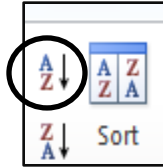# Excel Intermediate

Custom Sorting and Subtotaling

Excel allows us to sort data whether it is alphabetic or numeric. Simply clicking within a column or row of data will begin the process.

- Click in the name column of our Range of Data. (Do not highlight the column)
- Click on the Data Tab in the Ribbon

- Click on A – Z in the sort and filter group to see the donor names alphabetically sorted A - Z
- Click on Z – A in the sort and filter group to see the donor names alphabetically sorted Z - A.

A column containing numbers will be sorted smallest to largest and largest to smallest when choosing A – Z and Z – A, respectively.
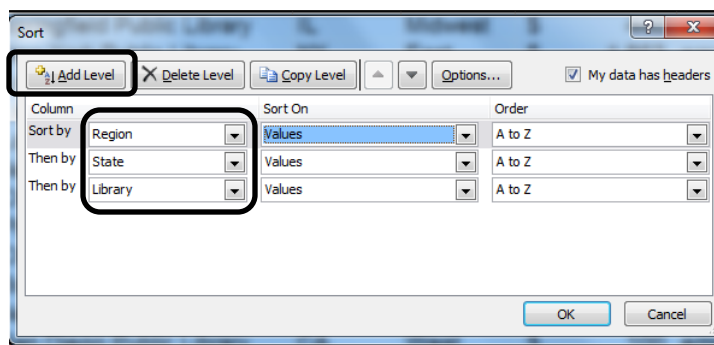
Custom Sorting by Level

Custom Sorting allows you to select multiple criteria to sort your data.

- Click anywhere inside your range of data
- Click on the Data Tab
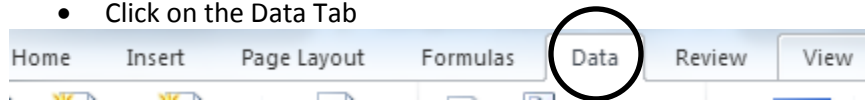
Click on the Sort Box. This brings up the Sort dialog box allowing you to sort your data by level. Clicking on the downward arrow in the "Sort by" field will bring up the criteria to choose from.

- Choose **Region** as your first sort level.
- Click on Add Level at the top left of the dialog box and select **State.**
- Click on Add Level again and select **Library.**
- Click on add Level once more and select **Giving Total.**
- Click on ok.
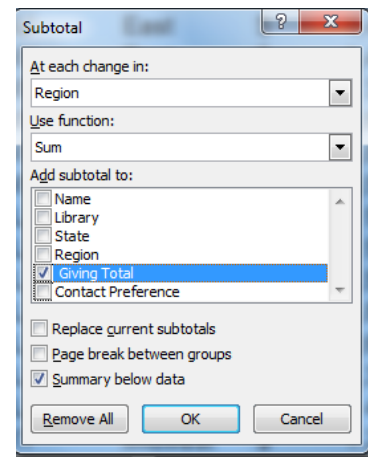
Your resulting spreadsheet should look like this:

	Name	Library	State	Region	Giving Total	Contact Preference
3	Name	Library	State	Region	Giving Total	Contact Preference
4	Streep, Meryl	Boston Public Library	MA	East	$ 1,119	email
5	Trump, Donald	New Jersey Public Library	NJ	East	$ 1,444	email
6	Fallon, Jimmy	Brooklyn Public Library	NY	East	$ 1,456	email
7	Clinton, Hillary	New York Public Library	NY	East	$ 351	email
8	Pitt, Brad	New York Public Library	NY	East	$ 1,614	phone
9	Patterson, James	New York Public Library	NY	East	$ 1,863	email
10	Williams, Brian	New York Public Library	NY	East	$ 3,536	email
11	Jordan, Michael	Chicago Public Library	IL	Midwest	$ 517	phone
12	Winfrey, Oprah	Chicago Public Library	IL	Midwest	$ 556	phone
13	Obama, Barack	Chicago Public Library	IL	Midwest	$ 1,504	phone

The data should be sorted first alphabetically by Region. Within each region it should be sorted alphabetically by State. Within each state it should be sorted alphabetically by Library and within each Library, The Giving Totals should be listed smallest to largest.

Subtotaling
After sorting your data you may want to add subtotals. This option is available within the Data Tab as well.

- Select any cell inside your range of data
- Click on subtotal in the Outline Group (way over to the right), to bring up the Subtotal dialog box. Clicking on the downward arrows next to each field, select:
- At each change in: **Region**
- Use the function: **Sum**
- Add subtotal to: **Giving Total**
- Check the box that says Summary below data
- Click on ok
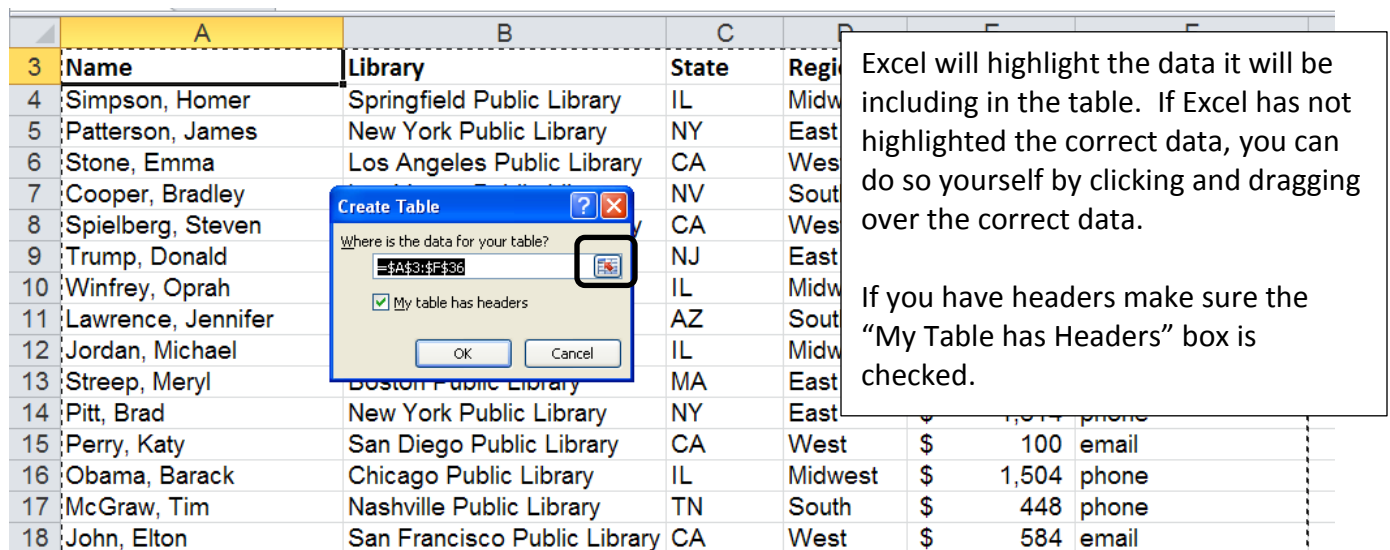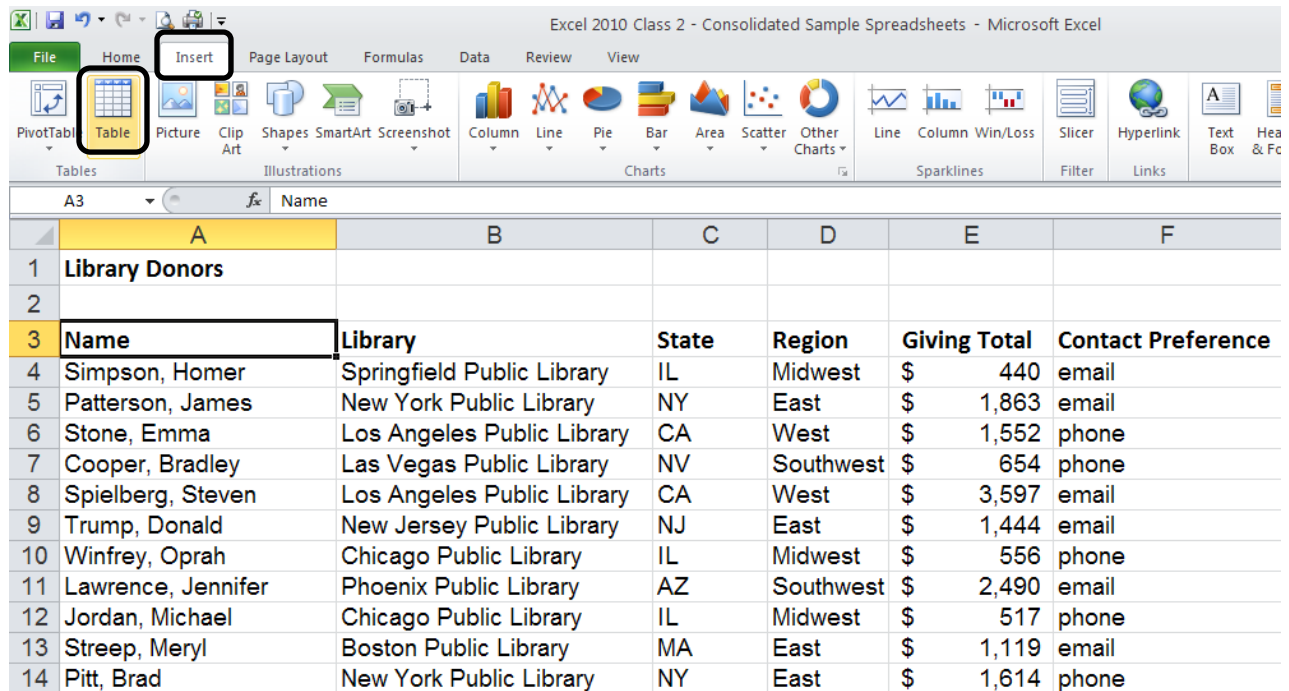
The resulting spreadsheet should look like this:

