A Brief Guide to MS Excel

Ananya Rao

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A concise set of notes on Microsoft Excel.

Notes based on LinkedIn Learning course : Excel Essential Training (Office 365/Microsoft 365) by Dennis Taylor.

Contents

1 ENTERING DATA **3**
- 1.1 Exploring Data entry, Editing, and AutoFill . . . 3
- 1.2 Working with Dates and Times . . . 3
- 1.3 Undo & Redo . . . 4

2 FORMULAS AND FUNCTIONS **4**
- 2.1 Using Simple Formulas . . . 4
- 2.2 Copying a formula into adjacent cells . . . 4
- 2.3 Using SUM and AVERAGE . . . 4
- 2.4 XLOOKUP and lookup functions . . . 5

3 FORMATTING **5**

4 ADJUSTING WORKSHEET LAYOUT AND DATA **5**
- 4.1 Rows and columns: Insert, delete, hide, and unhide . . . 5
- 4.2 Moving copying and Inserting Data . . . 6
- 4.3 Finding and replacing data . . . 6

5 PRINTING **6**
- 5.1 Page Layout view and commands . . . 6
- 5.2 Page Break Preview and print setup options . . . 6

6 CHARTS **7**
- 6.1 Creating Charts . . . 7
- 6.2 Exploring Chart types . . . 8
- 6.3 Working with Excel Ideas . . . 10

7 ADJUSTING WORKSHEET VIEWS **10**
- 7.1 Freezing and Unfreezing panes . . . 10
- 7.2 Splitting screens horizontally and vertically . . . 10

8 MULTIPLE WORKSHEETS AND WORKBOOKS **11**
- 8.1 Renaming, Inserting and Deleting sheets . . . 11
- 8.2 Moving, copying and grouping sheets . . . 11

9 DATA MANAGEMENT FEATURES **12**
- 9.1 Sorting Data . . . 12
- 9.2 Using filters . . . 13
- 9.3 Creating PivotTables . . . 13
- 9.4 New Data Types coming to Excel for 365 . . . 15

10 SHARING WORKBOOKS **16**
10.1 Protecting worksheets and workbooks 16
10.2 Sharing workbooks 17
10.3 Tracking Changes 17

1 ENTERING DATA

1.1 Exploring Data entry, Editing, and AutoFill

- To completely replace contents of a single cell, click once, and simply begin typing.
- To edit contents of a single cell, either double click on the cell or click once and edit using the formula bar.
- Numerical entries always align to the right.

  TIP : Use tab to move to the next (to the right) cell.

- Autofill for months:
  Type any month (all or first three letters), point to the bottom right corner (called the fill handle, white + cursor now becomes thinner and black), and drag across other cells. This autofills the other months. You do not have to start with JAN, can start with any month. Dragging upward or to the left, fills month backwards.

  NOTE : This also works with the days of the week and for "quarters". Start with Q1 or Qtr 1 or Quarter 1. Autofill goes up till Q4 before resetting to Q1.

1.2 Working with Dates and Times

- You can type dates using a slash / or dash - . Excel evaluates these as dates and aligns them to the right. If a value you perceived to be a date is to the left - its not a date, something is wrong!

  Beyond : Dates are actually stored as numerical values with Jan 1, 1900 as starting reference : Similar to Julian day. Can be useful for performing calculations on dates.

- Example of calculations on date.
  Cell B2 has 8/10/2018. Performing =B2+100 gives 100 days after 8/10/2018
- Use colons : for time.
- specify a or p after numerical value for AM and PM.
- More operations on Date and Time can be found in Formulas — Date & Time.

1.3 Undo & Redo

- Undo can remember upto 100 of your last steps.
- Remember: Deleting sheets or renaming sheets are actions that cannot be undone!

TIP: Keep saving your workbook periodically to avoid loss of data!

2 FORMULAS AND FUNCTIONS

2.1 Using Simple Formulas

- All formulas in Excel begin with the equal sign.
- Instead of using numerical values use addresses of cells. Ex : =B2 - B3. Note : You can use the arrow keys to get to the cell you want to use in the formula.
- The formula bar contains the formula if any was used, otherwise the literal value.
- The SUM function. Use : =SUM(B2:G2). All values between cells B2 and G2 are added to give the sum.
- Changing values in cells automatically adjusts any formula calculations which used that cell.

2.2 Copying a formula into adjacent cells

- Formulas get adjusted relatively. B2 - B1 copied to column C becomes C2 - C1.
- Drag the fill handle (Bottom right corner) on the cell to copy the same formula to other columns / rows.

2.3 Using SUM and AVERAGE

- Better way to calculate sum : Home —- Editing —- AutoSum. Double Click on the cell where you want the sum. Excel automatically looks for data to the left / top etc and calculates the sum
  TIP : Keyboard shortcut for AutoSum is alt + equals(=)
- Multiple sums (of either rows/columns) can be performed together using AutoSum.
- Note : The AutoSum function always looks up and then left.

- AVERAGE : The AutoSum feature has a drop down menu in the Formulas tab, Average is one of the functions present in this menu.

