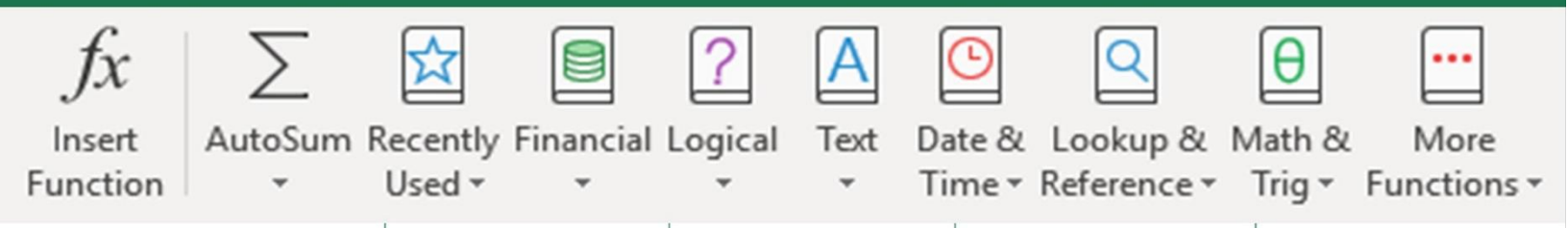
• Downloadable Practice Workbooks • New Formulas in Excel 2019 & Office 365



10 MOST POPULAR EXCEL FORMULAS

AND	COUNTIF	FORECAST.ETS	LOOKUP	REPT
ARRAY FORMULAS	COUNTIFS	FV	LOWER	RIGHT
AVERAGE	DATE	INDEX	MOD	TYPE
BETWEEN	DATEDIF	INDEX-MATCH	MONTH	UNIQUE
CHOOSE	DATEVALUE	INDIRECT	NETWORKDAYS	UPPER
CLEAN	DAY	ISBLANK	OR	VALUE
CONCAT	DAY360	ISERROR	PERCENTAGE	VLOOKUP
CONCATENATE	DAYS	ISNUMBER	PROPER	WEEKDAY
CONVERT	ENDOFMONTH	ISTEXT	RAND	WEEKNUM
COUNT	EXACT	LARGE	RANDARRAY	WORKDAY
COUNTA	FILTER	LEFT	RANDBETWEEN	YEAR
COUNTBLANK	FIND	LEN	REPLACE	3D FORMULAS
		GETPIVOTDATA	MATCH	ROUND
		HLOOKUP	MAX	SEARCH
		HOUR	MAXIFS	SEQUENCE
		HYPERLINK	MEDIAN	SMALL
		IF	MID	SORT
		IFERROR	MIN	SORTBY
		IFS	MINIFS	SUBSTITUTE
				SUBTOTAL
				SUMIF
				SUMIFS
				SUMPRODUCT
				SWITCH
				TEXT
				TEXTJOIN
				TIME
				TODAY
				TRANSPOSE
				TRIM

John Michaloudis Bryan Hong | myexcelonline.com Stand out from the crowd

LOOKUP FORMULAS

VLOOKUP

What does it do?

Searches for a value in the first column of a table array and returns a value in the same row from another column (to the right) in the table array.

Formula breakdown:

=VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])

What it means:

=VLOOKUP(this value, in this list, and get me value in this column, Exact Match/FALSE/0])

Example:

=VLOOKUP("Laptop",B14:D17,2,FALSE) = $185

i.e. The price of the Laptop in the table

Exercise Workbook:

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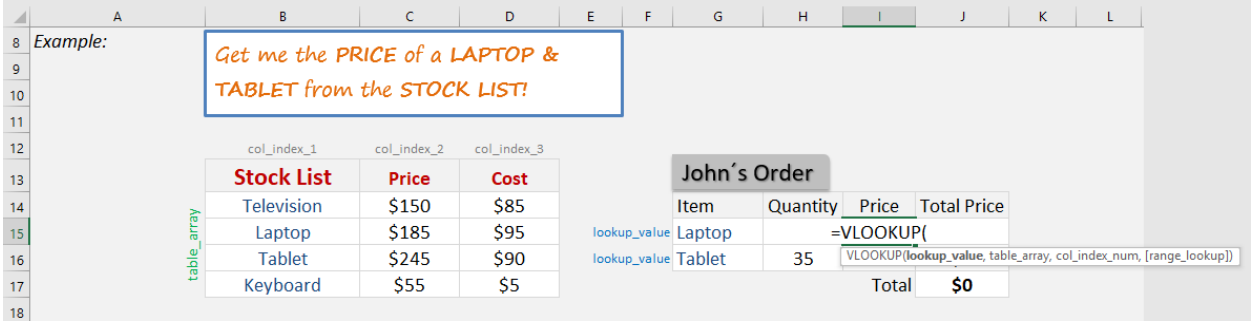
Excel`s **VLOOKUP** function is arguably the most used function in Excel but can also be the most tricky one to understand. I will show you a **VLOOKUP** example and in a few steps you will be able to extract values from a table and use them to do your custom reports and analysis.

You will be using VLOOKUP with confidence after this!

STEP 1: We need to enter the **VLOOKUP** function in a blank cell:

=VLOOKUP(



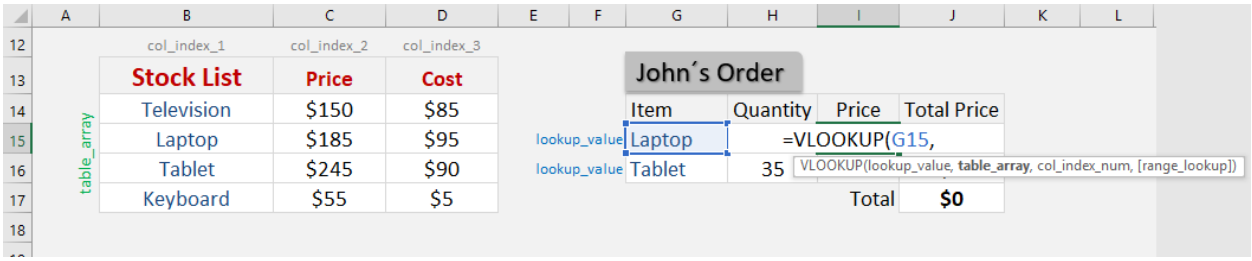
STEP 2: The **VLOOKUP** arguments:

lookup_value

What is the value that you want to look for?

In our first example, it will be "Laptop", so select the Item name

=VLOOKUP(G15,

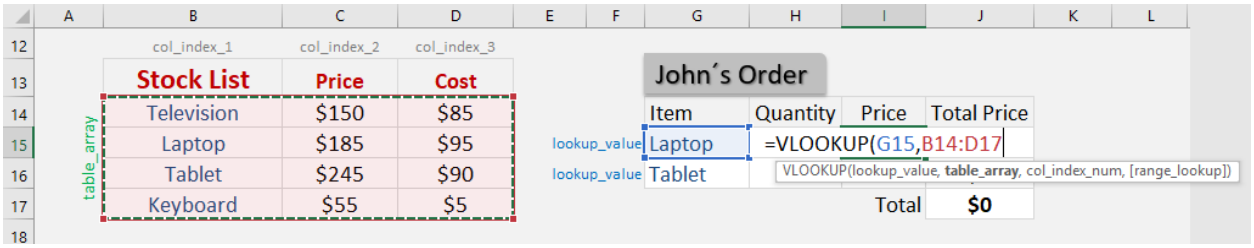


table_array

What is the table or range of cells that contains all your data?

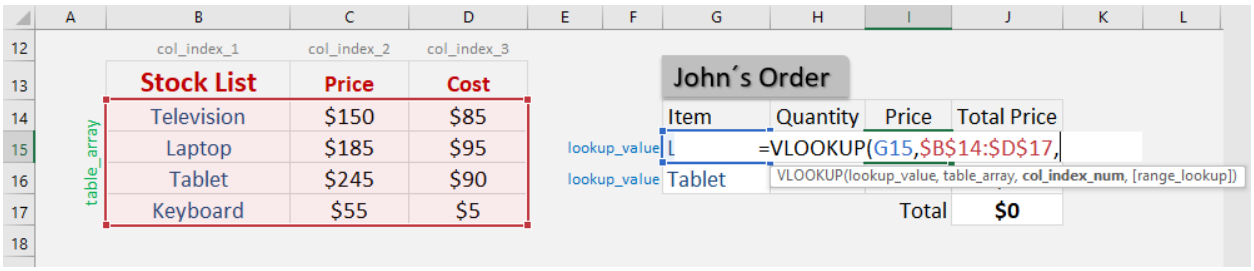
Make sure to select the stock list table so that our VLOOKUP formula will search here

=VLOOKUP(G15, B14:D17,



Ensure that you press **F4** so that you can lock the table range.