A	B	C	D	E	F
Streep, Meryl	Boston Public Library	MA	East	$ 1,119	email
Trump, Donald	New Jersey Public Library	NJ	East	$ 1,444	email
Fallon, Jimmy	Brooklyn Public Library	NY	East	$ 1,456	email
Clinton, Hillary	New York Public Library	NY	East	$ 351	email
Pitt, Brad	New York Public Library	NY	East	$ 1,614	phone
Patterson, James	New York Public Library	NY	East	$ 1,863	email
Williams, Brian	New York Public Library	NY	East	$ 3,536	email
			East Total	$ 11,383	
Jordan, Michael	Chicago Public Library	IL	Midwest	$ 517	phone
Winfrey, Oprah	Chicago Public Library	IL	Midwest	$ 556	phone
Obama, Barack	Chicago Public Library	IL	Midwest	$ 1,504	phone
Ditka, Mike	Chicago Public Library	IL	Midwest	$ 1,873	email
Murray, Bill	Chicago Public Library	IL	Midwest	$ 2,640	email
Potter, Harry	Palatine Public Library	IL	Midwest	$ 1,376	owl
Simpson, Homer	Springfield Public Library	IL	Midwest	$ 440	email
Clooney, George	Lexington Public Library	KY	Midwest	$ 1,200	phone

Subtotal dialog box:
At each change in: Region
Use function: Sum
Add subtotal to:
☐ Name
☐ Library
☐ State
☐ Region
☑ Giving Total
☐ Contact Preference

☐ Replace current subtotals
☐ Page break between groups
☑ Summary below data

[Remove All] [OK] [Cancel]

We can add more subtotals by simply clicking on the Subtotal icon again, and changing region to state for instance. Just make sure the box next to: "Replace current subtotals" is not checked.

Creating a Table

Tables are a great way to organize your data and make it easier to sort and filter information.

Select any cell within your data set, select the Insert Ribbon, then click on" Table."

Excel will highlight the data it will be including in the table. If Excel has not highlighted the correct data, you can do so yourself by clicking and dragging over the correct data.

If you have headers make sure the "My Table has Headers" box is checked.

You now have a new Ribbon titled "Table Tools - Design." This Ribbon allows you to change the color coding of your table. By selecting "Banded Rows" the table will color every other row a

different color for easier viewing. You can also select "Banded Columns" to do the same to your columns.

You will now see some drop-down arrows at the end of each of your column headings. Select the drop down arrow next to the "Name" Heading. You will see the options for sorting the column. You can choose to sort from A-Z or from Z-A.

Library Donors

Name	Library	State	Region	Giving Total	Contact
Carell, Steve	San Francisco Public Library	CA	West	$ 538	phone
Clinton, Hillary	New York Public Library	NY	East	$ 351	email
Clooney, George	Lexington Public Libr...		dwest	$ 1,200	phone
Cooper, Bradley	Las Vegas Public Lib...		outhwest	$ 654	phone
Degeneres, Ellen	Los Angeles Public L...		est	$ 2,037	phone
Ditka, Mike	Chicago Public Librar...		dwest	$ 1,873	email
Fallon, Jimmy	Brooklyn Public Libra...		st	$ 1,456	email
Gaga, Lady	Los Angeles Public L...		est	$ 1,101	phone
Gates, Bill	Seattle Public Library		rthwest	$ 1,488	email
Gosling, Ryan	Los Angeles Public Library	CA	West	$ 1,176	email
John, Elton	San Francisco Public Library	CA	West	$ 584	email
Jordan, Michael	Chicago Public Library	IL	Midwest	$ 517	phone
Keith, Toby	Houston Public Library	TX	Southwest	$ 346	email
King, Stephen	Augusta Public Library	ME	Northeast	$ 291	email

You will notice a little arrow indicating that this column has been sorted.

In addition to sorting, you can use Excel 2010 to filter out data from your table in order to leave just the data you need. For instance, in this example, you can filter out all library donors except those who donated to the Chicago Public Library:

Library Donors

Name	Library	State	Region	Giving Total	Contact
Simpson, Homer		IL	Midwest	$ 440	email
Patterson, James		NY	East	$ 1,863	email
Stone, Emma		CA	West	$ 1,552	phone
Cooper, Bradley		NV	Southwest	$ 654	phone
Spielberg, Steven					email
Trump, Donald					email
Winfrey, Oprah					phone
Lawrence, Jennifer					email
Jordan, Michael					phone
Streep, Meryl					email
Pitt, Brad					phone
Perry, Katy					email
Obama, Barack					phone
McGraw, Tim					phone
John, Elton		CA	West	584	email
Spielberg, Steven		CA	West	$ 3,597	email
Ditka, Mike	Chicago Public Library	IL	Midwest	$ 1,873	email

Filter drop-down menu:
- Sort A to Z
- Sort Z to A
- Sort by Color
- Clear Filter From "Library"
- Filter by Color
- Text Filters
- Search
  - ☐ (Select All)
  - ☐ Atlanta Public Library
  - ☐ Augusta Public Library
  - ☐ Boston Public Library
  - ☐ Brooklyn Public Library
  - ☑ Chicago Public Library
  - ☐ Houston Public Library
  - ☐ Las Vegas Public Library
  - ☐ Lexington Public Library
  - ☐ Los Angeles Public Library
- OK   Cancel

Start by clicking the drop-down arrow in the "Library" column.

Uncheck "(Select All)" to clear out all checkmarks.

Check "Chicago Public Library" and click OK.

Only the donors for the Chicago Public Library remain – the others have been filtered out. You will notice a filter icon now appears next to the drop-down arrow by the column heading.

	A	B	C	D	E	F
1	**Library Donors**					
2						
3	**Name** ▾	**Library** ▾	**State** ▾	**Region** ▾	**Giving Total** ▾	**Contact Preference** ▾
10	Winfrey, Oprah	Chicago Public Library	IL	Midwest	$ 556	phone
12	Jordan, Michael	Chicago Public Library	IL	Midwest	$ 517	phone
16	Obama, Barack	Chicago Public Library	IL	Midwest	$ 1,504	phone
20	Ditka, Mike	Chicago Public Library	IL	Midwest	$ 1,873	email
27	Murray, Bill	Chicago Public Library	IL	Midwest	$ 2,640	email
37						
38						
39						

You can clear a filter by selecting the column heading, then "Clear" from the Sort & Filter section of the Data ribbon; or, you can click the column heading drop-down arrow and select the option to clear the filter.

