

25 Excel Tips

Holiday gift eBook from Chandoo.org



Happy Holidays

Before you start....,

Hi there,

Thank you so much for getting a copy of the 25 Excel Tips book.

What is in this book?

We have 25 chapters in this book. Each chapter explains one tip or idea.

To get maximum benefit from this book:

- Read one chapter at a time. Give time for the tips to sink in and apply them.
- Each chapter also has some links at the bottom denoted with star & question mark symbols. Click on these to learn more.
- Many chapters have additional material for you to download or watch. Use them to learn more.

That is all. Go ahead and enjoy this book.



Yours,

A handwritten signature in white ink on a red background, which reads "Chandoo.org".

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Debug formulas using F9 key

Can you imagine building a complex worksheet without formulas? I can't. While no one can dispute the usability of formulas, we all know how painful it is when an excel formula returns a mysterious error and we don't know what is causing it.

When I learned IF() formula for the first time, I have spent a whole Sunday morning debugging a stupid error in a grade calculation formula.

Assuming we have a moderately lengthy formula like this

=IF(AVERAGE(B2:B6)<=AVERAGE(C2:C6),MAX(B2:B6),MAX(C2:C6)) and we want to know where the error is occurring,

1. Select the cell with formula.
- 2. Now select the part of formula that you want to evaluate and press F9**
3. This will evaluate only the selected part and replaces it with the result.
4. Using this technique you can narrow down the errors to particular range or values causing it.
5. When you are done, press ESC.

Select the portion of formula

```
=IF(AVERAGE(B2:B6)<=AVERAGE(C2:C6),MAX(B2:B6),MAX(C2:C6))
```

Press F9 to evaluate it

```
=IF(4.2<=AVERAGE(C2:C6),MAX(B2:B6),MAX(C2:C6))
```



Discuss this topic

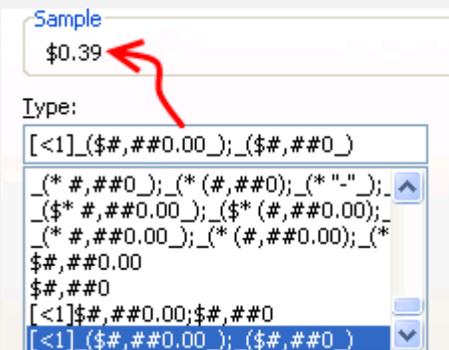


More on Formula Errors

Display decimals when number is less than 1

| Product | Price |
|--------------------------|--------|
| ACME Hair Grower | \$0.39 |
| ACME Handlebars | \$93 |
| ACME Hen | \$0.68 |
| ACME Hi-Speed Tonic | \$57 |
| ACME Hitch-hiker's Thumb | \$0.43 |
| ACME Jet Motor | \$39 |
| ACME Jim-Dandy Wagon | \$0.67 |

decimals
only if the
price < \$ 1



? Discuss this topic  More on Custom Cell Formatting

Here is a quick excel number formatting tip. If you ever want to format numbers in such a way that it shows decimal values only if the number is less than 1 you can use conditional custom cell formatting (do not confuse with conditional formatting).

See the example aside.

In such cases you can use conditions in custom cell formatting.

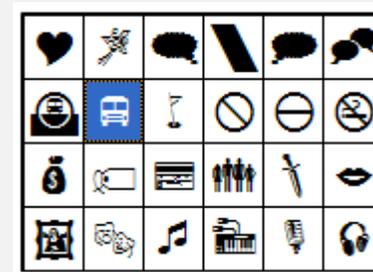
- First select the numbers you want to format, hit CTRL+1 (or right mouse click > format cells)
- In the “Number” tab, select category as “custom”
- Now, write the formatting condition for custom formatting the cell. In our case the condition looks like [<1](\$#,##0.00);_(\$#,##0_). See to the right. what it means is, if the cell value is less than 1 then format the cell in \$#,##0.00 format otherwise format as \$#,##0. Excel cell formatting is a tricky business and if you want to master it there is no better source than Peltier’s article on [Custom Number Formats](#).

Display symbols in Excel charts

Here is a quick excel tip to make your charts look professional by showing symbols in the axis labels instead of text.

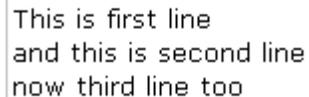
Just follow these 4 simple steps:

- **First identify the symbols you want** to show on the axis or as data label from symbol fonts like webdings, wingdings or a custom dingbat font like [company logos](#)
- **Now use this symbol characters as axis labels**
- **Finally change the font to the selected symbol font**
- Really there is no 4th step, so go ahead add a little jazz to the chart.



 Discuss this topic  More on Axis Labels

Use ALT + Enter to get multiple lines



This is first line
and this is second line
now third line too



Text control

- Wrap text
- Shrink to fit
- Merge cells

 Discuss this topic  More on Formatting

If you need to type content in a cell and you want to see it in multiple lines then use alt + enter to break the content in several lines.

See the example on left.

Bonus tip: If you are using formulas to create content in a cell by [combining various text values](#) and you want to introduce line breaks at certain points ... For eg. you are creating an address field by combining house number, street name, city and zip code and you want to introduce line breaks after house number and street name then you can use CHAR(10). Like this:

```
=house number & CHAR(10) & street name & CHAR(10) & city & zip code
```

Remember when you do this, you need to enable wrap-text feature for that cell from [cell formatting](#) dialog (ctrl+1) to ensure proper display.

Checking for between conditions

Lets say you have 3 values in A1, A2 and A3. And you want to find out if A1 falls between A2 and A3. Now, the simplest formula for such a thing would be test whether the conditions $A1 \geq A2$, $A1 \leq A3$ are both true. Hence, it would look like,

```
=if(AND(A1>=A2,A1<=A3),"Yes", "No")
```

However, there are 2 problems with a formula like above: (1) It assumes that A2 is smaller than A3. (2) It is just too big.

Shouldn't there be a shorter and simpler formula?!?

Well, there is. [Daniel Ferry](#), has come up with a darned clever use of MEDIAN formula to test this. It goes like, `=if(A1=MEDIAN(A1:A3),"Yes","No")`

Now, not only does the above formula look elegant and simple, it also works whether A2 is smaller or larger than A3.