=VLOOKUP(G15, $B$14:$D$17,

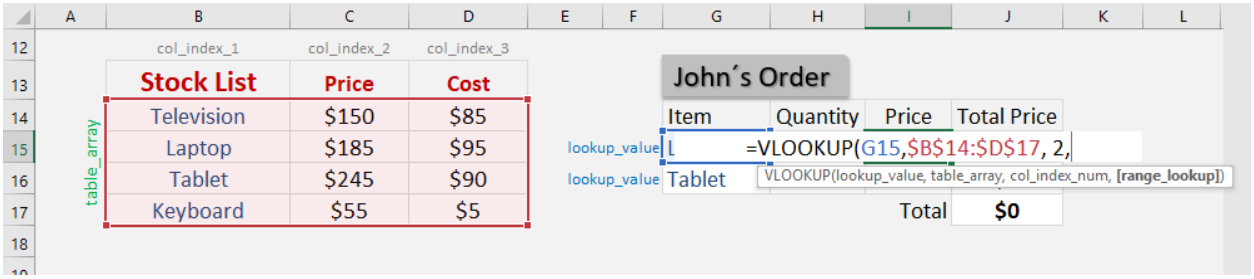


col_index_num

What is the column that you want to retrieve the value from?

*Since we want to get the price, our price is on the **2nd column** of our source data*

=VLOOKUP(G15, $B$14:$D$17, 2,

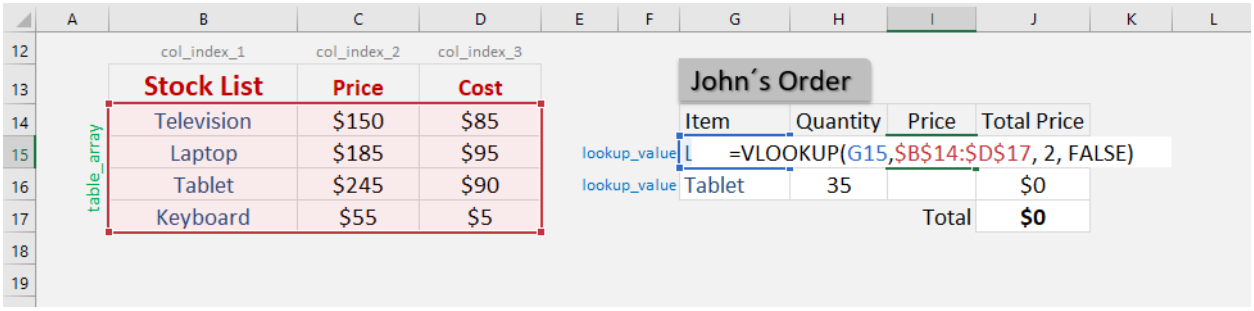


range_lookup

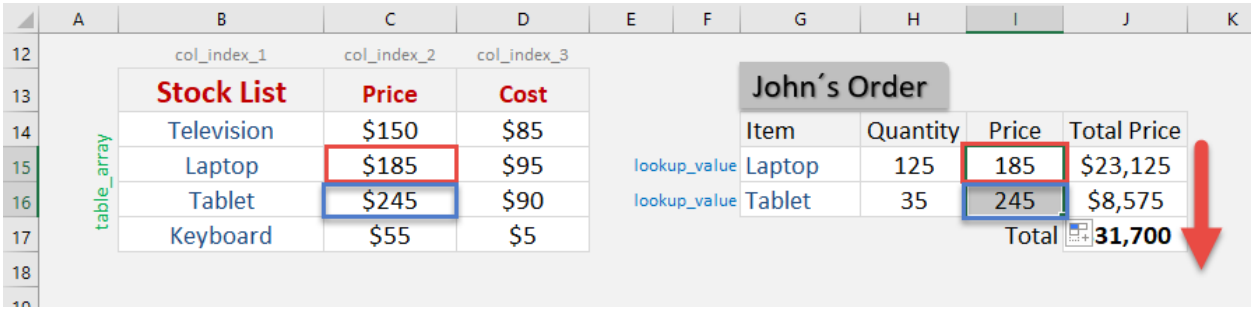
What kind of matching do you need?