	A	B	C	D	E	
1	**Library Donors**					
2						
3	**Name** ▾	**Library** ▾	**State** ▾	**Region** ▾	**Giving Total** ▾	**Contact**
10	Winfrey, Oprah	Sort A to Z	IL	Midwest	$ 556	phone
12	Jordan, Michael	Sort Z to A	IL	Midwest	$ 517	phone
16	Obama, Barack	Sort by Color	IL	Midwest	$ 1,504	phone
20	Ditka, Mike	Clear Filter From "Library"	IL	Midwest	$ 1,873	email
27	Murray, Bill	Filter by Color	IL	Midwest	$ 2,640	email
37		Text Filters				
38		Search				
39		(Select All)				
40		Atlanta Public Library				
41		Augusta Public Library				
42		Boston Public Library				
43		Brooklyn Public Library				
44		✓ Chicago Public Library				
45		Houston Public Library				
46		Las Vegas Public Library				
47		Lexington Public Library				
48		Los Angeles Public Library				

Conditional Formatting – Top/Bottom Rules

Excel 2010 offers conditional formatting options that highlight data that meet criteria that you have set. For example, it might be helpful to have Excel highlight library donors that give more than average.
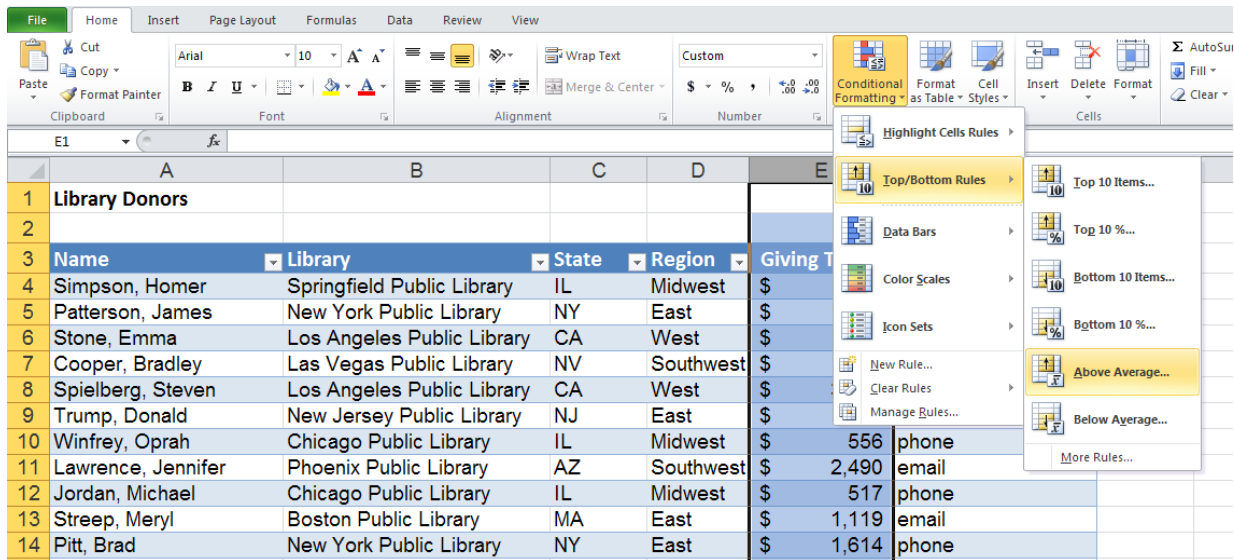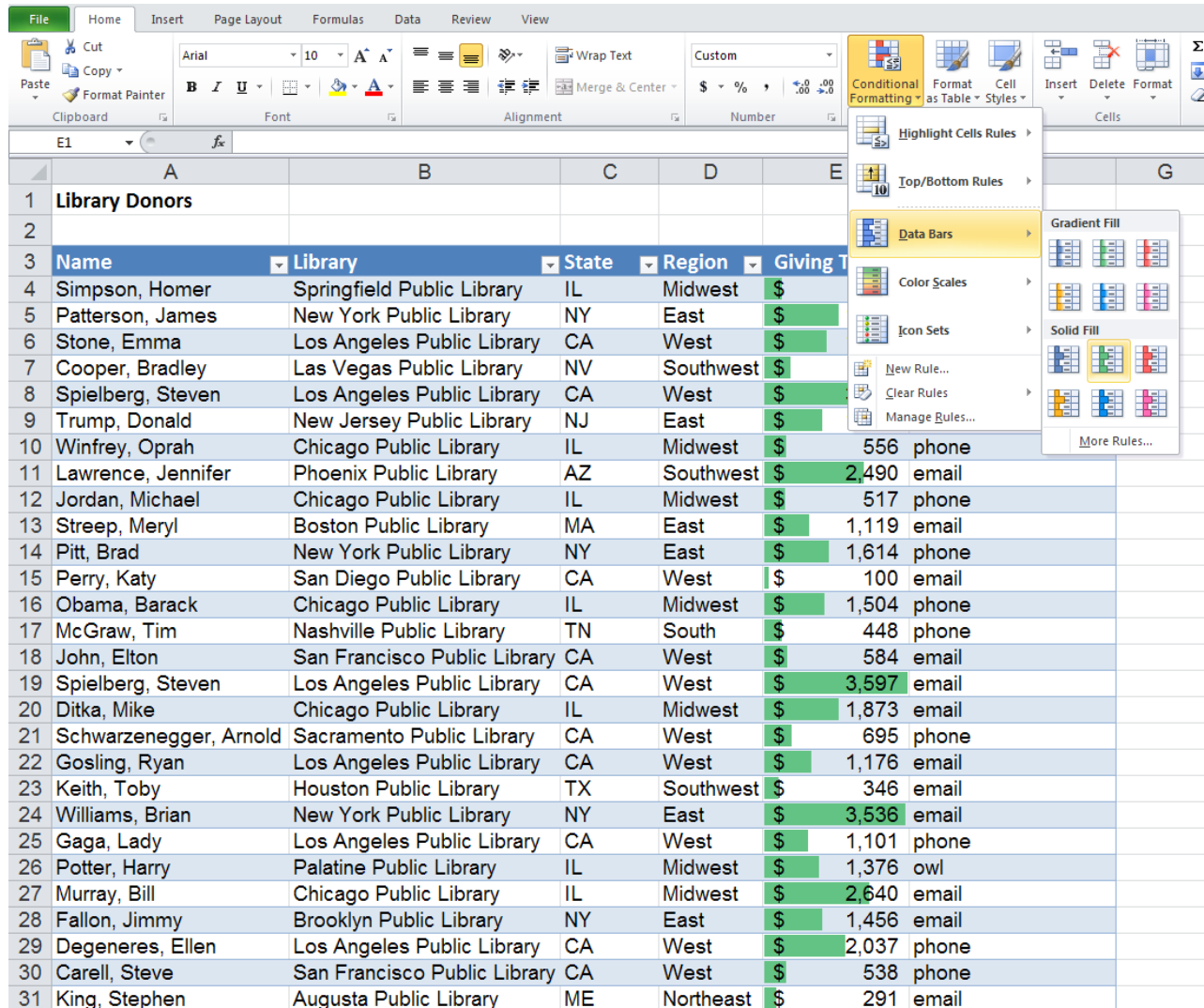
Start by highlighting the column to which you wish to apply conditional formatting. Then, on the Home ribbon, select "Conditional Formatting," "Top/Bottom Rules," and finally, "Above Average."
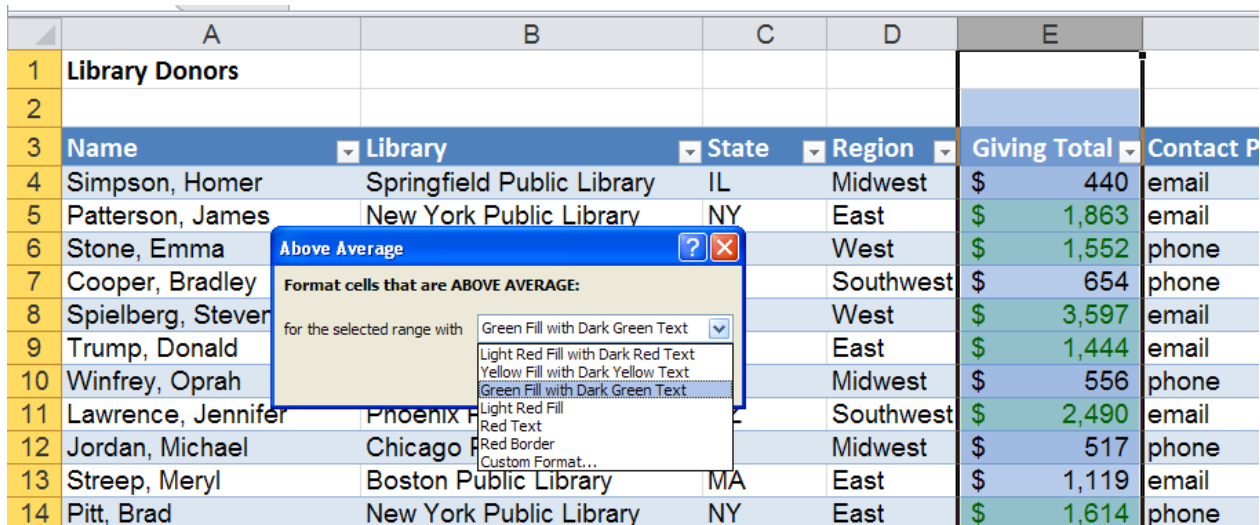
You will then be prompted choose how Excel will highlight the cells that meet the "above average" criterion. In this case, a green fill with dark green text marks the big library donors. Note that that these changes can be easily undone using the "Clear Rules" option on the "Conditional Formatting" menu.

Conditional Formatting – Data Bars

Excel 2010 allows you to display graphical representations of numerical data. Adding colored data bars in this example makes it easy to see who is donating the most and least. Select the column you wish to format, select "Conditional Formatting," then "Data Bars," and finally the style and color of fill you want to use on your data bars.