  TIP : Never type in "=SUM(..)" in a cell. By simply pressing alt + = on the selected cell, Excel will automatically fill this in for you. This shortcut makes entering data much faster.

2.4 XLOOKUP and lookup functions

- Used to pull together related functions.
- Example : =xlookup(G2, C:C, A:A) Tries to find the value in cell G2 in column C , and returns corresponding information from Column A.

3 FORMATTING

- The Native font is Calibri. Font size is 11.
- To make some columns have the same width : Highlight them and double click one of the column boundaries.
- Note: Simply clicking on the boundary of a single column sets the width to the "best fit".
- If you make the column too narrow (not enough to fit data), data will be replaced by hashtags #.
- To change the width/height of multiple columns/rows , highlight required ones and drag any one boundary to the required dimension.

4 ADJUSTING WORKSHEET LAYOUT AND DATA

4.1 Rows and columns: Insert, delete, hide, and unhide

- NOTE : "Inserting a new column" and "shifting cells" are two different functions. When you insert a new column, all cells in the row get shifted down, using the shifting function allows you to shift specific cells.
- TIP : Be extremely careful when you delete rows/columns!! Best way is to highlight the cells that need to be deleted and right clicking to delete.
- Hide / Unhide : Useful when you need to print all columns/rows except for some (Example : SIN number). Right click column/row name to hide and unhide.
- TIP: Always lookout for hidden rows and columns.

4.2 Moving copying and Inserting Data

- Excel allows you to drag data by highlighting cells and simply dragging.
- Cntrl + Dragging copies data.
- Shift + dragging to move and insert data. Makes life easier as you don't need to insert a new column first to copy data.

4.3 Finding and replacing data

- TIP : While searching for data, always try to narrow down your scope of search (by highlighting cells) for best results.
- Customize your search with "Match Case" and "Match entire cell contents" accessed from "options" in the Find & select menu.

5 PRINTING

5.1 Page Layout view and commands

- To print specific data, highlight required cells - go to the Page Layout tab - Print Area - Set Print Area. The shortcut for this is cntrl + P.
- To customize what will be printed, select the page layout option found at the bottom right of the screen. This will take you into design mode. Here you can chose not to print the name of the file or print the date/time and so on.
- To display headers for columns on each page : Go to the page layout tab - Print titles - Go to the "Rows to repeat at top" and Select row 1 from the actual worksheet.

5.2 Page Break Preview and print setup options

- Select the Page Break preview option from the status bar (bottom right corner of sheet) to view how excel will divide your sheet into pages.
- Note : The solid blue line at the far right in the Page Break preview indicates the end of what will be printed. To customize this, simply drag the blue line where you want. You can also drag the dotted line if required : probably to fit everything on one page.
- Sometimes, you may need to change settings such as Margins, Header/Footer found in the "Page Setup". You can scale the pages to fit data on the page appropriately. You can also remove the gridlines if required.

TIP : Do not be afraid to jump between the sheet and print preview to see how exactly your data is being printed.