*We want an exact match of the Laptop text so make sure **FALSE** is selected (or you can enter 0 instead of FALSE):*

=VLOOKUP(G15, $B$14:$D$17, 2, FALSE)



Apply the same formula to the rest of the cells by dragging the lower right corner downwards.



You now have all of the results!

HLOOKUP

What does it do?

Searches for a value in the first row of a table array and returns a value in the same column from another row (downwards) in the table array.

Formula breakdown:

=HLOOKUP(lookup_value, table_array, row_index_num, [range_lookup])

What it means:

=HLOOKUP(this value, in this list, and get me value in this row, [Exact Match/FALSE/0])

Example:

=HLOOKUP("Television", A8:D10, 2, FALSE) =$150

Exercise Workbook:

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Ever had a horizontal table and you want to search for values in the table easily?

I'm sure you do! There is a simple way to do this with Excel's **HLOOKUP function!**

This is very similar to the VLOOKUP Function! The only difference is instead of working with vertical tables, you get to do the same thing for horizontal tables!

Let's try it out on this horizontal table!

Stock List	Television	Laptop	Tablet
Price	$ 150.00	$ 185.00	$ 245.00
Cost	$ 85.00	$ 95.00	$ 90.00

Using the **HLOOKUP function** let us get the following values from this table:

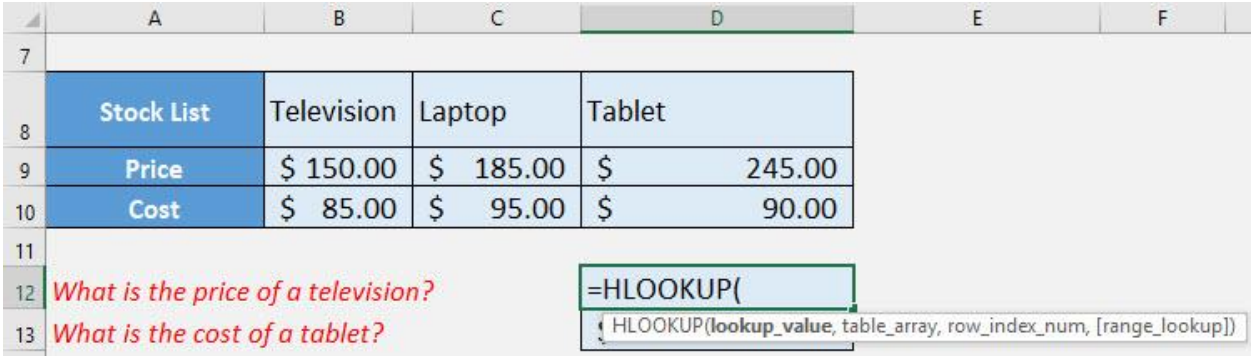
- What is the **price** of a **television?**
- What is the **cost** of a **tablet?**

I explain how you can do this below:

STEP 1: Let us target the first question: ***What is the price of a television?***

We need to **enter the *HLOOKUP* function in a blank cell**:

=HLOOKUP(



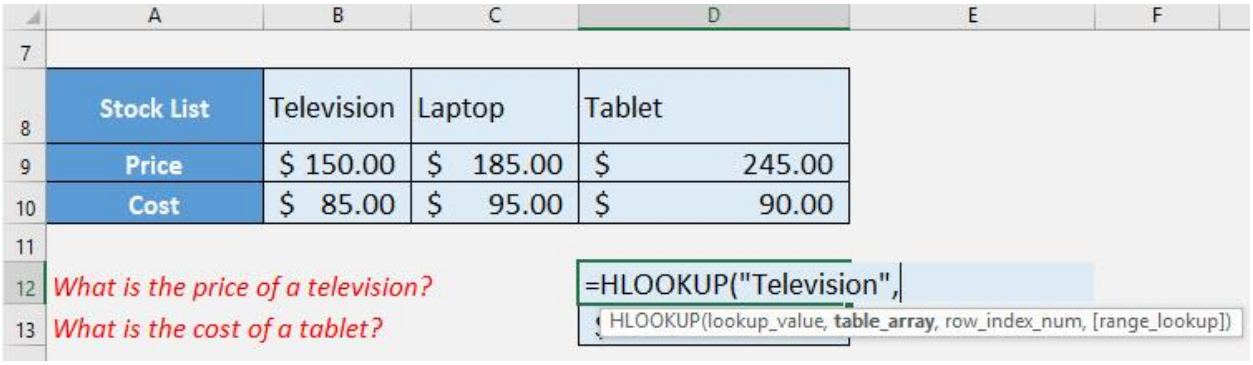
STEP 2: The **HLOOKUP** arguments:

lookup_value

What is the lookup name?

We want to lookup in the "Television" column

=HLOOKUP("Television",

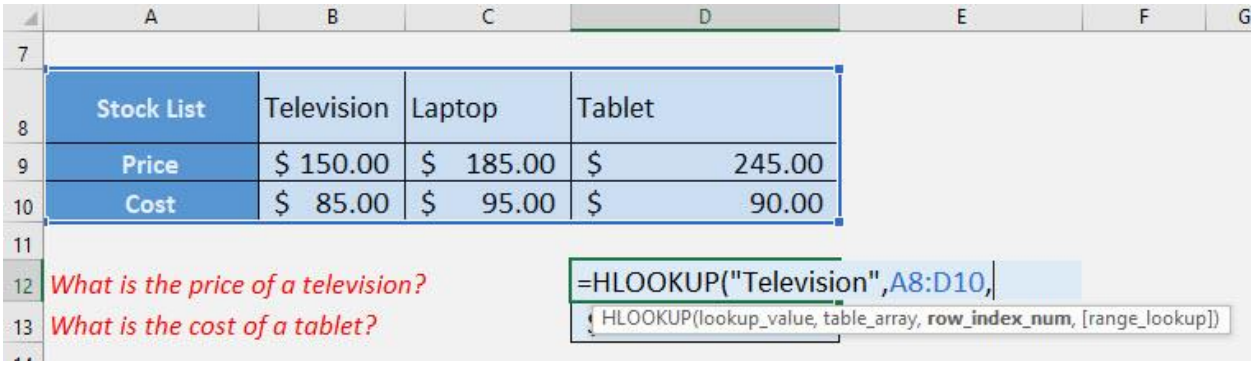


table_array

What is our list?

Select the entire table!

=HLOOKUP("Television", A8:D10,

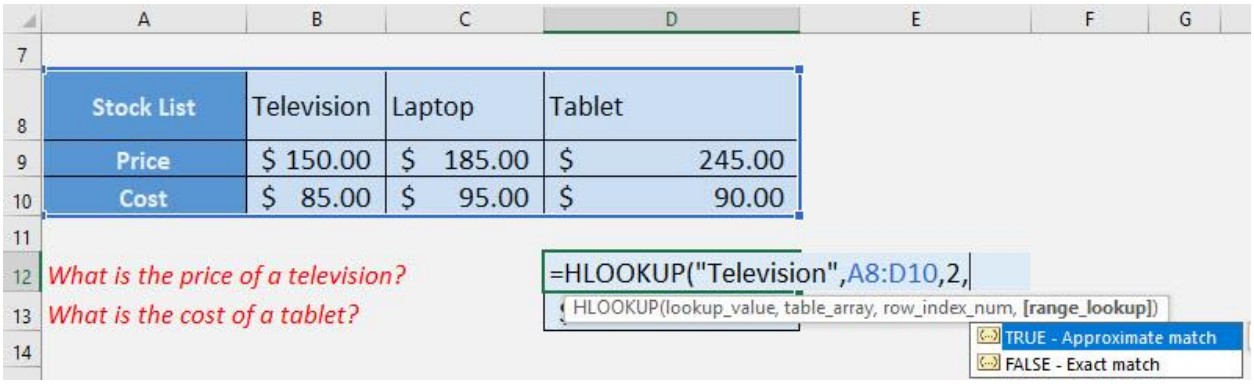


row_index_num

Which row should we get our value from?