Conditional Formatting - Highlight Cells Rules

Another helpful feature of Conditional Formatting is the option to search for duplicate values. If you wanted to search through the list of donors to make sure you haven't accidentally listed somebody twice, you can select the "Name" column, then "Conditional Formatting," "Highlight Cell Rules," and finally "Duplicate Values."
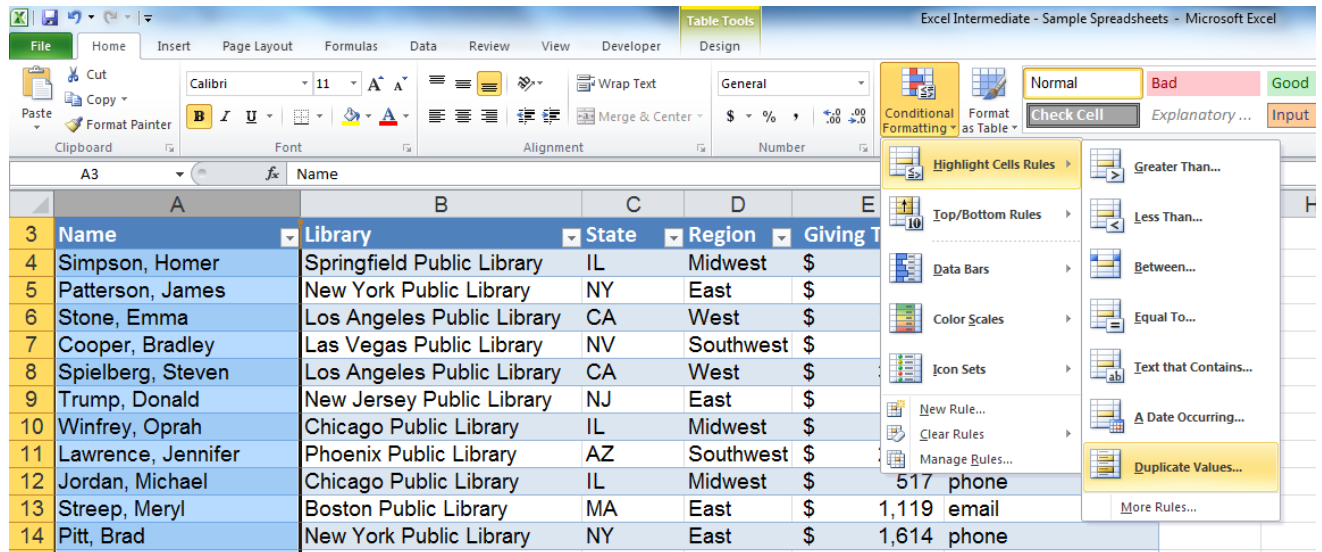
You can then select how you want Excel to mark the duplicates.

You can manually remove duplicates or use Excel's automated feature for removing duplicates. To use Excel's automated Remove Duplicates feature, make sure your table is selected, then click the "Design" contextual ribbon, "Remove Duplicates," and "Unselect All." **Selecting "Unselect All" is important so that Excel does not remove duplicates from any column other than the one you select** – in this case, the "Name" column. Click OK.

The duplicate donor has been removed.

Adding a Total Row

You can easily add a Total row to your table by checking the "Total Row" option on the Table Tools-Design contextual ribbon.

Once the Total row is in place, click in the cell where you want a total to appear and a drop-down arrow will appear. Select whether you want Excel to calculate a sum, an average, minimum, maximum, etc.

If Excel assigns a total to a column that doesn't require a total, click the cell with the total and select "None" from the drop-down menu. This will delete the unnecessary total.

Pivot Tables

Once you have created a table in Excel 2010, it is easy to convert your table to a Pivot Table. The "Pivot Tables" feature is a flexible tool that allows you to easily analyze your data in different ways.

To convert your table to a Pivot Table, select the Insert ribbon, then click the "Pivot Table" button.

Make sure Excel has selected the correct data, choose "New Worksheet" or "Existing Worksheet," depending on where you want the new pivot table to go, then select OK.

You're newly created Pivot Table should look something like this, with a list of fields taken from the original table.
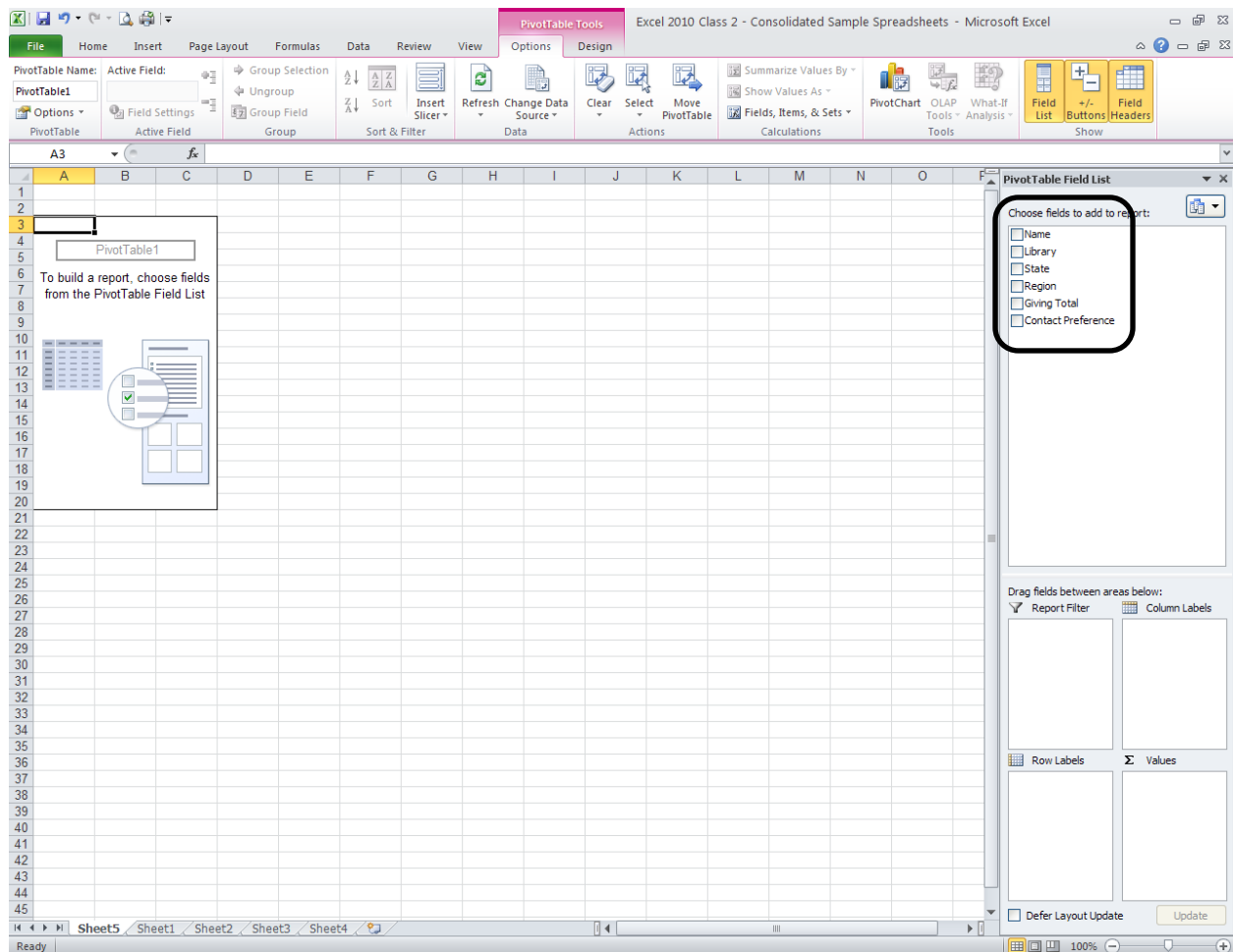
You can choose which data you would like your Pivot Table to focus on by checking the data fields from the list. Excel will then try to guess if the field belongs as a filter, column label, row label, or value. Or, if you prefer, you can drag the field name to the area of your choice.

In this example, "Region" and "Giving Total" have been selected so that Excel will create a Pivot Table showing how donations in the different regions compare.

Row Labels	Sum of Giving Total
East	11383
Midwest	10106
Northeast	291
Northwest	1488
South	954
Southwest	3490
West	14977
Grand Total	**42689**

PivotTable Field List

Choose fields to add to report:
☐ Name
☐ Library
☐ State
☑ Region
☑ Giving Total
☐ Contact Preference

Drag fields between areas below:
▽ Report Filter   ▦ Column Labels

▦ Row Labels   Σ Values
Region ▼   Sum of Giving... ▼

☐ Defer Layout Update   Update

Sheet5 Sheet1 Sheet2 Sheet3 Sheet4

You can easily add fields to your Pivot Table by checking another field from the list. In this example, the "State" field has been added by checking it in the list.

