Excel Intermediate

Sorting

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 Department column of our range of data (do not highlight the column). Then click on the Sort & Filter drop-down menu in the Home ribbon and click on Sort A to Z to arrange the departments alphabetically, or Sort Z to A for reverse alphabetical order



A column containing numbers will be sorted smallest to largest and largest to smallest when choosing Sort A to Z and Sort Z to A, respectively.

Custom Sorting by Level

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

- Click anywhere inside our range of data
- Click on the Custom Sort button in the Sort & Filter drop-down menu. This will open the Sort dialog box
- Choose **Department** as your first sort level
- Click on Add Level at the top left of the dialog box and select **Category**
- Click on OK

Sort	-	-		-	? <mark>×</mark>
* <u>A</u> ↓ <u>A</u> ¢	d Level 🔀 <u>D</u> elete Level	E Copy Level	Dption	s	✓ My data has <u>h</u> eaders
Colum	n	Sort On		Order	
Sort by	Department 👻	Values	•	A to Z	•
Then b	Category 👻	Values		A to Z	
i .					
					OK Cancel

Your resulting table should look like this:

Department	Category	Oct	Nov	Dec
Bakery	Breads	\$30,000	\$15,000	\$20,000
Bakery	Desserts	\$25,000	\$80,000	\$120,000
Deli	Salads	\$90,000	\$35,000	\$25,000
Deli	Sandwiches	\$80,000	\$40,000	\$20,000
Meat	Beef	\$90,000	\$110,000	\$120,000
Meat	Chicken	\$75,000	\$82,000	\$2,000,000
Produce	Fruit	\$10,000	\$30,000	\$40,000
Produce	Veggies	\$30,000	\$80,000	\$30,000

Filtering

Excel allows you to filter data easily. Click inside our data and then select the Filter button from the Sort & Filter drop-down menu. When you do this filter arrows should appear beside your column headers.

Department	🔽 Category 📘	Oct 🔽	Nov 🔽	Dec 🗾 💌
Bakery	Breads	\$30,000	\$15,000	\$20,000
Bakery	Desserts	\$25,000	\$80,000	\$120,000
Deli	Salads	\$90,000	\$35,000	\$25,000
Deli	Sandwiches	\$80,000	\$40,000	\$20,000
Meat	Beef	\$90,000	\$110,000	\$120,000
Meat	Chicken	\$75,000	\$82,000	\$2,000,000
Produce	Fruit	\$10,000	\$30,000	\$40,000
Produce	Veggies	\$30,000	\$80,000	\$30,000

Click the Department filter, uncheck one or more categories, and then click OK to look at only the data from your remaining categories.

Department	T Category	▼ Oct ▼	Nov 💌	Dec 🗾 💌
Bakery	Breads	\$30,000	\$15,000	\$20,000
Bakery	Desserts	\$25,000	\$80,000	\$120,000
Produce	Fruit	\$10,000	\$30,000	\$40,000
Produce	Veggies	\$30,000	\$80,000	\$30,000

Click the Department filter again and click Clear Filter to bring the removed categories back.

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: Ă↑	S <u>o</u> rt Z to A	ľ
	Sor <u>t</u> by Color ►	ľ
x	Clear Filter From "Department"	
	F <u>i</u> lter by Color ►	1
n	Text <u>F</u> ilters ▶	
	Search 🔎	4
~	(Select All)	1
	✓ Bakery □ Deli	
	Meat	10
2	····· 🗹 Produce	1
		t
1		ľ
1		
-	OK Cancel	
		:

You can also filter dates, and filter numbers by removing numbers above or below a certain threshold. Click the Hotel filter and select Number Filters > Above Average. Excel will calculate the average hotel bill and only show those that cost more than this average.

se dai s 2↓ s ∡↓ s s ★	te Employee Food Sort Smallest to Largest Sort Largest to Smallest Sort by Color Clear Filter From "Hotel"	▼ Hotel ▼	
	Number <u>F</u> ilters	•	<u>E</u> quals
	Search	٩	Does <u>N</u> ot Equal <u>G</u> reater Than
			Greater Than <u>O</u> r Equal To
	 \$3,085 \$3,820		Less Than Or Egual To
			Bet <u>w</u> een <u>T</u> op 10
			<u>A</u> bove Average
			Bel <u>o</u> w Average
	OK	Cancel .:	Custom <u>F</u> ilter

Tables

Tables are a great way to organize your data. To create a table, select any cell within your data set, select the Insert ribbon, and then click on "Table."