We want the price, so it's row #2 in our table!

=HLOOKUP("Television", A8:D10, 2,

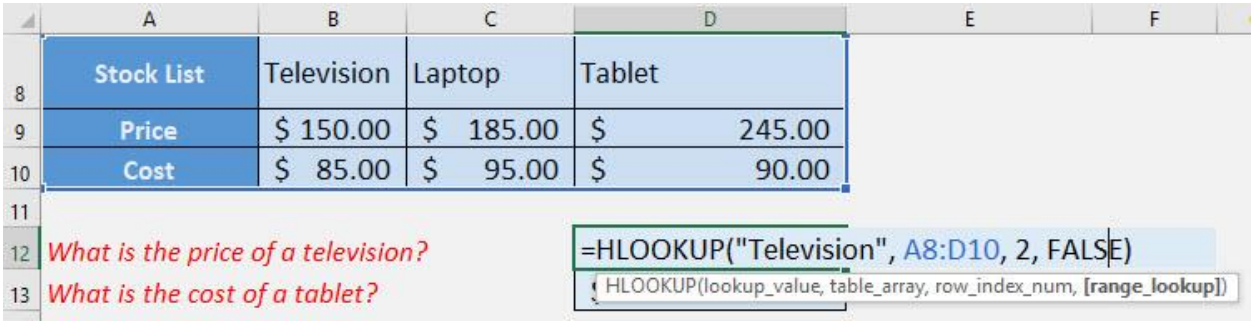


[range_lookup]

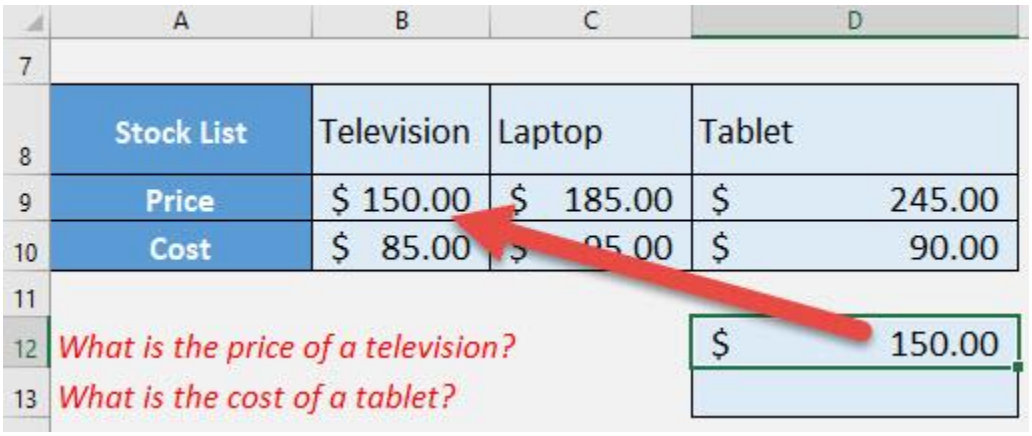
Do we want an appropriate match or exact match?

We want an exact match, so specify FALSE here.

=HLOOKUP("Television", A8:D10, 2, FALSE)



You now have your television price!