Row Labels	Sum of Giving Total
⊟ East	11383
MA	1119
NJ	1444
NY	8820
⊟ Midwest	10106
IL	8906
KY	1200
⊟ Northeast	291
ME	291
⊟ Northwest	1488

PivotTable Field List

Choose fields to add to report:
☐ Name
☐ Library
☑ State
☑ Region
☑ Giving Total
☐ Contact Preference

Changing Value Field Settings

If you would like the Pivot Table to show average donations instead of summing the donations, you can click on "Sum of Giving Totals" under the "Value" area, then select" Value Field Settings."
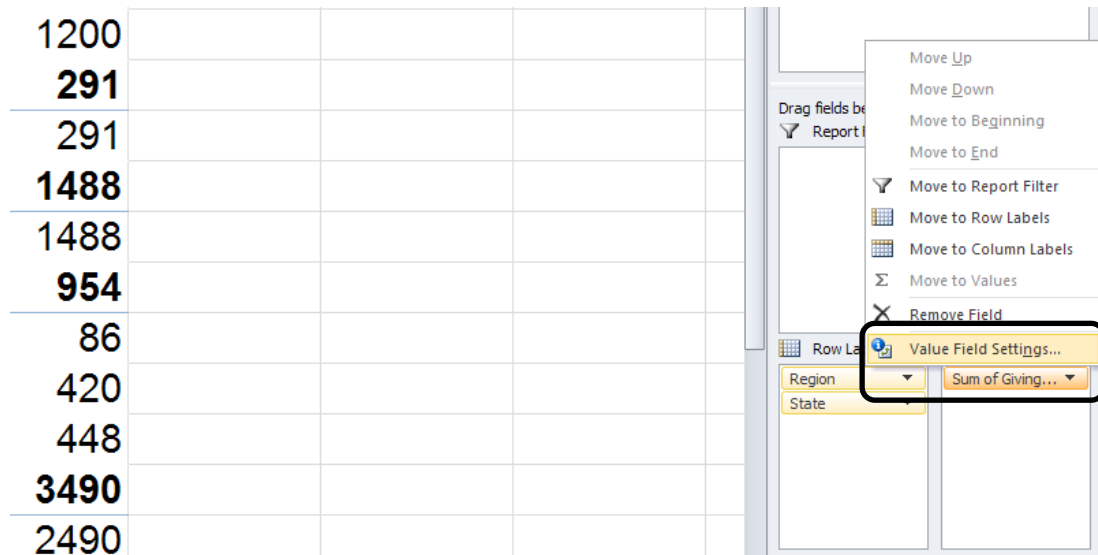
You can then change the" Value" setting to "Average."
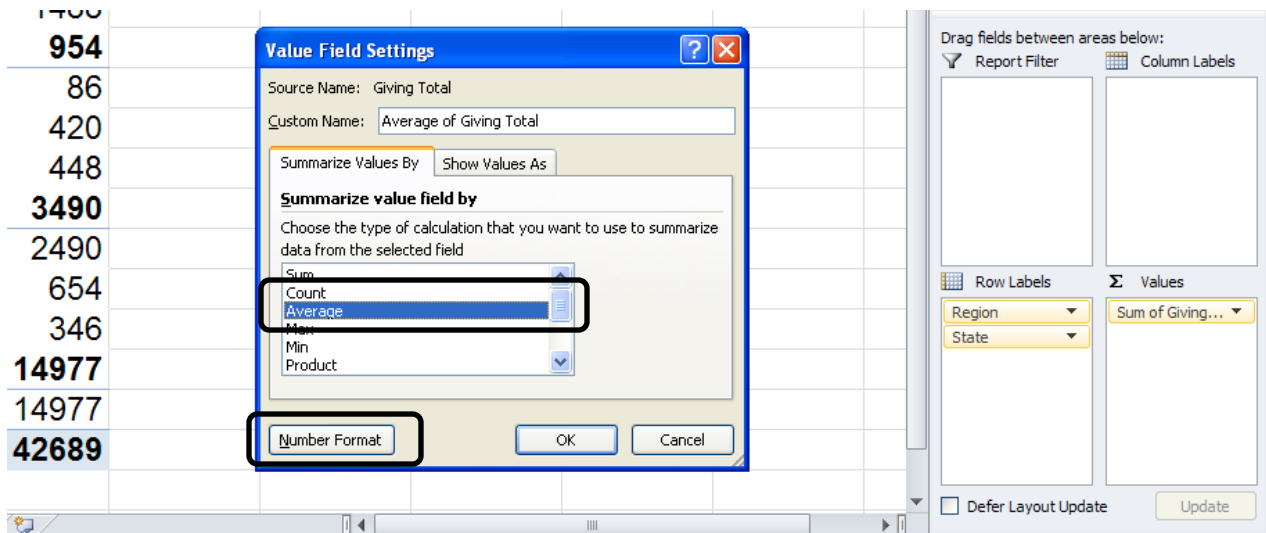
Before clicking OK, you may wish to change the "Number Format" to "Currency" so that numeric values will appear as dollar amounts.

After selecting "Number Format", select "Currency" and make sure the "Decimal Places" are set to 2. Click OK on both menus.

You will notice that donations are now displayed as averages and in currency format.

Row Labels	Average of Giving Total
Southwest	$1,163.33
AZ	$2,490.00
NV	$654.00
TX	$346.00
West	$1,497.70
CA	$1,497.70
Grand Total	$1,293.61

Pivot Tables - Slicers

Excel 2010 allows you to use the Slicer tool to filter your data. On the Pivot Table Tools contextual ribbon, select "Insert Slicer." In this example, we will check "Library" and click OK.

Holding the Ctrl button allows you to make multiple selections. In this case, the California libraries have been selected in the Slicer tool. Notice that the Pivot Table now only shows average donations to libraries in the Western region that are located in the state of California.

You can easily clear the filter by selecting the button in the upper right of the Slicer box.

Pivot Tables – Charts

Like other tables, Excel 2010 can easily convert a Pivot Table to a chart to display information in a more visually interesting way. Simply click on the Insert ribbon, then select the kind of chart you want.

Sparklines

Sparklines are a new feature in Excel 2010 that allow you to create a mini chart within a single cell in order to show a visual representation of data trends.

Select the cell where you want your first Sparkline to appear, then select the Insert ribbon, then "Line" under the "Sparklines" menu.

Then, highlight the data range, make sure the Sparkline location range is correct, then click OK.

	A	B	C	D	E	F
1	**Library Donors**					
2						
3	**Name**	**2012**	**2013**	**2014**	**2015**	**Sparklines**
4	Homer Simpson	$223.00	$378.00	$440.00	$631.00	
5	James Patterson	$1,863.00	$1,204.00	$998.00	$740.00	
6	Emma Stone	$1,552.00	$1,894.00	$2,132.00	$1,012.00	
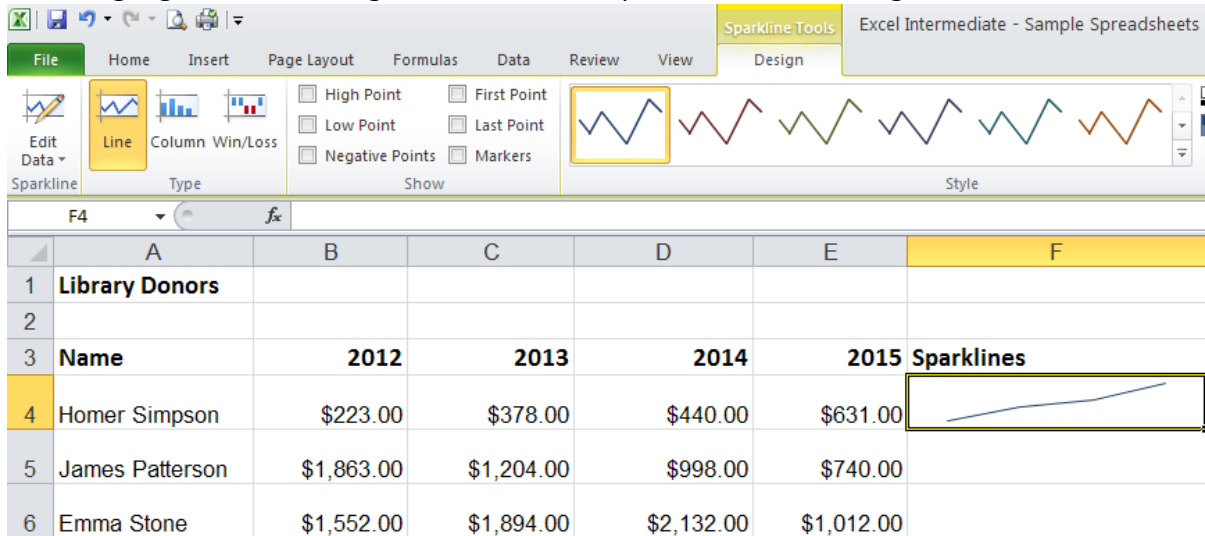
A Sparkline chart appears showing a visual representation of that row's data. You can then AutoFill the rest of the rows.