Between Formulas in Excel – Summary and Examples:

| | A | B | C | D | E | F |
|----|---|--------------|-------------|--------------|--------------|--|
| 1 | | | | | | |
| 2 | | Value | Start | End | Is Between? | Formula 1 |
| 3 | | 23 | 10 | 20 | No | =IF(B3=MEDIAN(B3:D3),"Yes","No") |
| 4 | | 23 | 10 | 30 | Yes | =IF(B4=MEDIAN(B4:D4),"Yes","No") |
| 5 | | 23 | 0 | 20 | No | =IF(B5=MEDIAN(B5:D5),"Yes","No") |
| 6 | | 1 June, 2010 | 1 May, 2010 | 1 July, 2010 | Yes | =IF(B6=MEDIAN(B6:D6),"Yes","No") |
| 7 | | 1 June, 2010 | 1 May, 2010 | 12 May, 2010 | No | =IF(B7=MEDIAN(B7:D7),"Yes","No") |
| 8 | | Cheetah | Cat | Tiger | Yes 2 | =IF(AND(B8>=C8,B8<=D8),"Yes","No") |
| 9 | | Cheetah | Goat | Sheep | No | =IF(AND(B9>=C9,B9<=D9),"Yes","No") |
| 10 | | Cheetah | Cat | Coyote | No | =IF(AND(B10>=C10,B10<=D10),"Yes","No") |

 Discuss this topic

 More on Formulas

1 Median formula gives the middle value of the 3. So we just check if that is indeed B3.

2 \leq and \geq work with text too. So we can use them to test BETWEEN conditions.

Fast & Simple: Compare 2 Lists

1 List of Customers

| |
|--------------------------|
| Amey, 2010 |
| List of Customers |
| Amanda |
| Beth |
| Charley |
| Dhanu |
| Elizabeth |
| Floyd |
| Ganesh |
| Ivory |
| Jackson |

2 A Date Occurring... Duplicate Values... More Rules...

3 List of Customers

| |
|--------------------------|
| April, 2010 |
| List of Customers |
| Amey, 2010 |
| List of Customers |
| Andersen |
| Amanda |
| Charley |
| Deeraj |
| Sony |
| Thomas |
| Valerie |
| Zach |

Duplicate Values

Format cells that contain:

Duplicate values with Light Red Fill with Dark Red Text

OK Cancel

A Ridiculously easy and fun way to compare 2 lists

[works only Excel 2007+, use the [this technique](#) if you are on excel 2003 or earlier]

1. Select cells in both lists (select first list, then hold CTRL key and then select the second)
2. Go to Conditional Formatting > Highlight Cells Rules > Duplicate Values
3. Select "Duplicate"
4. Press ok.

See the screenshots aside to see how this works

([click here for a detailed demo](#)).

? Discuss this topic  More on Conditional Formatting

Convert Text to Sentence Case

Excel has formulas for converting a bunch of text to UPPER, lower and Proper Cases.

But not a formula to convert o Sentence case. So, in this tip, we will learn a simple formula tip to convert text to sentence case (ie, First letter capital).

Assuming your text is in C2, the formula is,

```
=UPPER(LEFT(C2,1))&MID(LOWER(C2),2,999)
```

How the formula works?

It is converting first letter of C2 to upper case [UPPER(LEFT(C2,1))] and lower case of rest of C2 [MID(LOWER(C2),2,999)]

The 999 portion is the secret code to unlock ninja features of MID formula.

Well, I am kidding of course, the 999 is just a cop-out to say give me rest of the C2, I don't know the length of it. (of course, 999 would fail if your text actually has more than 1000 chars. In that case, just use 9999 or whatever large number you fancy.)

Another formula:

```
=SUBSTITUTE(LOWER(C2),CHAR(CODE(C2)),UPPER(CHAR(CODE(C2))),1)
```

PS: As you can guess, the above formulas assume that C2 has one sentence. If C2 has a whole paragraph, then I would really need a sandwich before thinking about that problem.

| Your text | make me A sandwich | Formula |
|---------------|---------------------------|--|
| Upper case | MAKE ME A SANDWICH | =UPPER(C2) |
| Lower case | make me a sandwich | =LOWER(C2) |
| Proper case | Make Me A Sandwich | =PROPER(C2) |
| Sentence case | Make me a sandwich | =UPPER(LEFT(C2,1))&MID(LOWER(C2),2,999) |



Discuss this topic



More on Formulas

Use Alerts in Dashboards

| | Totals | | | | per Week | | Trend | | Priority |
|------------------|--------|-------|------|-----|----------|-------|-------|-------|----------|
| | Bugs | Fixed | Open | O % | Bugs | Fixes | Bugs | Fixes | C H M L |
| by Tester | | | | | | | | | |
| Ram | 134 | 69 | 65 | 49% | 5.6 | 2.9 | | | |
| Shyam | 114 | 61 | 53 | 46% | 4.8 | 2.5 | | | |
| Ramesh | 108 | 51 | 57 | 53% | 4.5 | 2.1 | | | |
| Suresh | 115 | 59 | 56 | 49% | 4.8 | 2.5 | | | |
| by Coder | | | | | | | | | |
| Prashant | 103 | 48 | 55 | 53% | 4.3 | 2.0 | | | |
| Trisha | 124 | 56 | 68 | 55% | 5.2 | 2.3 | | | |
| Prasoon | 126 | 74 | 52 | 41% | 5.3 | 3.1 | | | |
| Tamanna | 118 | 62 | 56 | 47% | 4.9 | 2.6 | | | |

Format all cells based on their values:

Format Style: Icon Sets

Display each icon according to these rules:

| Icon | when value is | Value | Type |
|------|---------------|-------|---------|
| | when value is | >= 67 | Percent |
| | when < 67 and | >= 33 | Percent |
| | when < 33 | | |

Icon Style: 3 Traffic Lights (Unrimmed) Reverse Icon Order Show Icon Only

3 traffic lights in reverse and show icon only

? Discuss this topic More on Dashboards

Dashboards can be overwhelming with lots of details and context. A simple way to drag user's attention to important stuff in the dashboard is to use alerts. See this example to understand what alerts mean.

How to display alerts in Excel Dashboards?

The easiest way to display alerts is to use Excel 2007's **Conditional Formatting** feature – Icon sets.