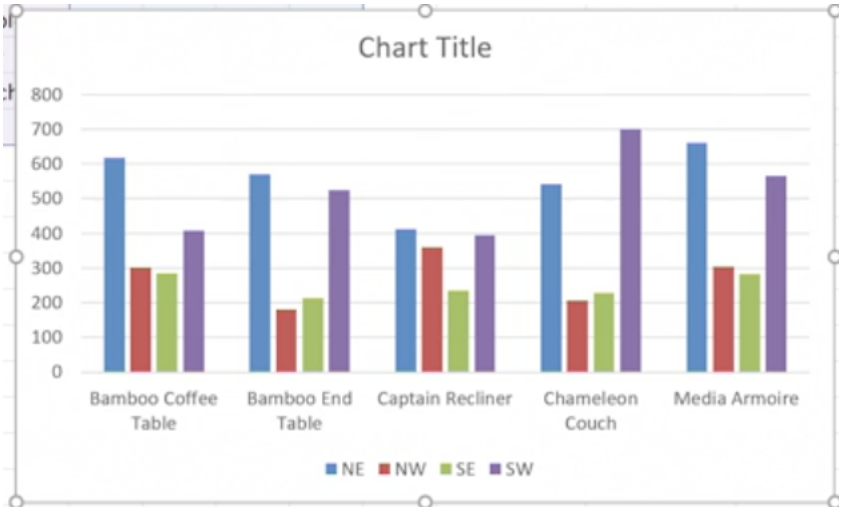
6 CHARTS

6.1 Creating Charts

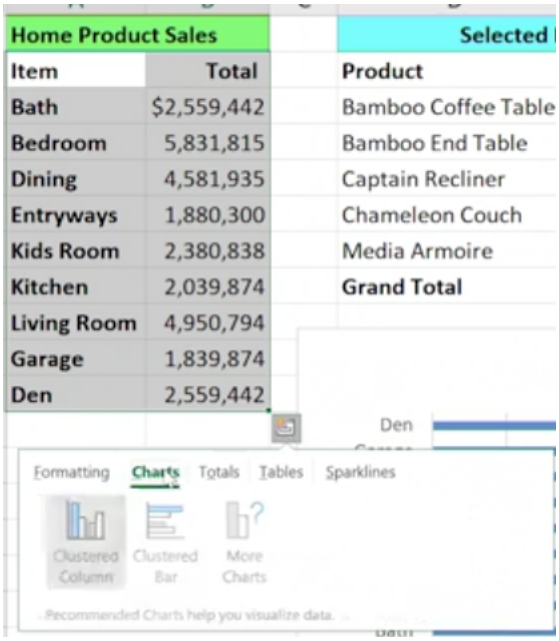
- TIP: Highlight the data you want to represent as a chart. Leave out the total columns as these may cause problems. Always include the data at the top of the columns and to the left of the rows.

D	E	F	G	H	I
Selected Furniture Sales by Region					
Product	NE	NW	SE	SW	Total
Bamboo Coffee Table	619	302	284	407	1,612
Bamboo End Table	570	180	214	524	1,488
Captain Recliner	413	361	234	395	1,403
Chameleon Couch	543	207	229	700	1,679
Media Armoire	662	304	282	567	1,815
Grand Total	2,807	1,354	1,243	2,593	997

- Alt + F1 is the keystroke shortcut to create a clustered column chart.



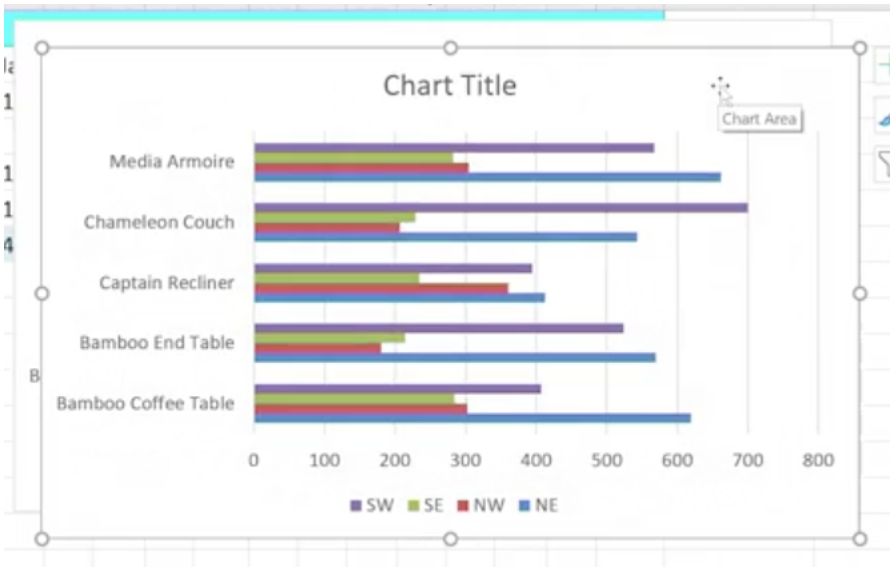
- To resize the chart while maintaining the same ratio of height to width : while holding the SHIFT key, drag upper-left corner to the required size.
- Similarly, an Alt + drag causes the boundaries of the chart to match up with the cell boundaries in the background.
- To create a chart on a new sheet : Use the key F11.
- A more standardized method to create charts is by going to Insert – Recommended Charts.
- Also, when you highlight data with numbers, a quick analysis button pops up at the bottom right which can also be used to create charts.

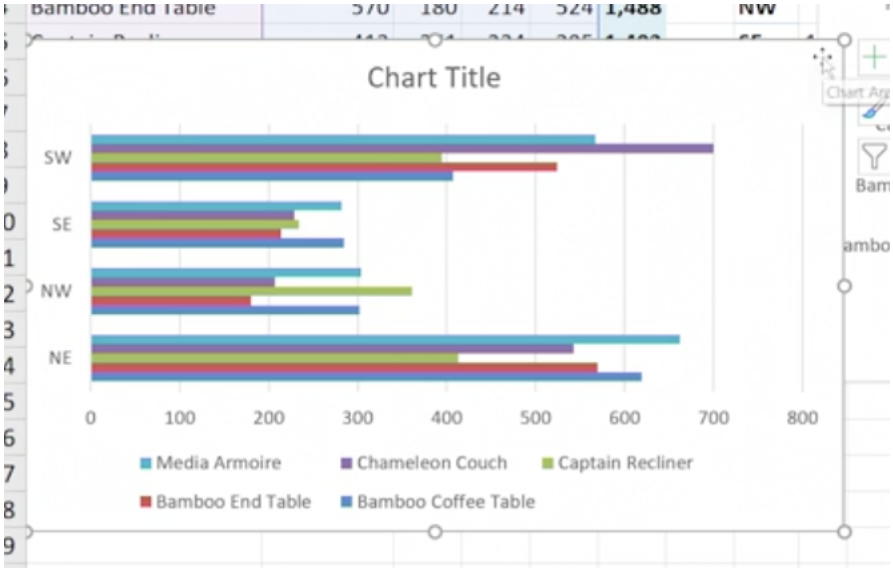


- Remember : The chart is always in-sync with the data! When data changes, so does the chart.