	A	B	C	D	E	F
1	**Library Donors**					
2						
3	**Name**	**2012**	**2013**	**2014**	**2015**	**Sparklines**
4	Homer Simpson	$223.00	$378.00	$440.00	$631.00	
5	James Patterson	$1,863.00	$1,204.00	$998.00	$740.00	
6	Emma Stone	$1,552.00	$1,894.00	$2,132.00	$1,012.00	
7	Bradley Cooper	$654.00	$865.00	$986.00	$1,014.00	
8	Steven Spielberg	$3,597.00	$3,174.00	$2,875.00	$2,456.00	
9	Donald Trump	$956.00	$714.00	$678.00	$515.00	
10	Oprah Winfrey	$1,444.00	$1,749.00	$2,240.00	$2,998.00	
11	Jennifer Lawrence	$2,490.00	$1,978.00	$1,621.00	$1,345.00	
12	Michael Jordan	$517.00	$994.00	$1,023.00	$1,256.00	
13	Brad Pitt	$1,119.00	$3,583.00	$2,997.00	$989.00	
14	Meryl Streep	$1,614.00	$1,087.00	$1,879.00	$2,042.00	
15	Katy Perry	$100.00	$207.00	$368.00	$401.00	
16	Barack Obama	$1,504.00	$1,718.00	$1,865.00	$1,987.00	
17						

You can easily change the look of your Sparklines or convert your line graphs to bar graphs using the menu options on the Sparkline Tools Design contextual ribbon.

	A	B	C	D	E	F
1	**Library Donors**					
2						
3	**Name**	**2012**	**2013**	**2014**	**2015**	**Sparklines**
4	Homer Simpson	$223.00	$378.00	$440.00	$631.00	
5	James Patterson	$1,863.00	$1,204.00	$998.00	$740.00	
6	Emma Stone	$1,552.00	$1,894.00	$2,132.00	$1,012.00	
7	Bradley Cooper	$654.00	$865.00	$986.00	$1,014.00	
8	Steven Spielberg	$3,597.00	$3,174.00	$2,875.00	$2,456.00	
9	Donald Trump	$956.00	$714.00	$678.00	$515.00	
10	Oprah Winfrey	$1,444.00	$1,749.00	$2,240.00	$2,998.00	
11	Jennifer Lawrence	$2,490.00	$1,978.00	$1,621.00	$1,345.00	
12	Michael Jordan	$517.00	$994.00	$1,023.00	$1,256.00	
13	Brad Pitt	$1,119.00	$3,583.00	$2,997.00	$989.00	
14	Meryl Streep	$1,614.00	$1,087.00	$1,879.00	$2,042.00	
15	Katy Perry	$100.00	$207.00	$368.00	$401.00	
16	Barack Obama	$1,504.00	$1,718.00	$1,865.00	$1,987.00	

Logical Functions

Excel offers functions that compare data using logical operators such < (less than), > (greater than), = (equal to), etc. In the example below, the logical function "IF" allows Excel to compare donors' 2014 donations amounts to their 2012 amounts and then indicate if that donor should receive a thank you letter for increasing their donation or a phone call requesting additional funding.

Select the Formulas ribbon, then "Insert Function." Select the category "Logical" and then select the "IF" function. Click OK.

`fx` =IF(E4>B4,"Thank You Letter","Phone Call")

B	C	D	E	F	G
2012	**2013**	**2014**	**2015** Sparklines		**Thank You Letter or Phone Call?**
$223.00	$378.00	$440.00	$631.00		ik You Letter","Phone Call")
$1,863.00	$1,294.00	$908.00	$740.00		
$1,...					
$6...					
$3,...					
$9...					
$1,...					
$2,...					
$...					
$1,119.00	$3,583.00	$2,997.00	$989.00		

Function Arguments [?][X]

IF

Logical_test	E4>B4	=	TRUE
Value_if_true	"Thank You Letter"	=	"Thank You Letter"
Value_if_false	"Phone Call"	=	"Phone Call"

= "Thank You Letter"

Checks whether a condition is met, and returns one value if TRUE, and another value if FALSE.

Value_if_false is the value that is returned if Logical_test is FALSE. If omitted, FALSE is returned.

Formula result = Thank You Letter

Help on this function   [OK]   [Cancel]

In the "Logical_test" field, click on the cell with the 2014 donation amount, enter the > (greater than) operator, click on the cell with the 2012 donation amount.

In the "Value_if_true" field, enter in quotations "Thank You Letter".

In the "Value_if-false" field, enter in quotations "Phone Call"

Observe in the formula bar at the top how Excel constructs the function.

Click OK.

Excel then uses the logical function to determine that the first donor has given more in 2014 than in 2012 and indicates that this donor needs to receive a thank you letter.

	G4	fx	=IF(E4>B4,"Thank You Letter","Phone Call")			
	A	B	C	D	E	F	G
1	Library Donors						
2							
3	Name	2012	2013	2014	2015	Sparklines	Thank You Letter or Phone Call?
4	Homer Simpson	$223.00	$378.00	$440.00	$631.00		Thank You Letter
5	James Patterson	$1,863.00	$1,204.00	$998.00	$740.00		
6	Emma Stone	$1,552.00	$1,894.00	$2,132.00	$1,012.00		
7	Bradley Cooper	$654.00	$865.00	$986.00	$1,014.00		

Simply AutoFill the rest of the column and Excel applies the logical function to each donor.

	A	B	C	D	E	F	G
1	Library Donors						
2							
3	Name	2012	2013	2014	2015	Sparklines	Thank You Letter or Phone Call?
4	Homer Simpson	$223.00	$378.00	$440.00	$631.00		Thank You Letter
5	James Patterson	$1,863.00	$1,204.00	$998.00	$740.00		Phone Call
6	Emma Stone	$1,552.00	$1,894.00	$2,132.00	$1,012.00		Phone Call
7	Bradley Cooper	$654.00	$865.00	$986.00	$1,014.00		Thank You Letter
8	Steven Spielberg	$3,597.00	$3,174.00	$2,875.00	$2,456.00		Phone Call
9	Donald Trump	$956.00	$714.00	$678.00	$515.00		Phone Call
10	Oprah Winfrey	$1,444.00	$1,749.00	$2,240.00	$2,998.00		Thank You Letter
11	Jennifer Lawrence	$2,490.00	$1,978.00	$1,621.00	$1,345.00		Phone Call
12	Michael Jordan	$517.00	$994.00	$1,023.00	$1,256.00		Thank You Letter
13	Brad Pitt	$1,119.00	$3,583.00	$2,997.00	$989.00		Phone Call
14	Meryl Streep	$1,614.00	$1,087.00	$1,879.00	$2,042.00		Thank You Letter
15	Katy Perry	$100.00	$207.00	$368.00	$401.00		Thank You Letter
16	Barack Obama	$1,504.00	$1,718.00	$1,865.00	$1,987.00		Thank You Letter
17							

Payment Function

Excel provides a simple way to calculate monthly loan payments using the Payment Function. First, enter into a simple spreadsheet the price, interest rate, number of payments, and a blank monthly payment line, like the example below.

Select the cell where you want the monthly payment calculation to go, select the Formulas ribbon, and then the "Insert Function" option on the far left. An" Insert Function" dialog box will appear. Search for the "Payment" function (abbreviated PMT) and click OK.

The "Function Argument"s box will appear. Click on the "Rate" field, then select the cell with the interest rate amount.

In order to have Excel calculate the interest rate on a per-month basis, add a "/12" next to the cell address.

For the "Nper" (number of payments) field, select the cell with the number of payments and for the "Pv" (present value) field, select the cell with the item's price. Lastly, click OK.

Excel will then display the monthly payment amount.

	B7	▼	f_x	=PMT(B4/12,B5,B3)	

	A	B	
1	**Payment Function**		
2			
3	Car Price	$23,000	
4	Interest Rate	4.9%	
5	Number of Payments	60	
6			
7	Monthly Payment	($432.99)	
8			
9			

Once Excel completes the Payment Function, you can change the price, interest rate, and number of payment values to see how it impacts the monthly payment amount.

	B7	▼	f_x	=PMT(B4/12,B5,B3)	

	A	B	
1	**Payment Function**		
2			
3	Car Price	$19,000	
4	Interest Rate	4.2%	
5	Number of Payments	72	
6			
7	Monthly Payment	($298.99)	
8			

VLOOKUP

The VLOOKUP function in Excel is a useful tool when you need to perform calculations that reference a table with a range of values. This feature is frequently used when cross referencing incomes with income tax ranges or, as in the example below, cross referencing sales revenues with commission ranges.