[Excel 2007+]

Assuming you have a table in dashboard like shown aside

1. Select the alert column
and go to Conditional Formatting > Icon sets
> 3 Traffic Lights (unrimmed)
2. Go to Conditional Formatting > Edit Rules
3. check "Icons in reverse order"
and "Show icons only" buttons and
you are done!

| Data | | Excel 2007 - CF | |
|-------------------|--------|-------------------|--------|
| KPI | Alert? | KPI | Alert? |
| Expenses | 1 | Expenses | |
| Budget | | Budget | |
| Time | 1 | Time | |
| Tasks Finished | | Tasks Finished | |
| Bugs | | Bugs | |
| Fixes | 1 | Fixes | |
| Re-opens | 1 | Re-opens | |
| Change Requests | 1 | Change Requests | |
| User Satisfaction | | User Satisfaction | |
| Sales | | Sales | |
| Refunds | 1 | Refunds | |

For Excel 2003 [click here](#).

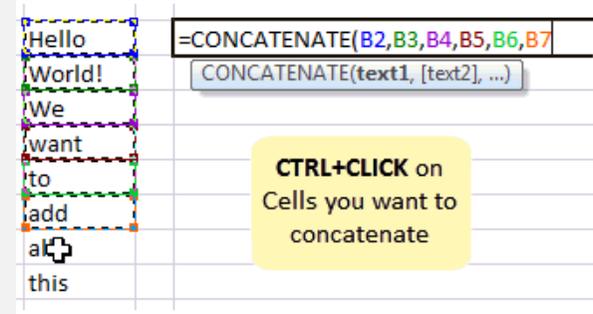
CTRL+Click speeds up formula entry

Sometimes we think there is very little we can improve in something and then we come across an idea that would change our perceptions. I have been writing excel formulas for such a long time that it was easier to remember when I first shaved than when I first wrote a formula.

I want to present a very interesting functionality in Excel that would save a lot of time when you are entering formulas in spreadsheets.

If we have 5 cells and we want to CONCATENATE all the text in them to one cell, we would usually write =CONCATENATE(and then start typing addresses of each cell one by one.

But there is a faster and simpler way to do this. You can **just hold the CTRL key down and select all the five cells one after another and excel will neatly type the references for you** and include a comma to separate them. **You can also use the same technique for speeding up formula entry for other multi-argument formulas like VLOOKUP, MATCH etc.** Just select the cells corresponding to each parameter in that order while holding the CTRL key down.

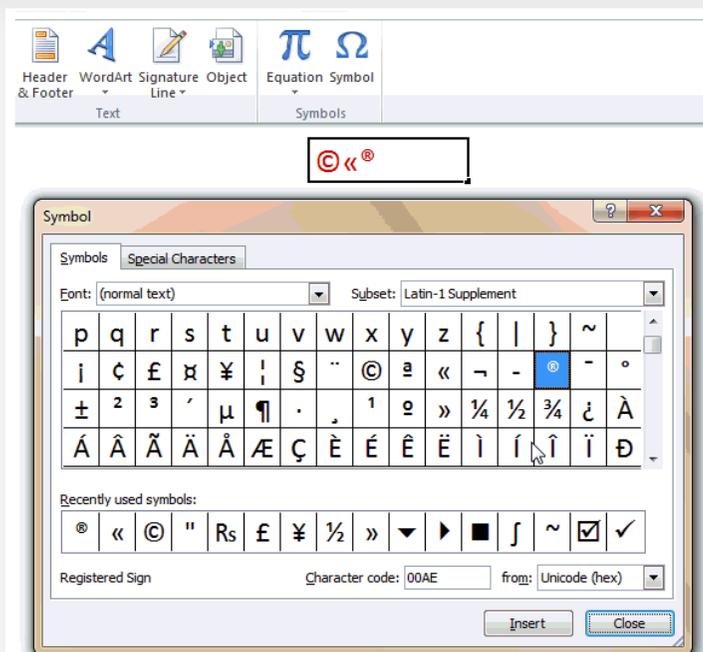


Discuss this topic



More on using Mouse

How to Add Symbols like ©£ to Excel?



Discuss this topic



Using Symbols in Charts

Often, we need to input special symbols like €£¥©½» in to our Excel sheets. **Now, how do we do that?**

Simple, **Use Insert > Symbol** to add several different kinds of symbols.

([see the demo](#))

5 Bonus tips on using Symbols:

1. You can just double click on the character to insert it. No need to press Insert button.
2. You can quickly open insert symbol dialog by pressing ALT+I and then S. (related: [97 keyboard shortcuts to boost your excel mojo](#))
3. You can use the symbols in formulas too. For eg. you can show ? or ? or ? based on change of one value wrt to another. Like this:
 - =if(A1>A2, "↑", if(A1<A2,"↓","↔"))
4. Quickly access symbols to specific to currency, arrows or greek chars by using the drop-down at top-right.
5. Change the font to Wingdings / Webdings to see some useful and fun characters. You can spice dashboards or reports with these.

2nd Largest Value Matching a Condition

[Excel Array Formulas](#) have subtle beauty and raw power. Lets use them to find-out the 2nd largest sale amount for a particular product.

Lets say you have sales data as shown aside

Now, we all know that, to get 2nd largest sale amount, we can use the [LARGE\(\)](#) formula. Like this: =LARGE(RANGE,2)

But, how do we know what is the 2nd largest sale amount for the product “bricks”?

This is when an array formula can help you.

Formula

```
=LARGE(IF(PRODUCTS_RANGE="Bricks",SALES_RANGE,""),2)
```

and press CTRL+SHIFT+ENTER.

Explanation:

Instead of directly giving the SALES_RANGE to LARGE formula, we are asking excel to include empty spaces "" wherever product <> “Bricks” thru the IF() formula inside LARGE().

When you press CTRL+SHIFT+Enter, excel treats the formula as array formula and processes the lists of values inside nicely.