6.2 Exploring Chart types

- Under the Design tab in ChartTools : choose the "Switch Row/Columns" option to switch what is represented on the axes of the chart.





- To duplicate a chart use the shortcut Cntrl + D
- If you are dealing with timeframes (ex. Months) use a Line Chart to represent data.

- You can change the meaning of a chart by changing the size. Example : The trend may look more incremental.

6.3 Working with Excel Ideas

- Ideas is located in the far right of the home tab. Mostly charts and pivot charts are suggested. The aim of this option is to give "ideas" on how me may analyze our data.
- NOTE : Not all suggestions will be perfect, so be mindful of that!

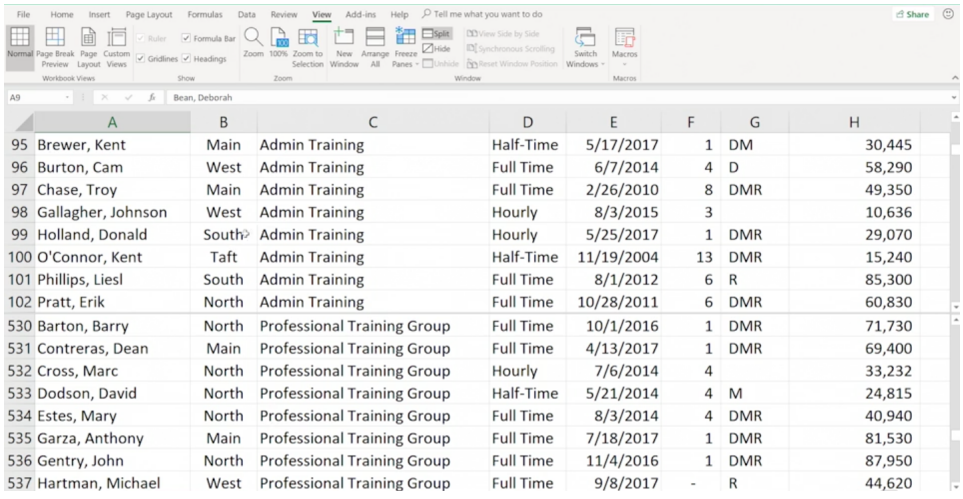
7 ADJUSTING WORKSHEET VIEWS

7.1 Freezing and Unfreezing panes

- You can freeze certain rows/columns by going to the tab View – Freeze Panes.
- Note : This feature has nothing to do with Printing.
- useful when you need to freeze first row or/and column, to have context of your data as you scroll through the worksheet,
- Note : This feature does not work with undo-redo.
- TIP : To freeze both the first row and column : Click on cell B2 and select the freeze panes option. Everything one row above and to the left gets frozen.

7.2 Splitting screens horizontally and vertically

- Using the split function found in the VIEW tab : we can split the sheet vertically or horizontally to simultaneously scroll through two parts of the sheet.



	A	B	C	D	E	F	G	H
95	Brewer, Kent	Main	Admin Training	Half-Time	5/17/2017	1	DM	30,445
96	Burton, Cam	West	Admin Training	Full Time	6/7/2014	4	D	58,290
97	Chase, Troy	Main	Admin Training	Full Time	2/26/2010	8	DMR	49,350
98	Gallagher, Johnson	West	Admin Training	Hourly	8/3/2015	3		10,636
99	Holland, Donald	South	Admin Training	Hourly	5/25/2017	1	DMR	29,070
100	O'Connor, Kent	Taft	Admin Training	Half-Time	11/19/2004	13	DMR	15,240
101	Phillips, Liesl	South	Admin Training	Full Time	8/1/2012	6	R	85,300
102	Pratt, Erik	North	Admin Training	Full Time	10/28/2011	6	DMR	60,830
530	Barton, Barry	North	Professional Training Group	Full Time	10/1/2016	1	DMR	71,730
531	Contreras, Dean	Main	Professional Training Group	Full Time	4/13/2017	1	DMR	69,400
532	Cross, Marc	North	Professional Training Group	Hourly	7/6/2014	4		33,232
533	Dodson, David	North	Professional Training Group	Half-Time	5/21/2014	4	M	24,815
534	Estes, Mary	North	Professional Training Group	Full Time	8/3/2014	4	DMR	40,940
535	Garza, Anthony	Main	Professional Training Group	Full Time	7/18/2017	1	DMR	81,530
536	Gentry, John	North	Professional Training Group	Full Time	11/4/2016	1	DMR	87,950
537	Hartman, Michael	West	Professional Training Group	Full Time	9/8/2017	-	R	44,620

- To split vertically : Click on the column letter from which you want the split to occur.
- To exit the split preview : double click on the split line or click on the split feature again.
- If you click on a cell that is not at the edge of the sheet, Excel gives you a four-way split starting from the selected cell. You are likely to not use this as it is quite confusing.