Department 💌	Category 🔽 C	Oct 🔄 🔽 N	ov 🔽 D	ec 🔽
Produce	Veggies	30000	80000	30000
Produce	Fruit	10000	30000	40000
Bakery	Breads	30000	15000	20000
Bakery	Desserts	25000	80000	120000
Deli	Sandwich	80000	40000	20000
Deli	Salads	90000	35000	25000
Meat	Beef	90000	110000	200000
Meat	Chicken	75000	82000	15000

See the little blue marker in the bottom right corner? Resize your table by clicking that corner and dragging the marker down and/or to the right to add rows and columns. Typing in an adjacent row or column will also extend your table.

Once you have a table, if you create a formula in one cell, Excel will automatically copy that formula to the rest of the column for you.

Department	Category 🔽	Oct 🛛 🔽	Nov 💌	Dec 🗾 💌	Total 🔄			
Produce	Veggies	\$30,000	\$80,000	\$30,000				
Produce	Fruit	\$10,000	\$30,000	\$40,000	=SUM(Cal	ulatedColu	imns[@[Oct]:[De
Bakery	Breads	\$30,000	\$15,000	\$20,000	SUM(nun	ber1, [numb	ber2],)	
Bakery	Desserts	\$25,000	\$80,000	\$120,000				
Deli	Sandwiches	\$80,000	\$40,000	\$20,000				
Deli	Salads	\$90,000	\$35,000	\$25,000				
Meat	Beef	\$90,000	\$110,000	\$200,000				
Meat	Chicken	\$75,000	\$82,000	\$150,000				
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Department	Category 🔻	Oct 🔽	Nov	Dec 🔻	Total 🔻]		
Department Produce	Category ▼ Veggies	Oct \$30,000	Nov ¥ \$80,000	Dec ▼ \$30,000	Total \$140,000]		
Department Produce Produce	Category Veggies	Oct \$30,000 \$10,000	Nov \$80,000 \$30,000	Dec ▼ \$30,000 \$40,000	Total \$140,000 \$80,000			
Department Produce Produce Bakery	Category Veggies Fruit Breads	Oct \$30,000 \$10,000 \$30,000	Nov \$80,000 \$30,000 \$15,000	Dec ▼ \$30,000 \$40,000 \$20,000	Total \$140,000 \$80,000 \$65,000			
Department Produce Produce Bakery Bakery	Category Veggies Fruit Breads Desserts	Oct \$30,000 \$10,000 \$30,000 \$25,000	Nov \$80,000 \$30,000 \$15,000 \$80,000	Dec ▼ \$30,000 \$40,000 \$20,000 \$120,000	Total \$140,000 \$80,000 \$65,000 \$225,000			
Department Produce Produce Bakery Bakery Deli	Category Veggies Fruit Breads Desserts Sandwiches	Oct \$30,000 \$10,000 \$30,000 \$25,000 \$80,000	Nov \$80,000 \$30,000 \$15,000 \$80,000 \$40,000	Dec ▼ \$30,000 \$40,000 \$20,000 \$120,000 \$20,000	Total \$140,000 \$80,000 \$65,000 \$225,000 \$140,000	7		
Department Produce Produce Bakery Bakery Deli Deli	 Category Veggies Fruit Breads Desserts Sandwiches Salads 	Oct \$30,000 \$10,000 \$30,000 \$25,000 \$80,000 \$90,000	Nov \$80,000 \$30,000 \$15,000 \$80,000 \$40,000 \$35,000	Dec ▼ \$30,000 \$40,000 \$20,000 \$120,000 \$20,000 \$25,000	Total \$140,000 \$80,000 \$65,000 \$225,000 \$140,000 \$150,000]]]		
Department Produce Produce Bakery Bakery Deli Deli Meat	Category Veggies Fruit Breads Desserts Sandwiches Salads Beef	Oct \$30,000 \$10,000 \$30,000 \$25,000 \$80,000 \$90,000	Nov \$80,000 \$30,000 \$15,000 \$80,000 \$40,000 \$35,000 \$110,000	Dec ▼ \$30,000 \$40,000 \$20,000 \$120,000 \$20,000 \$25,000	Total \$140,000 \$80,000 \$65,000 \$225,000 \$140,000 \$150,000 \$400,000	2		

Another thing you can do with tables that involve numbers is easily add a Total row. When you click somewhere within a table, a Design ribbon appears to the right of the View ribbon. Click on this ribbon and check the Total Row box. You can change the value in your Total row from a sum to an average or another mathematical function.