How much is 2nd highest sale
for Product Bricks?

| Transaction ID | Product | Sale Amount |
|----------------|---------|-------------|
| t0001 | Bricks | 120 |
| t0002 | Blocks | 125 |
| t0003 | Blocks | 105 |
| t0004 | Bricks | 100 |
| t0005 | Bricks | 80 |
| t0006 | Bricks | 66 |
| t0007 | Blocks | 88 |
| t0008 | Blocks | 21 |
| t0009 | Blocks | 25 |
| t0010 | Bricks | 101 |



Discuss this topic



More on using Mouse



Download Excel Workbook with Examples

Values from Several Columns with VLOOKUP

| Sales Person | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|--------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Joseph | \$ 22 | 22 | 24 | 25 | 26 | 28 | 30 | 32 | 33 | 33 | 36 | 36 |
| John | 10 | 10 | 11 | 11 | 12 | 12 | 13 | 13 | 14 | 15 | 15 | 15 |
| Josh | 26 | 26 | 27 | 27 | 27 | 27 | 29 | 30 | 30 | 32 | 32 | 34 |
| Jamie | 18 | 19 | 20 | 20 | 20 | 21 | 22 | 23 | 23 | 24 | 25 | 25 |
| Jackie | 19 | 20 | 22 | 24 | 25 | 25 | 25 | 27 | 29 | 30 | 30 | 31 |
| Johnson | 16 | 17 | 18 | 18 | 19 | 20 | 22 | 24 | 25 | 26 | 27 | 28 |
| Jonathan | 15 | 16 | 17 | 17 | 18 | 18 | 18 | 19 | 19 | 20 | 20 | 22 |
| Jagjit | 10 | 11 | 11 | 11 | 12 | 13 | 13 | 14 | 14 | 14 | 15 | 15 |
| Jairam | 21 | 21 | 21 | 23 | 24 | 24 | 25 | 26 | 27 | 29 | 30 | 32 |
| Jessy | 25 | 26 | 27 | 28 | 29 | 29 | 29 | 30 | 31 | 34 | 37 | 40 |
| Javed | 22 | 24 | 25 | 26 | 28 | 28 | 29 | 31 | 34 | 35 | 35 | 35 |
| Jimmy | 23 | 24 | 24 | 24 | 25 | 26 | 27 | 28 | 30 | 33 | 35 | 37 |
| Juno | 19 | 20 | 20 | 21 | 22 | 24 | 24 | 26 | 27 | 27 | 28 | 30 |

VLOOKUP - Returning Multiple Columns in Output - Examples

| | |
|----------|--|
| Question | Total Sales in Months Jan, Feb & Mar for the person Joseph |
| Formula | <code>{=SUM(VLOOKUP("Joseph",B5:SN17,{2,3,4},FALSE))}</code> |
| Answer | 68 |
| Question | Maximum sales per month of Josh |
| Formula | <code>{=MAX(VLOOKUP("Josh",B5:SN17,{2,3,4,5,6,7,8,9,10,11,12,13},FALSE))}</code> |
| Answer | 34 |
| Question | Average monthly sale for Jonathan |
| Formula | <code>{=AVERAGE(VLOOKUP("Jonathan",B5:SN17,{2,3,4,5,6,7,8,9,10,11,12,13},FALSE))}</code> |
| Answer | 18.25 |



Discuss this topic



More on VLOOKUP Formula



Download Excel Workbook with Examples

Situation

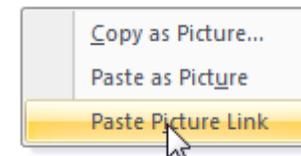
VLOOKUP is great for extracting information from a huge data table based on what you are looking for. But what if you need to extract more than one column of information? For eg. Lets say you have salesperson's name in left most column, and monthly sales figures in next columns, one for each month. Now, you want to find the total sales made by a given sales person. How do you go about it?

Assuming your data looks like the table aside,

Solution

Simple. You can use an array in the column number field of VLOOKUP. So for eg. `=SUM(VLOOKUP(value, list, {2,3,4}, false))` will give you sum of values in columns 2,3 and 4. Of course you must press CTRL+SHIFT+Enter after typing the formula. See few more examples in the box aside.

Using Picture Links in Excel



In this lesson, we will learn a new excel feature, called as **Picture links**. Well, picture links are not really new, they are called as [camera snapshots](#) in earlier versions. They provide a live snapshot of a range of cells to you in an image. So that you can move the image, resize it, position it wherever you want and **when the source cells change, the picture gets updated, immediately.**

What is the use of Picture Links or Camera Snapshots?

Here are few sample uses for picture links:

In dashboards & reports: Usually in [dashboards](#), we need to combine charts, tables of data, conditional formatting etc., all in one sheet. When the size of these are not uniform, aligning them on output sheet could be a huge pain. This is when you can use picture links. First create the individual portions of dashboard in separate worksheets. Then, embed picture links to these portions in final dashboard. Re-size them and align as you see fit.

See this in action: [Project management dashboard in excel.](#)

In micro-charts & sparklines: While [Excel 2010 has native support for sparklines and other micro-charts](#), if you want to create a micro-chart in earlier versions of excel you have to use trickery. This is where picture links can help. You can make a regular chart and take a picture link of that. Then resize the picture so that it fits in to a small area.

See this in action: [Micro-charts using camera tool.](#)

In Dynamic Charts: Since picture links are nothing but images with a formula assigned to them, you can easily construct dynamic charts & dynamic dashboards using these.

See this in action: [Dynamic chart using camera tool](#), [Dynamic dashboard using camera tool](#)

In shared workbooks: When you share a workbook with a colleague or boss, a common worry is what if they change formulas or edit something. This is where picture links can be of great use. You can embed a picture link of actual data so that no one can edit it.

Contd. in next page...

Using Picture Links in Excel

How to insert a picture link in Excel – 3 step tutorial:

To insert a picture link to your data, just follow these 3 steps:

- Select the cells. Press CTRL+C
- Go to a target cell. From home ribbon select Paste > As picture > Picture link option (see image below)
- That is all. Your picture link is live. Move it or play with it by changing source cells.

How to paste a picture link (aka camera snapshot)

The screenshot illustrates the process of creating a picture link in Excel. It shows the 'Clipboard' task pane with 'Copy' selected (Step 1). The 'Paste' menu is open, showing 'As Picture' selected (Step 2), which has opened a sub-menu where 'Paste Picture Link' is chosen. The resulting picture link is shown in a cell, which updates when the source data changes (Step 3). The source data is shown in the formula bar as `=B3:B6`.