Select the cell of the first commission rate, select the Formulas ribbon and then "Insert Function."   In the search field, type "VLOOKUP" and select it from the search results. Click OK.

In the "Lookup_value" field, select the cell with revenue amount.

	A	B	C	D
	VLOOKUP	▾ ⊙ ✗ ✓ *fx*	=VLOOKUP()	

	A	B	C	D
1				
2	**Revenue is Greater than or Equal to**	**But Less Than**	**Then Commission**	
3	$ -	$ 10,000.00	3%	
4	$ 10,001.00	$ 25,000.00	4%	
5	$ 25,001.00	$ 100,000.00	5%	
6	$ 100,001.00	$ 500,000.00	6%	
7	$ 500,001.00		7%	
8				
9				
10	**Salesperson**	**Revenue**	**Commission Rate**	**Commission Paid**
11	Brad Pitt	$ 1,000,000.00	=VLOOKUP()	
12	Meryl Streep	$ 8,000.00		
13	Bradley Cooper	$ 26,000.00		
14	Jennifer Lawrence	$ 150,000.00		
15				
16				
17				

Function Arguments   ? ✗

VLOOKUP

Lookup_value B11   = any
Table_array   = number
Col_index_num   = number
Range_lookup   = logical

=

Looks for a value in the leftmost column of a table, and then returns a value in the same row from a column you specify. By default, the table must be sorted in an ascending order.

  Lookup_value is the value to be found in the first column of the table, and can be a value, a reference, or a text string.

Formula result =

Help on this function   OK   Cancel

In the "Table_array" field, highlight the data in the revenue/commission table, excluding the column headings.

	Revenue is Greater than or Equal to	But Less Than	Then Commission		
2					
3	$ -	$ 10,000.00	3%		
4	$ 10,001.00	$ 25,000.00	4%		
5	$ 25,001.00	$ 100,000.00	5%		
6	$ 100,001.00	$ 500,000.00	6%		
7	$ 500,001.00		7%		
8					
9					
10	Salesperson	Revenue	Commission Rate	Commission Paid	
11	Brad Pitt	$ 1,000,000.00	KUP(B11,A3:C7)		
12	Meryl Streep	$ 8,000.00			
13	Bradley Cooper	$ 26,000.00			
14	Jennifer Lawrence	$ 150,000.00			

Function Arguments ? ✕

VLOOKUP

Lookup_value	B11	🔲 = 1000000
Table_array	A3:C7	🔲 = {0,10000,0.03;10001,25000,0.04;2...
Col_index_num		🔲 = number
Range_lookup		🔲 = logical

=

Important: The "Table_array" range must then be converted to absolute values by entering a $ before each column letter and each row number.

Function Arguments

VLOOKUP

Lookup_value	B11	🔲 = 10000
Table_array	$A$3:$C$7|	🔲 = {0,10
Col_index_num		🔲 = numb
Range_lookup		🔲 = logica

=

In the" Col_index_num" field, enter the relative column number of the Commission data. This table has three columns and the Commission data is in the third column, so enter 3.

VLOOKUP	▾ ◉ ✕ ✓ *fx*	=VLOOKUP(B11,$A$3:$C$7,3)

	A	B	C	D
1				
2	**Revenue is Greater than or Equal to**	**But Less Than**	**Then Commission**	
3	$ -	$ 10,000.00	3%	
4	$ 10,001.00	$ 25,000.00	4%	
5	$ 25,001.00	$ 100,000.00	5%	
6	$ 100,001.00	$ 500,000.00	6%	
7	$ 500,001.00		7%	
8				
9				
10	Salesperson	Revenue	Commission Rate	Commission Paid
11	Brad Pitt	$ 1,000,000.00	11,$A$3:$C$7,3)	
12	Meryl Streep	$ 8,000.00		
13	Bradley Cooper	$ 26,000.00		
14	Jennifer Lawrence	$ 150,000.00		
15				
16				

Function Arguments [?][X]

VLOOKUP

Lookup_value	B11	[⬚]	= 1000000
Table_array	$A$3:$C$7	[⬚]	= {0,10000,0.03;10001,25000,0.04;2500
Col_index_num	3	[⬚]	= 3
Range_lookup		[⬚]	= logical

= 0.07

Looks for a value in the leftmost column of a table, and then returns a value in the same row from a column you specify. By default, the table must be sorted in an ascending order.

Col_index_num is the column number in table_array from which the matching value should be returned. The first column of values in the table is column 1.

Formula result = 0.07

Help on this function   [OK]   [Cancel]

Excel then cross references the salesperson's revenue with the revenue/commission table and determines the appropriate commission rate.

C11   ▼ ●   *fx* =VLOOKUP(B11,$A$3:$C$7,3)

	A	B	C	D
1				
2	Revenue is Greater than or Equal to	But Less Than	Then Commission	
3	$ -	$ 10,000.00	3%	
4	$ 10,001.00	$ 25,000.00	4%	
5	$ 25,001.00	$ 100,000.00	5%	
6	$ 100,001.00	$ 500,000.00	6%	
7	$ 500,001.00		7%	
8				
9				
10	Salesperson	Revenue	Commission Rate	Commission Paid
11	Brad Pitt	$ 1,000,000.00	7%	
12	Meryl Streep	$ 8,000.00		
13	Bradley Cooper	$ 26,000.00		
14	Jennifer Lawrence	$ 150,000.00		
15				
16				

Use AutoFill to determine the commission rates of the other salespersons.

	A	B	C	D
1				
2	Revenue is Greater than or Equal to	But Less Than	Then Commission	
3	$ -	$ 10,000.00	3%	
4	$ 10,001.00	$ 25,000.00	4%	
5	$ 25,001.00	$ 100,000.00	5%	
6	$ 100,001.00	$ 500,000.00	6%	
7	$ 500,001.00		7%	
8				
9				
10	Salesperson	Revenue	Commission Rate	Commission Paid
11	Brad Pitt	$ 1,000,000.00	7%	
12	Meryl Streep	$ 8,000.00	3%	
13	Bradley Cooper	$ 26,000.00	5%	
14	Jennifer Lawrence	$ 150,000.00	6%	
15				
16				

Calculating the commission paid to each sales person is a simple multiplication formula, multiplying the Revenue cell with the Commission Rate cell.

	Revenue is Greater than or Equal to	But Less Than	Then Commission	
1				
2	Revenue is Greater than or Equal to	But Less Than	Then Commission	
3	$ -	$ 10,000.00	3%	
4	$ 10,001.00	$ 25,000.00	4%	
5	$ 25,001.00	$ 100,000.00	5%	
6	$ 100,001.00	$ 500,000.00	6%	
7	$ 500,001.00		7%	
8				
9				
10	Salesperson	Revenue	Commission Rate	Commission Paid
11	Brad Pitt	$ 1,000,000.00	7%	=B11*C11
12	Meryl Streep	$ 8,000.00	3%	
13	Bradley Cooper	$ 26,000.00	5%	
14	Jennifer Lawrence	$ 150,000.00	6%	
15				

	Revenue is Greater than or Equal to	But Less Than	Then Commission	
1				
2	Revenue is Greater than or Equal to	But Less Than	Then Commission	
3	$ -	$ 10,000.00	3%	
4	$ 10,001.00	$ 25,000.00	4%	
5	$ 25,001.00	$ 100,000.00	5%	
6	$ 100,001.00	$ 500,000.00	6%	
7	$ 500,001.00		7%	
8				
9				
10	Salesperson	Revenue	Commission Rate	Commission Paid
11	Brad Pitt	$ 1,000,000.00	7%	$ 70,000.00
12	Meryl Streep	$ 8,000.00	3%	
13	Bradley Cooper	$ 26,000.00	5%	
14	Jennifer Lawrence	$ 150,000.00	6%	
15				

AutoFill the remaining commissions.

	Revenue is Greater than or Equal to	But Less Than	Then Commission	
1				
2	Revenue is Greater than or Equal to	But Less Than	Then Commission	
3	$ -	$ 10,000.00	3%	
4	$ 10,001.00	$ 25,000.00	4%	
5	$ 25,001.00	$ 100,000.00	5%	
6	$ 100,001.00	$ 500,000.00	6%	
7	$ 500,001.00		7%	
8				
9				
10	Salesperson	Revenue	Commission Rate	Commission Paid
11	Brad Pitt	$ 1,000,000.00	7%	$ 70,000.00
12	Meryl Streep	$ 8,000.00	3%	$ 240.00
13	Bradley Cooper	$ 26,000.00	5%	$ 1,300.00
14	Jennifer Lawrence	$ 150,000.00	6%	$ 9,000.00
15				
16				

External Cell Reference

It might be necessary to reference a cell from another worksheet within the workbook. An example would be collecting quarterly totals into an annual report on a separate worksheet. Say the quarterly budget totals are one worksheet and we want to add them together on a separate worksheet.