8 MULTIPLE WORKSHEETS AND WORKBOOKS

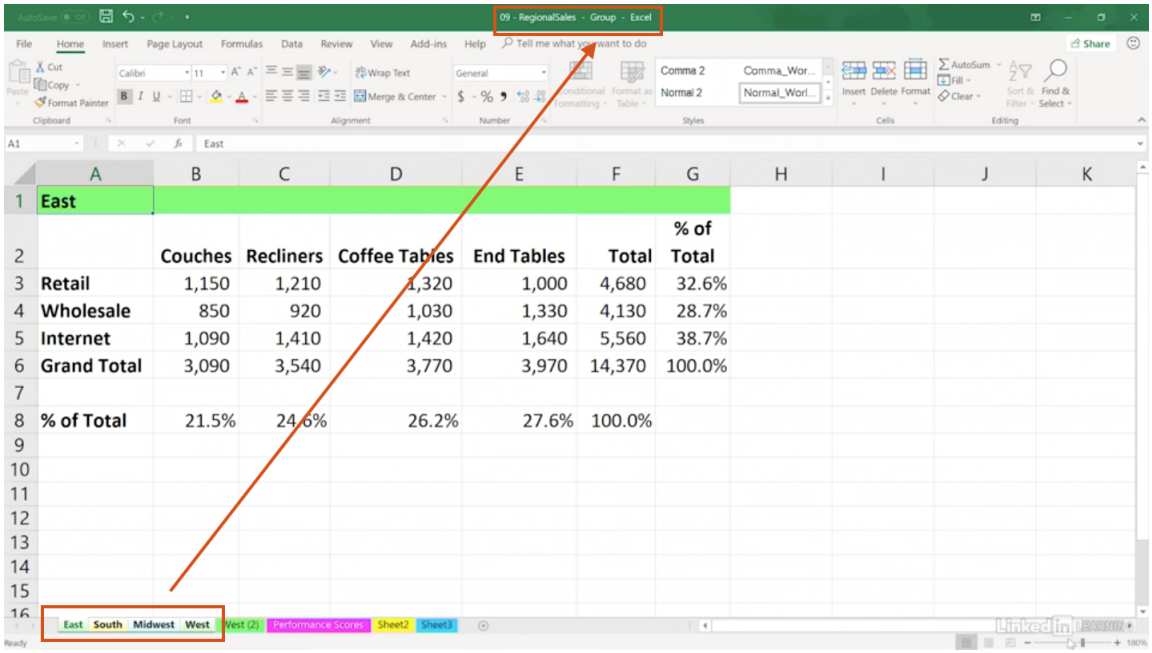
8.1 Renaming, Inserting and Deleting sheets

- Double click a sheet on the sheet tab to rename it.
- Keyboard shortcut for a new sheet : shift + F11.
- REMEMBER : Once a sheet is deleted this action cannot be undone.
- To hide a sheet : Right click a sheet tab and choose the hide option. To unhide : right click on any sheet tab and choose the unhide option.
- You can only unhide one sheet at a time.

8.2 Moving, copying and grouping sheets

- To reorder sheets, simply drag them to required position in the sheet tabs.
- To make a copy of the sheet : cntrl + drag
- To move/copy a sheet to a new workbook : right click required sheet and choose the Move or Copy option.
- Tip : If you want to make changes to multiple sheets, you can group them.
- To group sheets that are adjacent : Click on the first sheet you want in your group, hold down the shift key and drag across the sheets you want to group. For non-adjacent sheets : hold the cntrl key and click the sheets you want to group.
- Any change you make to one sheet will now be reflected on all the grouped sheets.

- To confirm that you are working with grouped sheets, look at the name of the workbook – 'Group' should appear next to it.



- BE CAREFUL! In the group mode, making changes to one cell in one sheet will change the value of that same cell in all the grouped sheets. This may or not may be your intention so always keep an eye out for it.

- To ungroup: either right click on a sheet in the group and choose the ungroup option, or simply click on a sheet that is not in the group.

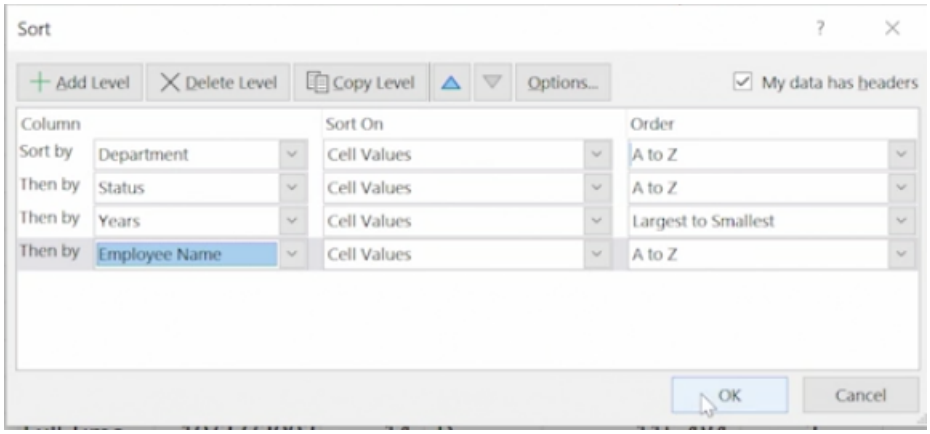
9 DATA MANAGEMENT FEATURES

9.1 Sorting Data

- Always make sure to separate the data you want to sort with a delineated empty column on the right. Then, you can either highlight the data or simply click within the data before you start using the sort commands.