1 Select the cells you want and copy

2 Go to paste > picture link

3 Move it or play with it.

© chandoo.org

? Discuss this topic  More on Picture Links

Format Multiple Sheets by Grouping

Often we come across workbooks that have similar formatting needs for multiple worksheets. For eg. you may have sales records spanning across 12 worksheets, one for each month. And you want to keep the formatting of all these worksheets consistent. **So here is a quick tip to begin your work week.**

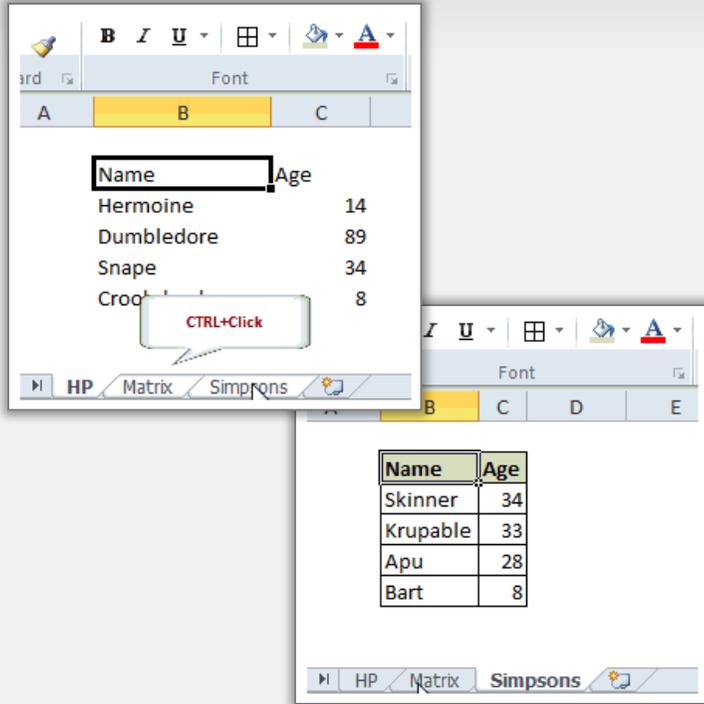
1. Just select all the different sheets (select one, then hold CTRL key and click on other sheet names).
2. Now format any sheet and similar formatting will be applied to all selected sheets
3. See [this demo](#) to understand

The group & format technique is particularly useful when you,

- Want to apply same header / footer / print settings to multiple worksheets
- Want to write similar formulas in multiple worksheets (for eg. totals)

⚠ CAUTION:

- Turn-off the grouping by selecting any one sheet tab after formatting. Otherwise, any changes you make will be applied to all sheets.



The screenshot shows the Excel Font ribbon with a table of data. A callout box with the text "CTRL+Click" points to the "Name" header cell. Below the ribbon, a table is displayed with the following data:

| Name | Age |
|------------|-----|
| Hermoine | 14 |
| Dumbledore | 89 |
| Snape | 34 |
| Crook | 8 |

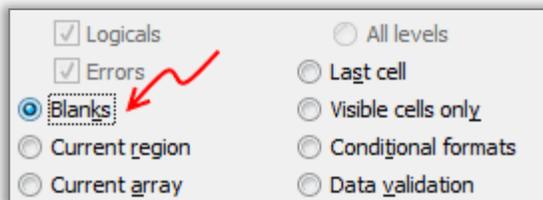
At the bottom of the screenshot, there are two buttons: a question mark icon with the text "Discuss this topic" and a yellow star icon with the text "More on Formatting".

Remove Blank Rows Quickly

| Customer | Age |
|----------|-----|
| John | 23 |
| James | 28 |
| Joey | 29 |
| | |
| Jenny | 24 |
| Kate | 25 |
| | |
| Kathy | 29 |
| Kerry | 31 |
| Karen | 30 |



| Customer | Age |
|----------|-----|
| John | 23 |
| James | 28 |
| Joey | 29 |
| Jenny | 24 |
| Kate | 25 |
| Kathy | 29 |
| Kerry | 31 |
| Karen | 30 |



Discuss this topic



Video Tutorial of this

Blank rows or Blank cells is a problem we all inherit one time or another. This is very common when you try to import data from somewhere else (like a text file or a CSV file).

Use this procedure to remove blank rows quickly,

- Select your data, Press F5
- This opens “Go to” dialog in Excel. Now hit on that “select” button.
- From “select special” screen, select “Blanks” (shown aside)
Now, all the blank cells will be selected.
- Just press CTRL and Minus sign (-)
- Select “shift cells up” or “entire row” as needed.
- That is all. Now you have successfully removed blank rows.

Bonus tip – Keyboard shortcut to remove blank rows:

Press these keys in the same order once you select the cells.