Department 💌	Category 🔽	Sales 🔽
Produce	Veggies	\$1,000
Produce	Fruit	\$2,000
Bakery	Breads	\$3,000
Bakery	Desserts	\$1,000
Deli	Sandwiches	\$2,000
Deli	Salads	\$3,000
Meat	Beef	\$4,000
Meat	Chicken	\$8,000
Total		\$24,000

Drop-down Lists

Drop-down lists are useful when you want certain cells to only have a limited number of valid entries.

To create a drop-down list, select the cells you want to affect, select the Data ribbon, and click Data Validation.

Data Validation Settings Input Message Et	ror Alert	dation v
Validation criteria		
Allow:	D	E
List	☑ Ignore <u>b</u> lank	
Any value Whole number Decimal	✓ In-cell dropdown	
Date		
Text length Custom	tment	Ø
Apply these changes to all o	ther cells with the same settings	
<u>C</u> lear All	OK Cancel	

Select "List" from the Allow drop-down menu, and in the Source box enter the terms you want to be available as choices, separated by commas. For example, typing "Produce, Meat, Bakery" in the Source box will set "Produce," "Meat," and "Bakery" as the available options.

List	▼ Ignore <u>b</u> lank	
Data:	In-cell dropdown	
between	T	
Source:		
Produce, Meat, Bake	ery 📧	

After this, the cells you changed will be restricted to those three choices.

Conditional Formatting

Excel allows you to analyze data easily. When you select a block of cells with numerical data, the Quick Analysis button will appear near the bottom right corner of your selection. Click on this button to bring up options for displaying graphical representations of your data.

Category 💌	Oct	- Nou	- Doc				
Veggies	\$30,	Formatting	Charts	Totals	Tables	Sparklir	nes
Fruit	\$10,						
Breads	\$30,					^	
Desserts	\$25,					~ %	H
Sandwich	\$80,	Data Bars	Color	Icon Set	Greater	Top 10%	Clear
Salads	\$90,						
Beef	\$90,	Conditional	Formatting	uses rules t	o hiahliaht	interesting d	lata
Chicken	\$75,	Contactional	,	uses rules e		interesting e	iaca.
GOOD When yo	TO KNO	DW cells, this but	ton appea	ırs:	È.		

It's called the **Quick Analysis** button. Aptly named, don't you think? If you ever have a question about the data, click this button

For example, clicking on the Data Bars button will add colored bars to your cells that show which values are large or small relative to one another. This is known as conditional formatting.

Department	Category 💌	0	ct	Ŧ	No	v	Ŧ	Dec	;	-
Produce	Veggies		\$30,00	00		\$80,00	00		\$30,0	00
Produce	Fruit		\$10,00	0		\$30,00	00		\$40,0	00
Bakery	Breads		\$30,00	00		\$15,00	00		\$20,0	00
Bakery	Desserts		\$25,00	00		\$80,00	00		\$120,0	00
Deli	Sandwich		\$80,00	00		\$40,00	00		\$20,0	00
Deli	Salads		\$90,00	0		\$35,00	00		\$25,0	00
Meat	Beef		\$90,00	00		\$110,00	00		\$200,0	00
Meat	Chicken		\$75,00	00		\$82,00	00		\$150,0	00

If you decide you want to remove these bars, select them again and click Quick Analysis followed by Clear.

Conditional formatting can be used with text data to highlight duplicates or unique strings. To use this feature, select a block of cells containing text and click Quick Analysis followed by Duplicate or Unique.

Department	Category	Oct 🔹	Nov	Dec 🗾
Produce	Veggies	\$30,000	\$80,000	\$30,000
Produce	Fruit	\$10,000	\$30,000	\$40,000
Bakery	Breads	\$30,000	\$15,000	\$20,000
Bakery	Desserts	\$25,000	\$80,000	\$120,000
Deli	Sandwich	\$80,000	\$40,000	\$20,000
Deli	Salads	\$90,000	\$35,000	\$25,000
Meat	Beef	\$90,000	\$110,000	\$200,000
Meat	Chicken	\$75,000	\$82,000	\$150,000
Meat	Chicken	\$75,000	\$82,000	\$150,000

To remove unwanted duplicate entries, select your data and use the Remove Duplicates tool on the Data ribbon. When you do this, be careful to select the exact categories you wish to remove duplicates from!