- To double check the data being sorted ,click within the data and press Cntrl + A (A for all), then press cntrl + . (period) a few times to view the corners of the data.

- To sort – go to the Data tab – and click on the sort function. Make sure to check the "My Data has headers" box if required.
- You may need to add levels to your sorting. Think if it as sorting within sorting.



- Note : The quick sort buttons remember the previous sort order when they override it. This also maintains levels of sorting like the above function. You may use the quick sort buttons in succession to get these levels.

9.2 Using filters

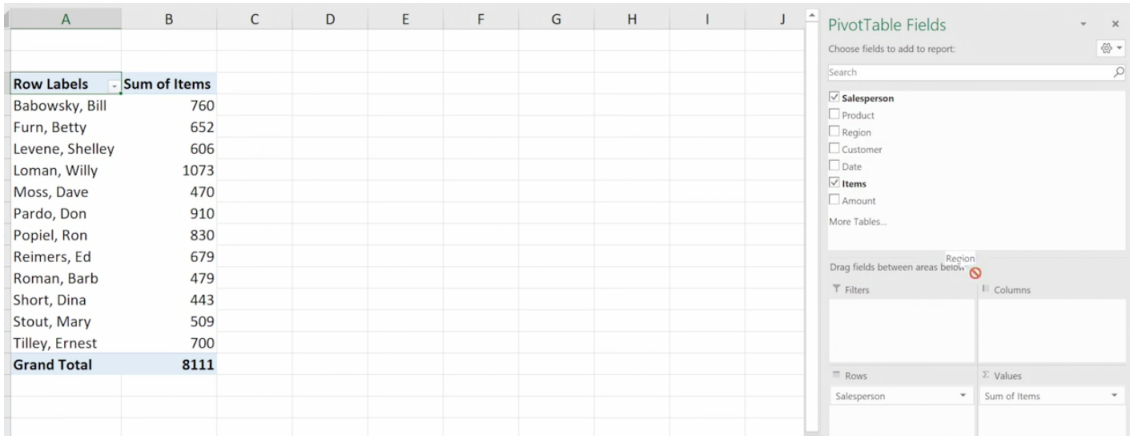
- TIP: Before using the filter option, make sure your data has no empty columns or rows within it.
- Once you click within the required data and choose "Filter" from the data tab, drop down menus appear next to each column name.
- Note: Filter does not only check for equality and can also filter based on other logical operations such as "Greater than" etc.
- Filtering for date values has many useful options such as "Tomorrow", "Next Week", "This Year", "May" etc.

9.3 Creating PivotTables

- TIP: Make sure your data has no empty columns or rows within it.
- Pivot table is useful for making quick calculations without using formulas. Create pivot tables by going to the Insert tab and click "PivotTable".

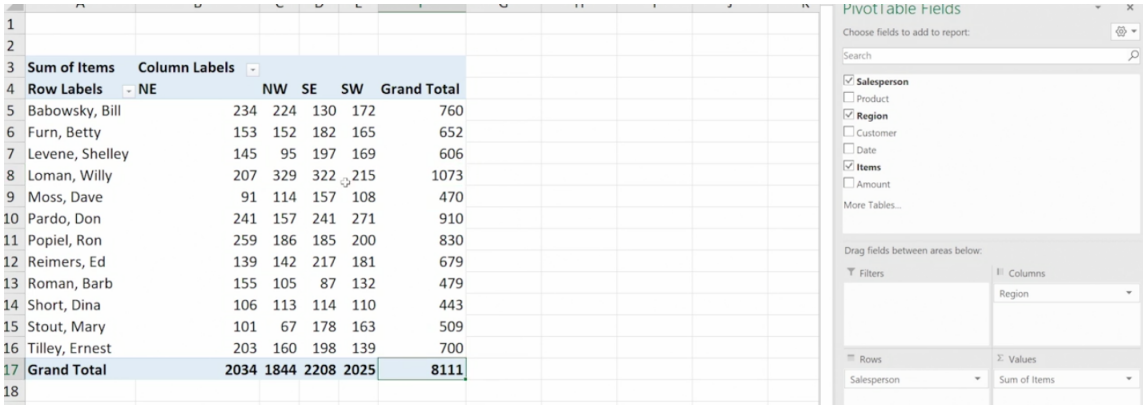
- Some examples of using pivotTables.

  Simply selecting some columns to show.