- F5 ALT+s k Enter CTRL+ – u Enter

Watch this tutorial on



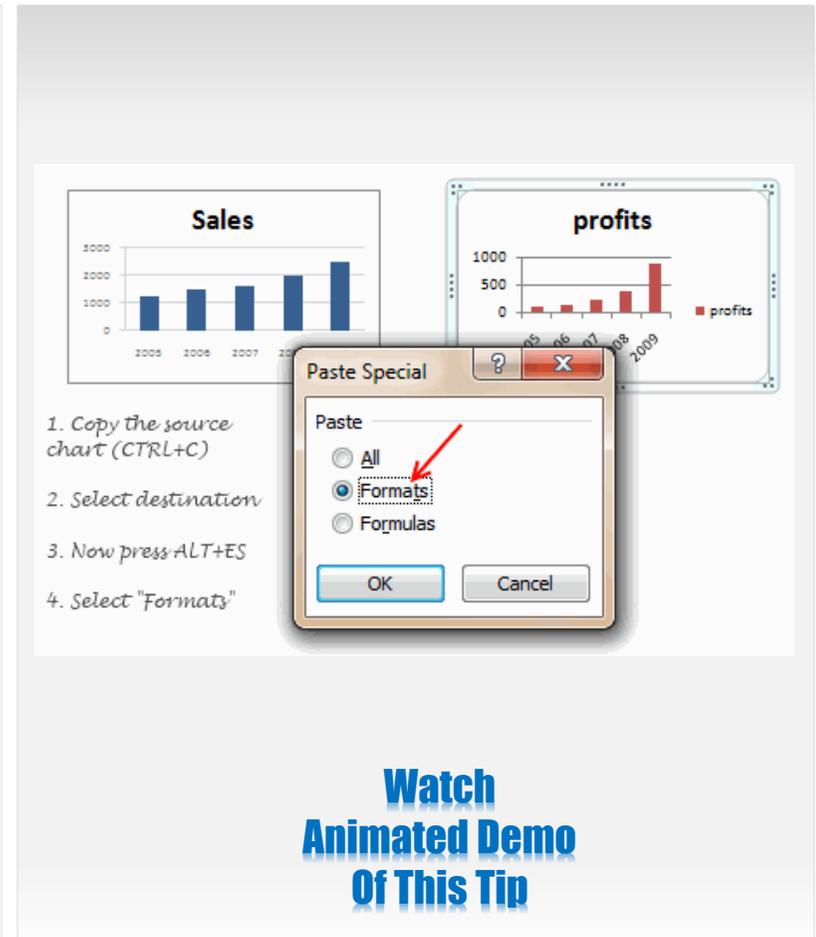
Format Multiple Charts Quickly

When we have multiple charts, ensuring consistent color schemes, fonts etc. is very important. Often we individually format the charts because they have different chart types or source data. But instead, **you can just use paste special to copy and paste chart formatting** (formatting of labels, grid line settings, axis settings, colors, legends, titles) from one chart to another.

See the illustration aside.

- To do this, Select the source chart, press Copy (or CTRL+C)
- Now select the destination chart, go to Paste Special (or press ALT+ES).
- From the dialog select "Formats".

 Discuss this topic  More on Formatting



1. Copy the source chart (CTRL+C)
2. Select destination
3. Now press ALT+ES
4. Select "Formats"

**Watch
Animated Demo
Of This Tip**

Reverse a List of Values

| | A | B | C |
|---|----------|---|----------|
| 1 | Jackson | | Whoson |
| 2 | Simpson | | Dadson |
| 3 | Erickson |  | Erickson |
| 4 | Dadson | | Simpson |
| 5 | Whoson | | Jackson |



**Download
Example
Excel Workbook**



Discuss this topic



More tips on INDEX formula

Here is a simple yet novel use of formulas.

Let us say you have a list of values in range A1:A5 and you want to reverse the list.

In an empty cell write `=INDEX(A1:A5,COUNTA(A1:A5)-ROWS(A1:A1)+1)` and copy down. Boom, you get the reversed list.

Here is how the formula works:

- In the reversed list, first item is last item in the original list (ie 5th item in our case).
- INDEX() formula takes a list, a row number (and optional column number) and returns the value at intersection.
- In this case, \$A\$1:\$A\$5 is the list.
- 5 is the size of list.
- ROWS(\$A\$1:A1) gives running numbers from 1 thru 5 when copied in any range of 5 cells. Read more on [using ROWS\(\) formula](#).

Modify Formulas using Find / Replace

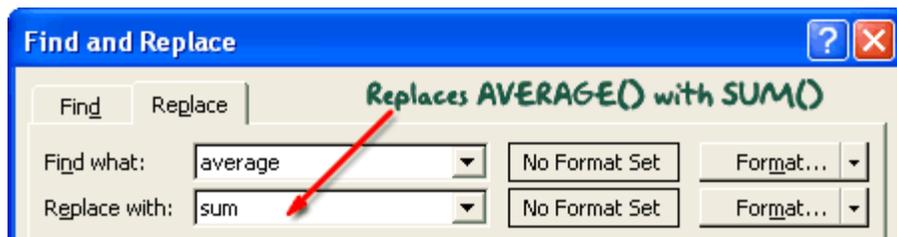
So you have built that spreadsheet report your boss wanted. And you were all eager to use it in your presentation. But in the last minute, your boss asked you to change average sales to total sales figures (or measure growth wrt to 2006 instead of 2007). You also want to grab an espresso before rushing to the meeting. **Now what?**

Simple, skip the coffee.

Of course, I am kidding, who would skip coffee for a bunch of formulas ?

So, we use Find / Replace to do the dirty work while we let the roasted beans restore sanity. Just **press Ctrl+`** (it is the key next to 1), this will enable **formula view**.

Now press Ctrl+H and change the spreadsheet formulas or input range en masse.



You can also [use find / replace to change spreadsheet formatting](#).

 Discuss this topic  More on Find Replace

Calculate Elapsed Time

| <i>Chandoo.org Started on</i> | |
|-------------------------------|--------------|
| 6/1/2004 6:47:00 | |
| 9/22/2009 9:07:49 | Time now |
| <i>Elapsed Time in</i> | |
| 5.31 | Years |
| 65 | Months |
| 277 | Weeks |
| 1,386 | Working Days |
| 1939 | Days |
| 46,538 | Hours |
| 2,792,301 | Minutes |
| 167,538,049 | Seconds |



**Download
Example
Excel Workbook**



Discuss this topic



Working with Date & Time

Elapsed time is nothing but interval between a starting point and the current point in time. We can use excel formulas to calculate elapsed time very easily.

For all the examples in this, the starting date-time is in Cell A1.

Calculating elapsed time in years

$= (\text{NOW}() - A1) / 365$ [[Help on NOW formula](#)]

Elapsed time in months

$= (\text{NOW}() - A1) / 30$. *This returns the value in 30 day months.*

Elapsed time in weeks

$= (\text{NOW}() - A1) / 7$

Elapsed time in days

$= \text{TODAY}() - A1$. [[Help on TODAY formula](#)]

Elapsed time in working days

To calculate elapsed time in working days, we can use the [NETWORKDAYS formula](#)

This formula assumes 5 working days per week starting with Monday.

Elapsed time in hours

$= (\text{NOW}() - A1) * 24$

Refer to download workbook for more examples

Awesome Data Labels

We all know that Chart Data Labels help us highlight important data points.

When you “add data labels” to a chart series, excel can show either “category” , “series” or “data point values” as data labels. **But what if you want to have a data label that is altogether different (see pic. 1).**

You can change data labels and point them to different cells using this little trick.

- First add data labels to the chart (Layout Ribbon > Data Labels)
- Define the new data label values in a bunch of cells (see pic 2).
- Now, click on any data label. This will select “all” data labels. Now click once again. At this point excel will select only one data label.
- Go to Formula bar, press = and point to the cell where the data label for that chart data point is defined.
- Repeat the process for all other data labels, one after another. See the screencast.

Points to note:

- This approach works for one data label at a time..
- Try Rob Bovey’s [Chart Labeler Excel Add-in](#). This free tool can automate the whole custom chart labeling for you.

