the previous **Models** cell with the new content from the current **Model** cell. If they are different, it starts a new list by adding the current row's **Model** to the **Models** cell.

In other words, If the **Make** is the same, add this **Model** to the other **Models** in the list. If the **Make** is different, start a new list of **Models**.

Once the first formula is entered, select its cell and drag from the lower right corner down to the end of the worksheet. This will copy the formula down the sheet, changing the cell references inside the formula along the way.

	A	B	C
1	Make	Model	Models
2	Acura	ILX	ILX
3	Acura	MDX	
4	Acura	RDX	
5	Acura	RLX	
6	Acura	TL	
7	Acura	TSX	
8	Acura	TSX WAGON	
9	Aston Martin	DB9	
10	Aston Martin	Rapide S	

The end result will be a series of lists of vehicle **Models** that grow with each row, until the **Make** changes, and a new list is started.

	A	B	C	D	E	F	G
1	Make	Model	Models				
2	Acura	ILX	ILX				
3	Acura	MDX	ILX, MDX				
4	Acura	RDX	ILX, MDX, RDX				
5	Acura	RLX	ILX, MDX, RDX, RLX				
6	Acura	TL	ILX, MDX, RDX, RLX, TL				
7	Acura	TSX	ILX, MDX, RDX, RLX, TL, TSX				
8	Acura	TSX WAGON	ILX, MDX, RDX, RLX, TL, TSX, TSX WAGON				
9	Aston Martin	DB9	DB9				
10	Aston Martin	Rapide S	DB9, Rapide S				
11	Aston Martin	V8 Vantage	DB9, Rapide S, V8 Vantage				
12	Aston Martin	V8 Vantage S	DB9, Rapide S, V8 Vantage, V8 Vantage S				
13	Aston Martin	Vanquish	DB9, Rapide S, V8 Vantage, V8 Vantage S, Vanquish				
14	Audi	A4	A4				
15	Audi	A5	A4, A5				

Building the List Check Helper Column

Now we have a set of lists for each **Make**, but we need to know which one has all the **Model** items inside. It will always be the one in the last row of each **Make**, but how do we look for this? Using another helper column, of course!

In the next available column (column **D** in our example), title the second helper column **Check**. This is where we will find out which lists are complete.

In the first row of data (**D2** in this example), write the following formula:

```
=IF(A2<>A3, "Last", "")
```

	A	B	C	D	E
1	Make	Model	Models	Check	
2	Acura	ILX	ILX	=IF(A2<>A3,"Last","")	
3	Acura	MDX	ILX, MDX		

This **IF** function compares the value in the **Make** column of the current row to the **Make** cell in the next row. If they are the different, it marks the cell as "**Last**" to indicate that it is the complete list for that **Make**. If they are the same, it leaves the cell blank.

Once the formula is entered, select its cell and drag from the lower right corner down to the end of the worksheet. This will again copy the formula down the sheet, changing the cell references inside the formula along the way.

The end result will be a column of blank cells with the last (complete) row of each **Make** marked "**Last**".

	A	B	C	D
1	Make	Model	Models	Check
2	Acura	ILX	ILX	
3	Acura	MDX	ILX, MDX	
4	Acura	RDX	ILX, MDX,	
5	Acura	RLX	ILX, MDX,	
6	Acura	TL	ILX, MDX,	
7	Acura	TSX	ILX, MDX,	
8	Acura	TSX WAGON	ILX, MDX,	Last
9	Aston Martin	DB9	DB9	
10	Aston Martin	Rapide S	DB9, Rapi	
11	Aston Martin	V8 Vantage	DB9, Rapi	
12	Aston Martin	V8 Vantage S	DB9, Rapi	
13	Aston Martin	Vanquish	DB9, Rapi	Last
14	Audi	A4	A4	

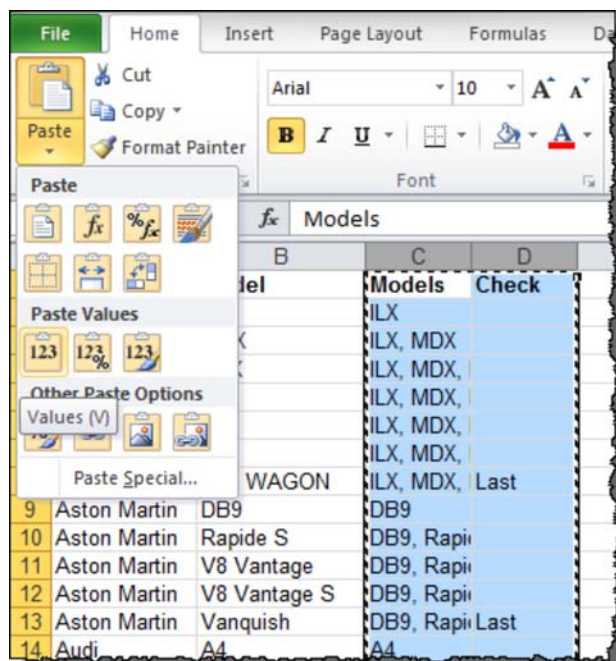
Cleaning Up the Helper Columns and Finalizing the List

Now we have everything we need to make our final comma-separated list, but first we need to clean up our helper columns.