Row Labels	Sum of Items
Babowsky, Bill	760
Furn, Betty	652
Levene, Shelley	606
Loman, Willy	1073
Moss, Dave	470
Pardo, Don	910
Popiel, Ron	830
Reimers, Ed	679
Roman, Barb	479
Short, Dina	443
Stout, Mary	509
Tilley, Ernest	700
Grand Total	**8111**

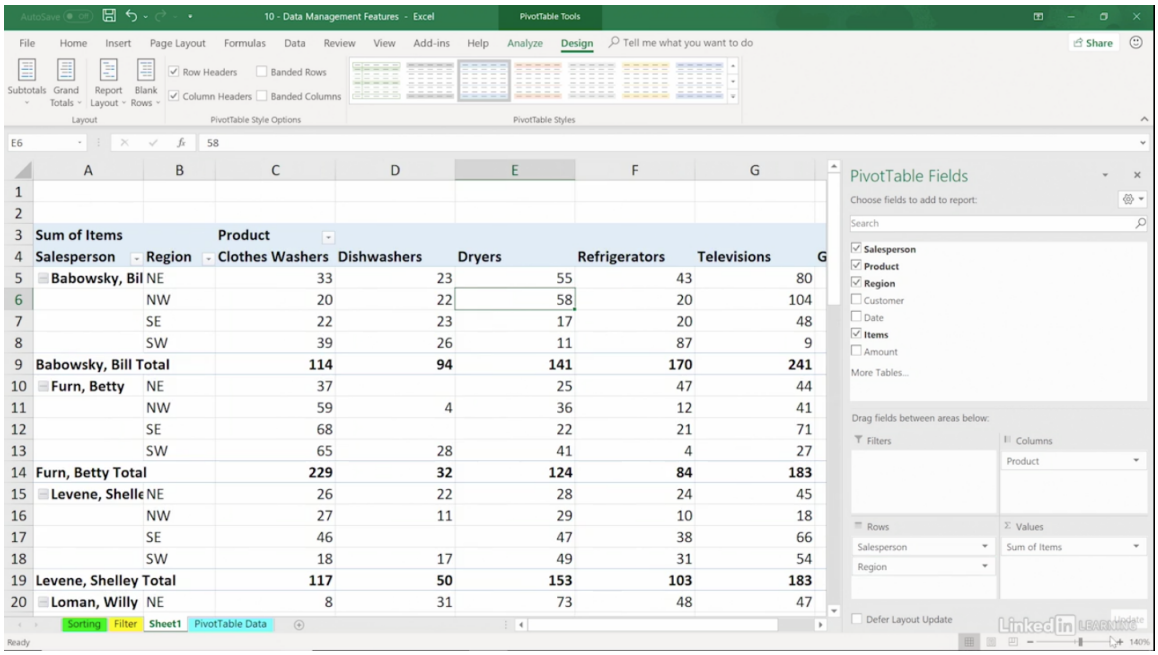
  Filtering based on region



Sum of Items	Column Labels				
Row Labels	NE	NW	SE	SW	Grand Total
Babowsky, Bill	234	224	130	172	760
Furn, Betty	153	152	182	165	652
Levene, Shelley	145	95	197	169	606
Loman, Willy	207	329	322	215	1073
Moss, Dave	91	114	157	108	470
Pardo, Don	241	157	241	271	910
Popiel, Ron	259	186	185	200	830
Reimers, Ed	139	142	217	181	679
Roman, Barb	155	105	87	132	479
Short, Dina	106	113	114	110	443
Stout, Mary	101	67	178	163	509
Tilley, Ernest	203	160	198	139	700
Grand Total	**2034**	**1844**	**2208**	**2025**	**8111**

- In the pivotTable mode : go to the Design Tab – Report Layout – outline form to show the actual column field names in your table.

Filtering with Region and Product.



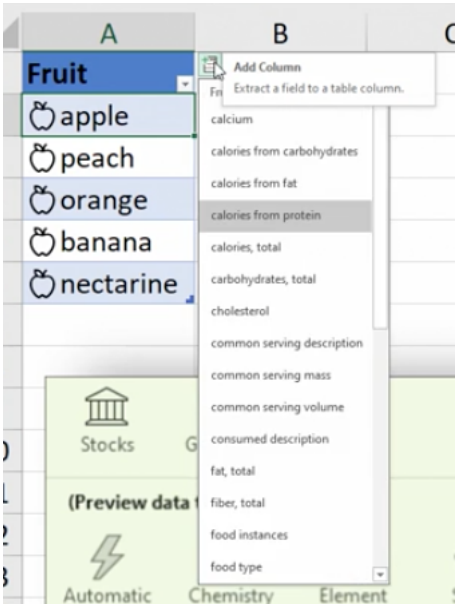
Sum of Items		Product					
Salesperson	Region	Clothes Washers	Dishwashers	Dryers	Refrigerators	Televisions	G
Babowsky, Bil	NE	33	23	55	43	80	
	NW	20	22	58	20	104	
	SE	22	23	17	20	48	
	SW	39	26	11	87	9	
Babowsky, Bill Total		**114**	**94**	**141**	**170**	**241**	
Furn, Betty	NE	37		25	47	44	
	NW	59	4	36	12	41	
	SE	68		22	21	71	
	SW	65	28	41	4	27	
Furn, Betty Total		**229**	**32**	**124**	**84**	**183**	
Levene, Shelle	NE	26	22	28	24	45	
	NW	27	11	29	10	18	
	SE	46		47	38	66	
	SW	18	17	49	31	54	
Levene, Shelley Total		**117**	**50**	**153**	**103**	**183**	
Loman, Willy	NE	8	31	73	48	47	