1

Top Reasons Why Customers Call us
Changes from last month shown in (%)

| Reason | Count | Change (%) |
|-------------------|-------|------------|
| Installation FAQs | 400 | 5% ↑ |
| Lost Password | 350 | 3% ↓ |
| Upgradation | 150 | 25% ↑ |
| Renewal | 40 | 56% ↓ |
| Cancellation | 30 | 50% ↑ |
| Refunds | 30 | 0% ↔ |

2

Custom Label

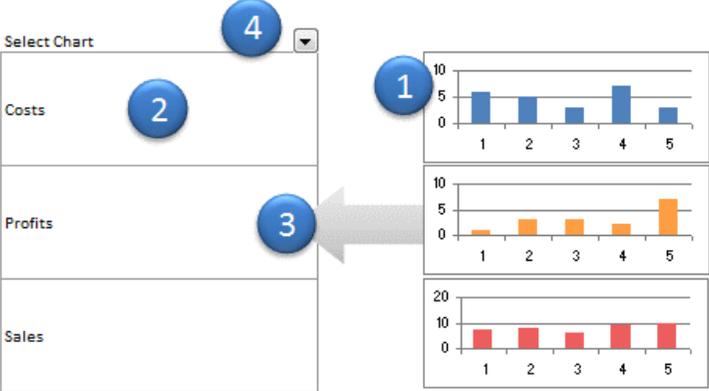
| |
|------------|
| 400(5% ↑) |
| 350(3% ↓) |
| 150(25% ↑) |
| 40(56% ↓) |
| 30(50% ↑) |
| 30(0% ↔) |

Watch Animated Demo Of This Tip

? Discuss this topic

★ More on Chart Formatting

Create a Dynamic Chart in 2 Minutes



- 1 First make the charts
- 2 Create 3 cells and size them so that charts can fit inside, Also type chart names
- 3 Move the charts so that they fit inside the cells
- 4 Apply data filters, you have a nice dynamic chart now

? Discuss this topic ★ More on Dynamic Excel Charts

Here is a dead simple way to create a Dynamic Chart in Excel in less than 2 minutes.

First [take a look at the dynamic charts in excel demo](#).

Just follow these 5 steps to create the dynamic chart in excel:

1. **Prepare your charts:** Make as many charts as you want. Lets say 3.
2. **Set up the area where dynamic charts will be loaded:** Just take 3 cells in a row and adjust the row height and column width such that the charts can be fit inside snugly. Also, type the chart names (1 for each cell) in the cell. Let us say, the charts you have are for Costs, Sales and Profits, just type these names in the cells.
3. **Move and fit charts inside these cells:** This should be simple.
4. **Finally apply data filter** to the cell on top of the 3 cells. Select a filter option and you will see only that chart.

**Watch
Animated Demo
Of This Tip**

Calculate Moving Average

Moving average is frequently used to understand underlying trends and helps in forecasting.

Calculate Moving Average

To calculate moving average, all you need is the good old [AVERAGE excel function](#).

Assuming your data is in the range B1:B12,

Just enter this formula in the cell D3 `=AVERAGE(B1:B3)`

And now copy the formula from D3 to the range D4 to D12 (since you are calculating moving average of 3 months, you will only get 10 values; $12-3+1$)

Calculate Moving Average of Latest 3 Months Alone

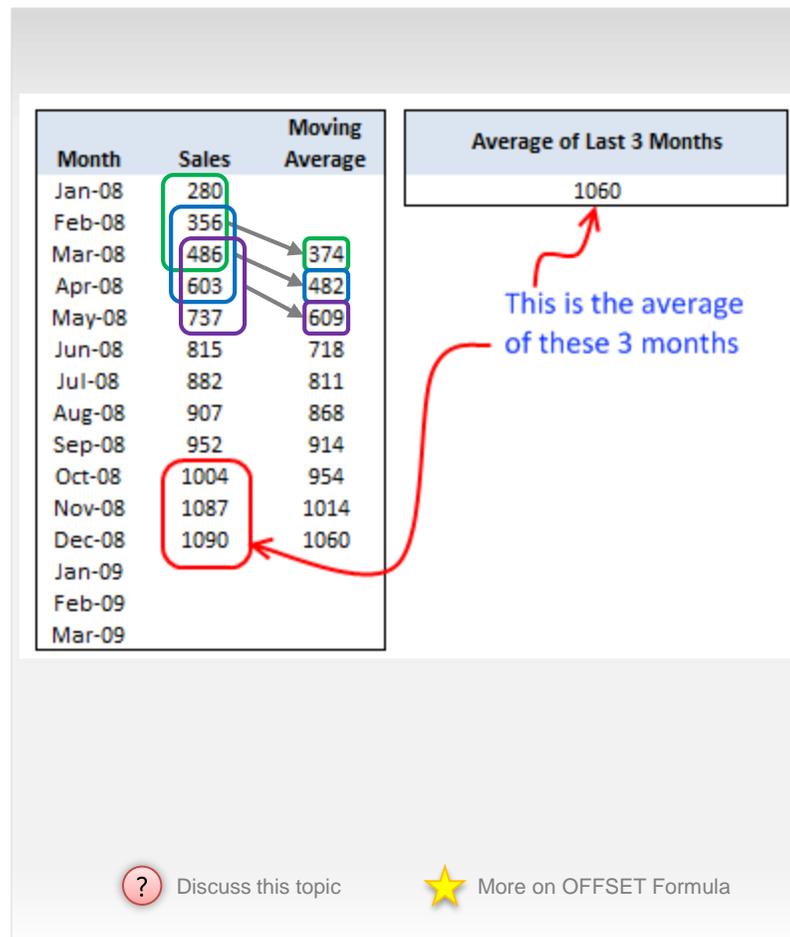
Lets say you need to calculate the average of last 3 months at any point of time.

Formula:

```
=AVERAGE(OFFSET(B4,COUNT(B4:B33)-3,0,3,1))
```

Explanation:

We are counting the number of months with `COUNT(B4:B33)` and then getting data for 3 last months using `OFFSET(B4,COUNT(B4:B33)-3,0,3,1)`. Finally we are passing this range to `AVERAGE` function to calculate the moving average of latest 3 months.