Department 💌	Category 🔽	Oct 🗾	Nov	Dec 🔽
Produce	Veggies	\$30,000	\$80,000	\$30,000
Produce	Fruit	\$10,000	\$30,000	\$40,000
Bakery	Breads	\$30,000	\$15,000	\$20,000
Bakery	Desserts	\$25,000	\$80,000	\$120,000
Deli	Sandwich	\$80,000	\$40,000	\$20,000
Deli	Salads	\$90,000	\$35,000	\$25,000
Meat	Beef	\$90,000	\$110,000	\$200,000
Meat	Chicken	\$75,000	\$82,000	\$150,000
Meat	Chicken	\$75,000	\$82,000	\$150,000

Quick Charts

You can use the Quick Analysis button to quickly make a chart. To do this, select your chart data including the headers, and then click on Quick Analysis, Charts, and then select one of the options shown.



Sparklines are another type of chart you can quickly make in Excel. To create a set of sparklines, select just your chart's numerical data, click on Quick Analysis, Sparklines, and then select the first option.

Department	Category 🔽 🤇	Oct 🔄 🔽 N	lov 🔽	Dec 🗾		
Bakery	Breads	\$30,000	\$15,000	\$20,000		
Bakery	Desserts	\$25,000	\$80,000	\$120,000	_	
Deli	Sandwiches	\$80,000	\$40,000	\$20,000		
Deli	Salads	\$90,000	\$35,000	\$25,000	<u> </u>	
Meat	Beef	\$90,000	\$110,000	\$200,000	_	
Meat	Chicken	\$75,000	\$82,000	\$150,000		
Produce	Veggies	\$30,000	\$80,000	\$30,000	\sim	
Produce	Fruit	\$10,000	\$30,000	\$40,000	_	
		Form	natting CP	narts Totals	Tables	Sparklines
/ze 9. ()	+ : •	Spar	klines are mini	charts placed in	single cells.	

Sparklines are good for visualizing trends over time. In this example, we can easily see how well various foods are selling from month to month at this grocery store.

PivotTables

PivotTables are a tool that help you to quickly summarize your data.

To create a PivotTable, select your data and then click on the PivotTable button on the Insert ribbon. In the dialog box, choose Existing Worksheet and select or type a cell address where you want to display your PivotTable.



Once you have your PivotTable, click inside it and then start checking boxes to summarize various portions of your data.

C	D	E		F	
Date 🔽	Salesperson	 Product 	🔽 Amou	int 🔽	Pi
6/25/2019	Anne	Beer	\$	1,400	Cha
6/30/2019	Mark	Wine	\$	1,010	Cho
7/17/2019	Anne	Beer	\$	750	Sea
7/21/2019	Mark	Soda	\$	510	
8/10/2019) Mariya	Soda	\$	1,600	
8/21/2019) Laura	Wine	\$	680	
					\checkmark
Row Labels 🔻	Sum of Amoun	it			\checkmark

Grand Total	5950
Wine	1690
Soda	2110
Beer	2150



	C		D		E		F		Ľ
Dat	te	•	Salesperson	-	Product	Ŧ	Amount	-	
	6/25/20	19	Anne		Beer		\$	1,400	
	6/30/20	19	Mark		Wine		\$	1,010	
	7/17/20	19	Anne		Beer		\$	750	
	7/21/20	19	Mark		Soda		\$	510	
	8/10/20	19	Mariya		Soda		\$	1,600	
	8/21/20	19	Laura		Wine		\$	680	

Row Labels	•	Sum of Amount
Anne		2150
Laura		680
Mariya		1600
Mark		1520
Grand Total		5950



Conditional Functions

Excel includes conditional functions, which allow you to create a function with multiple outputs that depend on whether or not a condition is met. The basic conditional function is the IF function.

The syntax for the IF function is:

=IF([conditional test],[output if condition met],[output if condition not met])



In this example, our condition of C9="apple" means that we're checking if the text in cell C9 matches the word "apple." It doesn't matter if the letters are case sensitive. The formula is set to return the word TRUE if the condition is met, and to return the FALSE if the condition is not met. "TRUE" and "FALSE" are unique in that unlike other letter strings you do not have to place quotes around them for them to be a valid output for the IF function.

SUMIF is another conditional function where you look at a table and you add up the values of the entries that match a certain parameter.