	A	B	C	D	E	F	G	H
1	External Cell Reference							
2								
3	Smith Family Budget 1st Quarter 2014							
4								
5		Income	Mortgage	Utilities	Cell Phone	Groceries		
6	1/1/14	$7,000	$2,000	$500	$125	$700		
7	2/1/14	$7,000	$2,000	$500	$125	$700		
8	3/1/14	$7,000	$2,000	$500	$125	$700		
9	Quarterly Total	$21,000	$6,000	$1,500	$375	$2,100		
10								
11								
12	Smith Family Budget 2nd Quarter 2014							
13								
14		Income	Mortgage	Utilities	Cell Phone	Groceries		
15	4/1/14	$7,000	$2,000	$500	$125	$700		
16	5/1/14	$7,000	$2,000	$500	$125	$700		
17	6/1/14	$7,000	$2,000	$500	$125	$700		
18	Quarterly Total	$21,000	$6,000	$1,500	$375	$2,100		
19								

Add the quarterly totals for all four quarters (3rd and 4th quarters not shown) and display the results in these cells

	A	B	C	D	E	F	G	H	I
1	External Cell Reference								
2									
3	Smith Family Budget Annual								
4									
5	Year	Income	Mortgage	Utilities	Cell Phone	Groceries			
6	2014								
7									
8									
9									

The formula looks like this:

Note that the source worksheet name has single quotes. This is because the worksheet name contains a space.
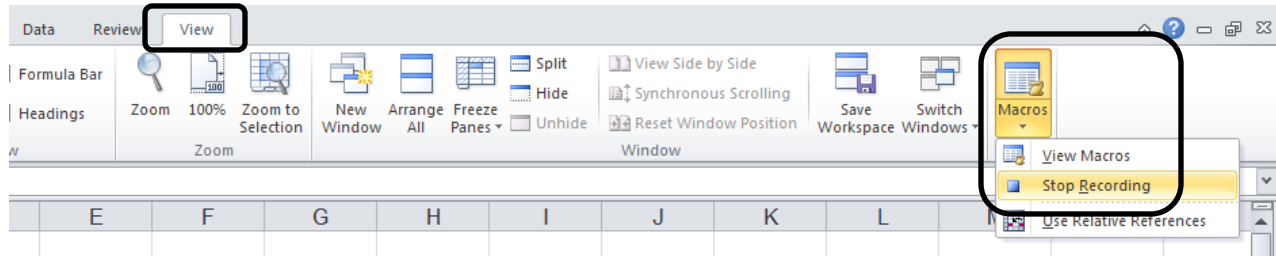
Macros

A Macro is a simple and powerful tool that can save you time. Macros allow you to record a series of steps that you can have Excel repeat whenever you wish. This is especially helpful when using the same formatting and functions for multiple spreadsheets. A Macro is a customized function that is created and saved on your own computer.

Record a Macro
Start with a blank spreadsheet, or a spreadsheet containing data you want Excel to work with. Select the "View" ribbon, then "Macros," and "Record Macro." Select your options from the dialogue box. You can name your Macro, assign it a shortcut (optional), decide where it will be stored, and enter a description (optional).
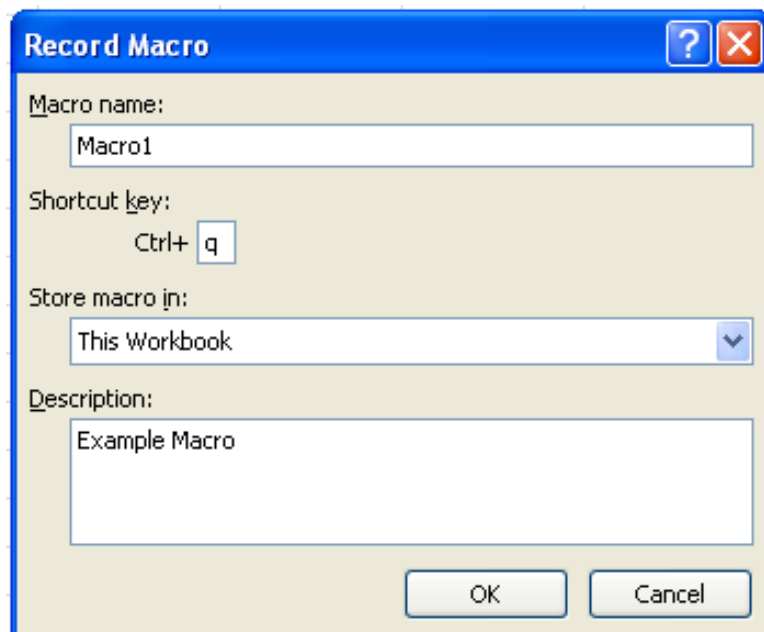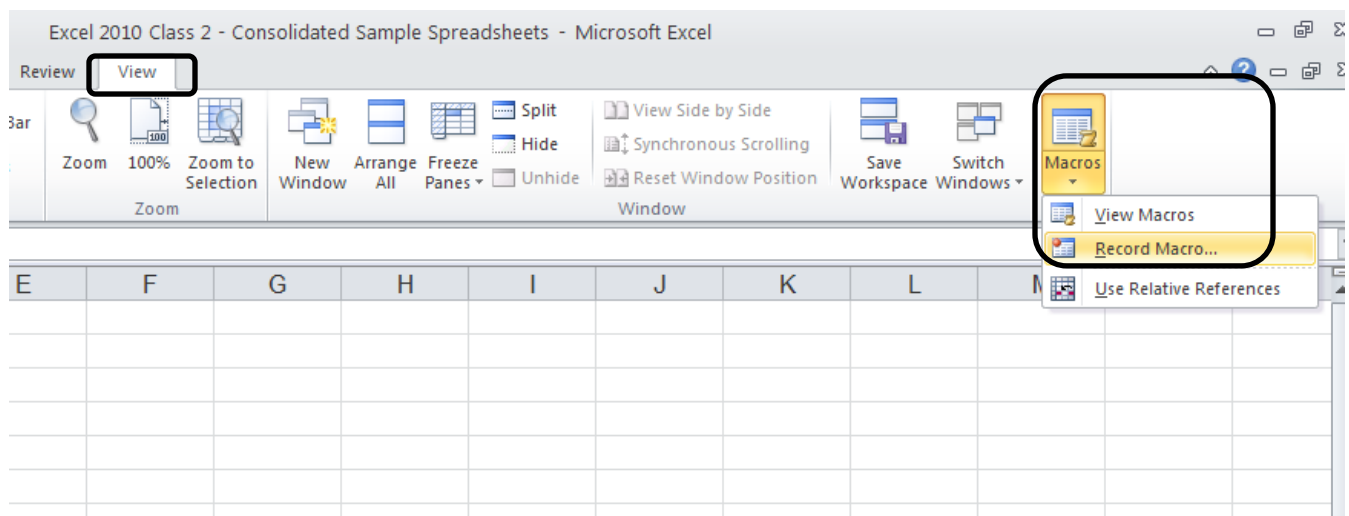
Once you click OK, Excel returns you to your workbook and will be recording every step of what you do next. Be sure to set up your spreadsheet *exactly* how you want it look (formatting, cell sizes, etc). Make any corrections to your spreadsheet while recording as Excel will only save your finished product (after you've turned off the recording).

Once you have finished, go back to the View ribbon, click on "Macro" and chose "Stop Recording."

Run a Macro
Once you have recorded a Macro you can run it again and again within your worksheet, workbook, or anywhere in Excel.
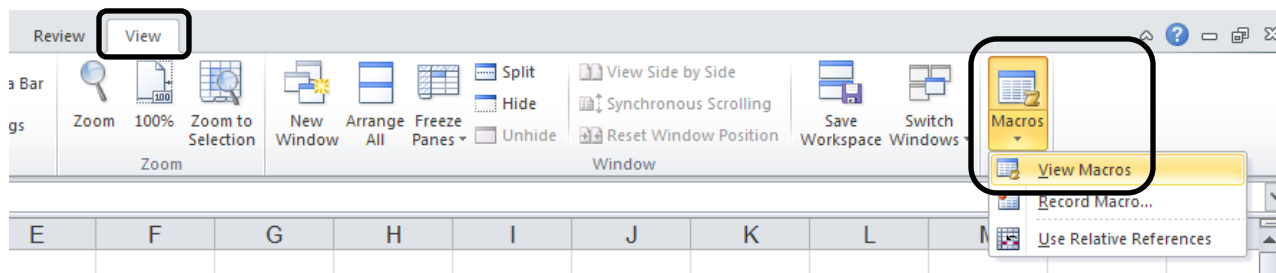
Select the View ribbon. Click on "Macro". Click on "View Macros". Choose the Macro you wish to use, then click "Run".