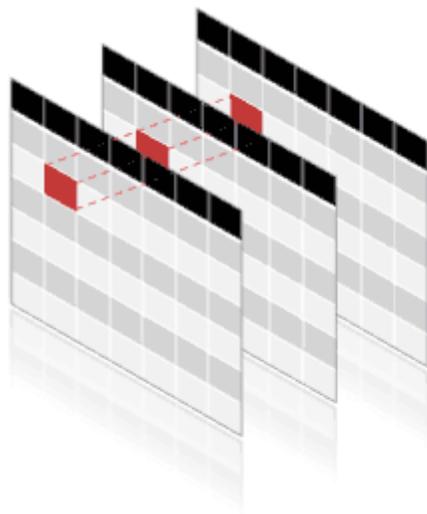


Discuss this topic

More on OFFSET Formula

Excel 3D References – What are they?

No, don't fetch your 3D glasses. 3D references are your way to refer to same cell in multiple sheets. Confused ? See this illustration:



3D References

Perform operations on same cells in multiple sheets

```
=SUM(SHEET1:SHEET3!B2)
```

Adds B2 values in Sheet1,2 and 3

So we can use 3D references to compute the average of cell D5 across various worksheets. Assuming the sheets are arranged such that we have Shelly's sheet first and Zack's sheet in the end, the formula will look like, =average(She1ly:Zack!D5)

 Discuss this topic

[See 3D References in Action ▶](#)

5 Awesome Mouse Tips!

[? Discuss this topic](#) [★ More Mouse Shortcuts](#)

When it comes to productivity, many of us think of keyboard shortcuts. **But you can also boost productivity a lot by using mouse.** That is right. See this list of 5 tips.

- 1 **Double click on Office button / Logo to close Excel**
- 2 **Adjust column widths & row heights by double clicking on the separators**
- 3 **Double click in the corner, just above scrollbar to include a split**

You can create a vertical split by clicking on the little bar shape next to horizontal scroll-bar near bottom right corner of the excel window.

(If you are wondering where the split would be created, it will be created at selected cell's row (or column))

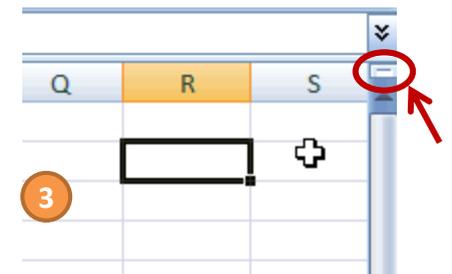
- 4 **Double click on ribbon menu names to collapse ribbon to get more space**

In MS Office 2007 or above you can double click on the ribbon menus to collapse the ribbon to one line.

- 5 **Auto-fill a series of cells with data or formulas by just double clicking**

I have saved countless minutes ever since I learned this little trick. Lets say you have a table where in one column you have some data and in the next you have written a formula in the first row. Now just select the formula in first cell, double click in the bottom right corner and see the magic.

| | A | B | C |
|---|---|--------------|-----|
| 1 | | Name | Age |
| 2 | | Bill Gates | 50 |
| 3 | | Matt Damon | 45 |
| 4 | | Joel Spolsky | 34 |



| | |
|--------|---|
| Bill | 1 |
| John | 2 |
| George | |
| Beth | |
| Anna | |
| Kenn | |

[Watch Animated Demo Of These Tips](#)

Filter Even or Odd Rows Only!

Sometimes, we may need to filter only even or odd rows, as shown aside. Just follow the below 5 steps to do this.

1. Add an extra column at the end of your data.
2. Type =ISEVEN(B3) to test whether the number in B3 is even or odd.
3. Drag the formula to fill the entire range.
4. Now filter either TRUE or FALSE values.
5. That is all. You have filtered even or odd rows.

Bonus tips:

- You can filter every third row using =MOD(B3,3) and then filtering out all 0s. [Help on MOD formula.](#)
- You can highlight alternative rows in different colors [using conditional formatting.](#)
- Or [use Excel Tables](#) to automatically zebra-line (ie shade alternative rows in different color).

| Row # | Some Text | Some Other Text |
|-------|---------------|-----------------|
| 1 | Chandoo.org | Other |
| 2 | That | I also like |
| 3 | can | blogs |
| 4 | is | coffee |
| 5 | make you | I like are, |
| 6 | right, | sandwiches |
| 7 | awesome | peltiertech.com |
| 8 | <i>really</i> | and |
| 9 | in | Data Pig's blog |
| 10 | awesome | sleep |
| 11 | Excel | contextures.com |

How to filter
only odd or
even rows?

**Watch
Animated Demo
Of This Tip**

 Discuss this topic

 More on using Data Filters

25 Bonus Tips – Important Shortcuts

| Shortcut | What it does? |
|------------------|---|
| CTRL + SPACE | Select the whole column (SHIFT+SPACE for row) |
| CTRL + * | Select a continuous range of data, no matter where your cursor stands in the array |
| CTRL + SHIFT + { | Select all cells that are directly or indirectly referred to by formulas in the selection |
| F4 | Change the type of cell reference from relative to absolute or semi-absolute |
| F4 | During non-formula editing mode, Repeats whatever you did last. |
| F3 | Display range names (can be used when typing formulas) |
| ALT + TUF | Evaluate formulas. (its easy to remember when working with some “tuf” formulas!) |
| CTRL + ' | Copy a formula from above cell and edit |
| CTRL + A | Display the formula palette after you type a valid function name in a formula |
| CTRL + ` | Alternate between displaying cell values and displaying cell formulas |

| Shortcut | What it does? |
|----------------------|---|
| CTRL + [| Select all precedent cells |
| CTRL + 1 | Format Selection (cells, objects, charts) |
| CTRL + SHIFT + 1 | Format as number with 2 decimal points |
| CTRL + 9 | Hide row (CTRL+0 for column) |
| CTRL + 5 | Sets/removes strikethrough in current cell |
| CTRL + SHIFT + 7 | Single border around selected cells |
| CTRL + K | Insert hyperlink |
| ALT + WFF | Freeze panes |
| ALT + HW (2007+) | To wrap lines |
| F12 | Save as |
| CTRL + F1 | Collapse the ribbon (press again to expand) |
| ALT + DFS | Keep filter on columns, but show all rows |
| CTRL + SHIFT + L | Turn filter on or off |
| ALT + ESV | Paste values only |
| F5 + ALT + SK, ENTER | Select blank cells |

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