- NOTE: Making changes to the source data does not adjust the pivot table automatically. You either need to use the "Refresh" option under the Analyze tab or use the keystroke shortcut alt + F5. You should periodically refresh your pivot tables.

9.4 New Data Types coming to Excel for 365

- The idea of this feature is to pull information from external sources (e.g. The internet) in real time.
- NOTE: It may be advantageous to convert lists into a table to be able to perform additional operations on it.
- To transform a list into a table, select the required cells and use the keystroke shortcut Cntrl + T.
- Highlight your table, and click on the data type you want. Example : Food. From here you can get information such as "Calories per serving" etc .

- Add new columns with required info by clicking on the column icon that appears next to column names.



- You can also create your own data types!
- Useful when you need to display some data and not all. Highlight your table data, go to the Data Tab and choose the "From Table Range" option on the far left of the screen. Then click the Create Data Type option on the far right of the screen.

10 SHARING WORKBOOKS

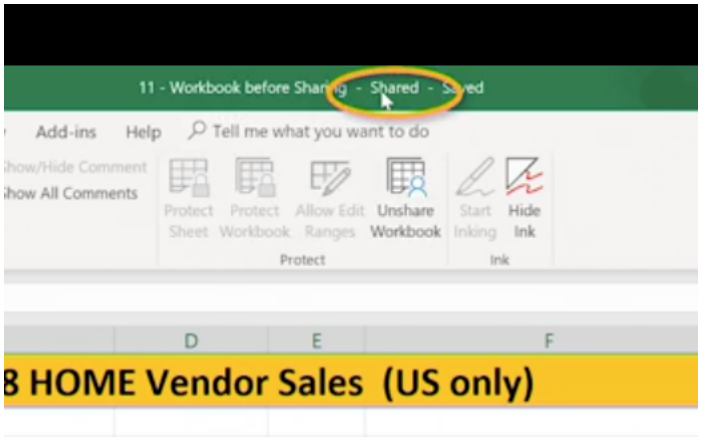
10.1 Protecting worksheets and workbooks

- You can protect workbooks and worksheet. These commands are under the Review tab.
- Once a workbook is protected, you cannot insert , move or delete a sheet. Essentially, most functions that appear on right clicking the sheet get inhibited.
- Remember : Click the upper left corner selects the entire worksheet.
- Under the format cells option – Protection – You will notice that all cells are "Locked". If the box next to it is black, this means that some cells are locked while the others are not.

- Unlock all cells (in the "format cells" option) before you start locking only certain cells. Locking cells only has a meaning when you Protect your sheet.

10.2 Sharing workbooks

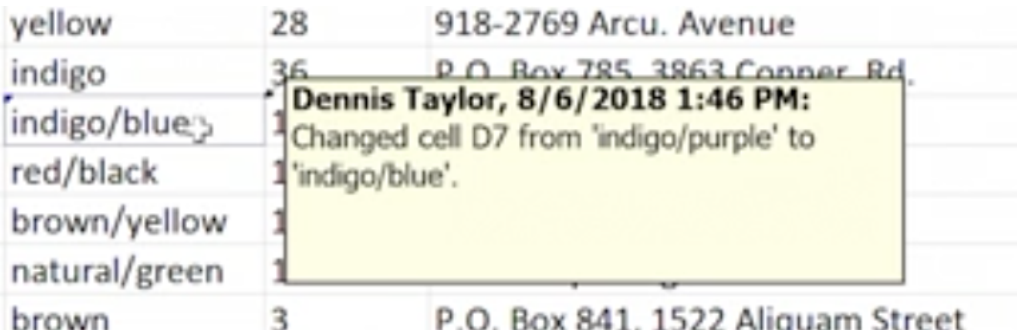
- To use the old "Share Workbook" feature, you will manually need to add it to the quick access toolbar – Customize – Commands not in the ribbon. The new feature is called co-authoring.
- Once a workbook has been shared, Excel indicates so by displaying "Shared" next to the workbook name.



- TIP : Sharing a file also helps you keep track of changes made to it.

10.3 Tracking Changes

- To use the Track Changes feature, resurrect it on to the quick access toolbar in the same way as for the "Share Workbook" feature.
- Making changes to a tracked file changes the appearance of cells and also adds a note about the change that is displayed when you hover over the changed cell.



- You can list the changes made to the workbook on a new sheet.
- Remember : You can also track changes even if you're the only one with access to the worbook.
- You can accept / reject changes made to the workbook.