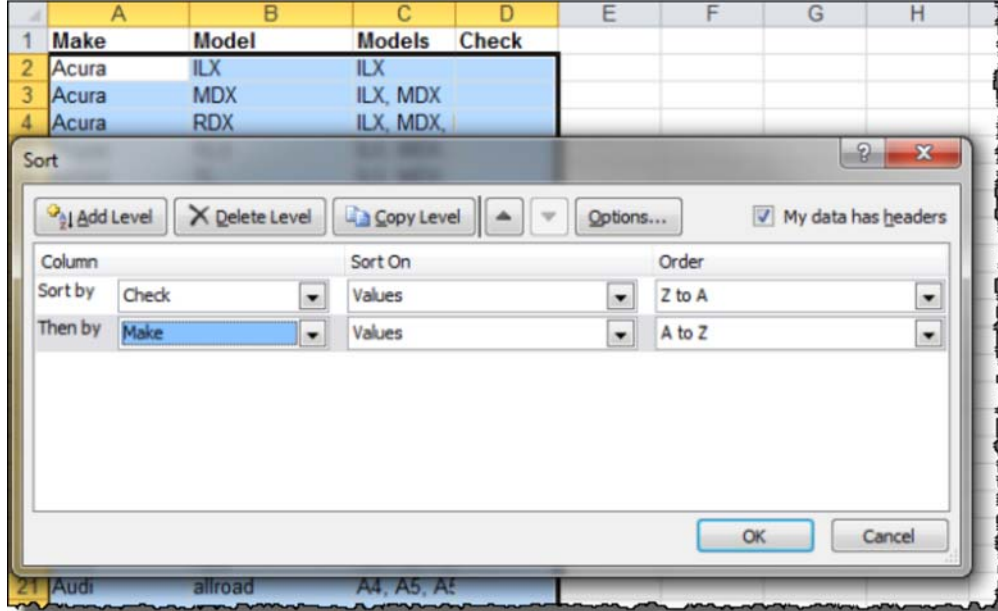
The **Models** and **Check** columns are currently dependent upon the order of the rows, so we need to lock the formula output with a **Paste Values** command. **Paste Values** replaces the formulas in each cell with the current output of the formulas.

To do so, select columns **C** and **D** and press **CTRL+C** to copy the cell contents.

Then click the **Paste** button from the **Home** menu tab and choose **Paste Values** as shown below:

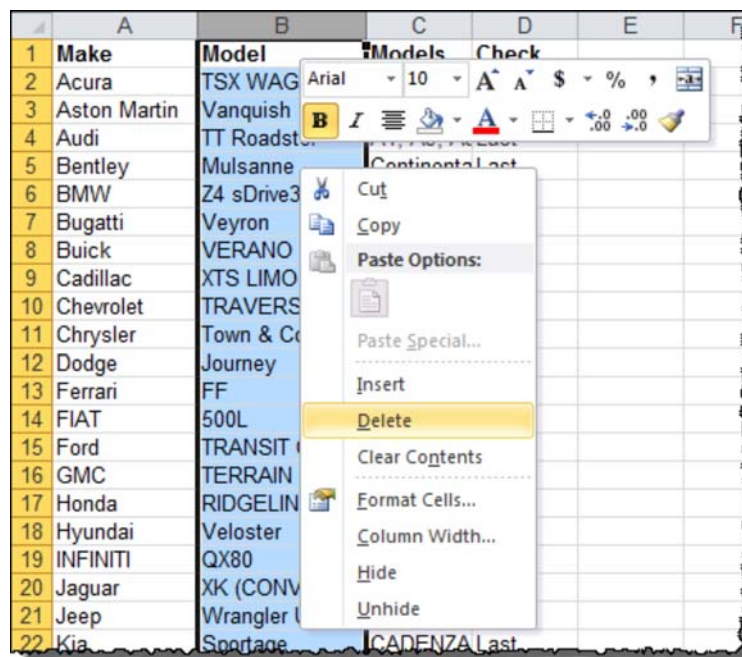


Now we can safely re-sort our data to identify the complete lists. Select all of the columns from **A** to **D** and choose **Sort** from the **Data** menu tab.



Choose to sort first by the **Check** column (sorting in **Z to A** order to bring the **Last** values to the top), and then by **Make** using the normal sort direction. When we click **OK**, the rows marked “**Last**” will rise to the top.

Now, we can safely delete the **Model** column, leaving only the **Models**. Select column **B**, right-click the selection, and click **Delete** from the menu.








We can also eliminate all the partial lists that aren’t marked as “Last”. Select rows **44** (in our example data set) to the end of the worksheet, right click the selection and click **Delete** from the menu.


What we are left with is a single row of comma-separated **Models** for each **Make** of vehicle!

Download the Combine Multiple Rows Example File

If you want to follow along with the steps in this tutorial, the example data set and the final comma-separated list are available below. You can download the file by clicking the green Excel icon in the bottom right.

	A	B	C	D	E	F
1	Make	Model				
2	Acura	ILX				
3	Acura	MDX				
4	Acura	RDX				
5	Acura	RLX				
6	Acura	TL				
7	Acura	TSX				
8	Acura	TSX WAGON				
9	Aston Martin	DB9				
10	Aston Martin	Rapide S				
11	Aston Martin	V8 Vantage				
12	Aston Martin	V8 Vantage S				
13	Aston Martin	Vanquish				
14	Audi	A4				
15	Audi	A5				



Andrew Roberts has been solving business problems with Microsoft Excel for over a decade. Excel Tactics is dedicated to helping you master it.

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Vishnu Yadav says:
April 7, 2014 at 3:30 am



Bang on !!! Super trick..Thanks...

Reply


Janine Comes says:
April 11, 2014 at 1:46 pm



This helped article me so much! Thank-you for creating this site. Now that I've found it I know that I will be visiting quite often. — Janine

Reply

madhavan says:
May 16, 2014 at 12:21 am



Thanks and it helped.

Reply

Michele Frania says:

May 22, 2014 at 8:49 am



You have no idea how much time this just saved me. Hours upon hours as we calculate the duplicate registration for our client's conference attendees.

Tricks like these help us clean up our data and provide the clearest picture for our clients. A HUGE thank you!

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