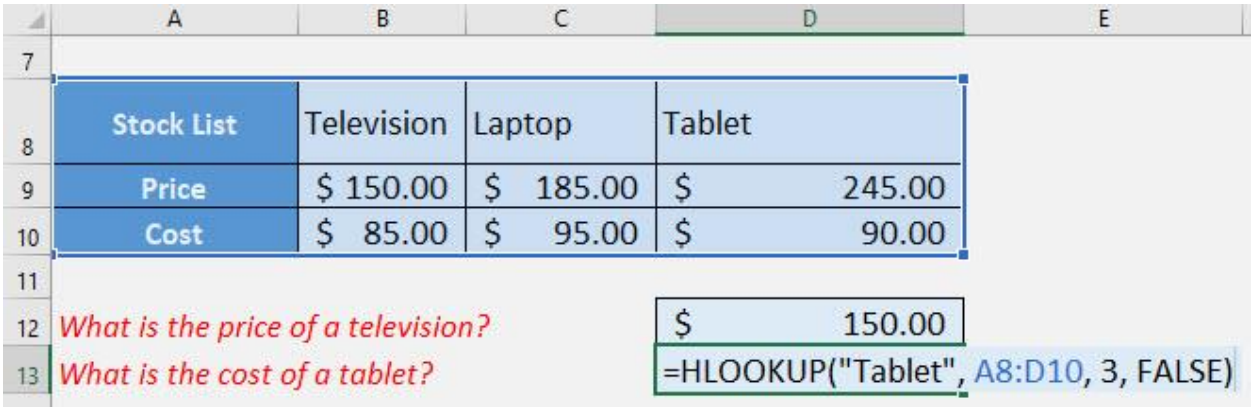


	A	B	C	D
7				
8	Stock List	Television	Laptop	Tablet
9	Price	$ 150.00	$ 185.00	$ 245.00
10	Cost	$ 85.00	$ 95.00	$ 90.00
11				
12	*What is the price of a television?*			$ 150.00
13	*What is the cost of a tablet?*			

STEP 3: Now let us try doing the same for the cost of the Tablet!

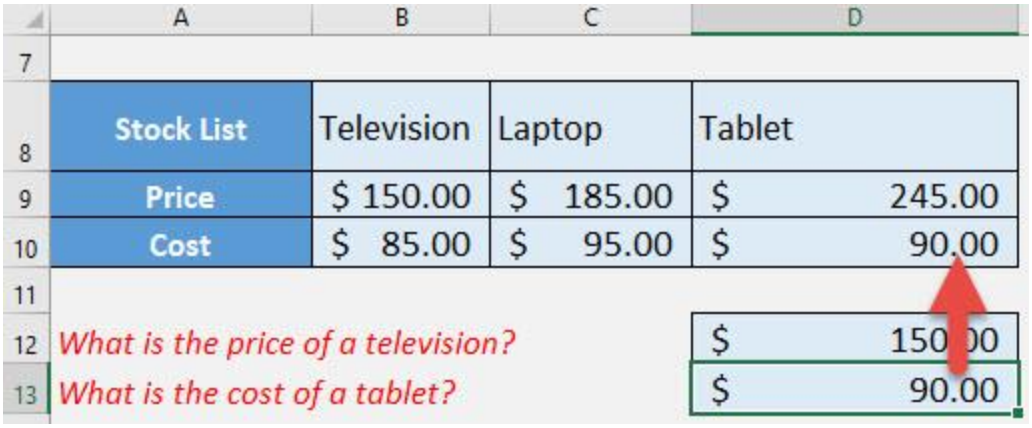
The lookup name is "Tablet", and the cost is on row #3 in our table:

=HLOOKUP("Tablet", A8:D10, 3, FALSE)



	A	B	C	D	E
7					
8	Stock List	Television	Laptop	Tablet	
9	Price	$ 150.00	$ 185.00	$ 245.00	
10	Cost	$ 85.00	$ 95.00	$ 90.00	
11					
12	*What is the price of a television?*			$ 150.00	
13	*What is the cost of a tablet?*			=HLOOKUP("Tablet", A8:D10, 3, FALSE)	

You now have your tablet cost!



	A	B	C	D
7				
8	**Stock List**	Television	Laptop	Tablet
9	**Price**	$ 150.00	$ 185.00	$ 245.00
10	**Cost**	$ 85.00	$ 95.00	$ 90.00
11				
12	*What is the price of a television?*			$ 150.00
13	*What is the cost of a tablet?*			$ 90.00

INDEX / MATCH

What does it do?

Searches the row position of a value/text in one column (using the MATCH function)
and returns the value/text in the same row position from another column to the left or right (using the INDEX function)

Formula breakdown:

=INDEX(array, MATCH(lookup_value, lookup_array, [match_type])

What it means:

=INDEX(return the value/text from this range, MATCH(from the row position of this value/text))

Example:

=INDEX(B13:B17,MATCH("Tablet",C13:C17,0)) = TAB698

i.e. Stock Id of a Tablet

Exercise Workbook:

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The VLOOKUP formula searches for a value in the first column of an array and returns a value to the right of that array.

How about if you wanted to return a value to the left hand side of that array?

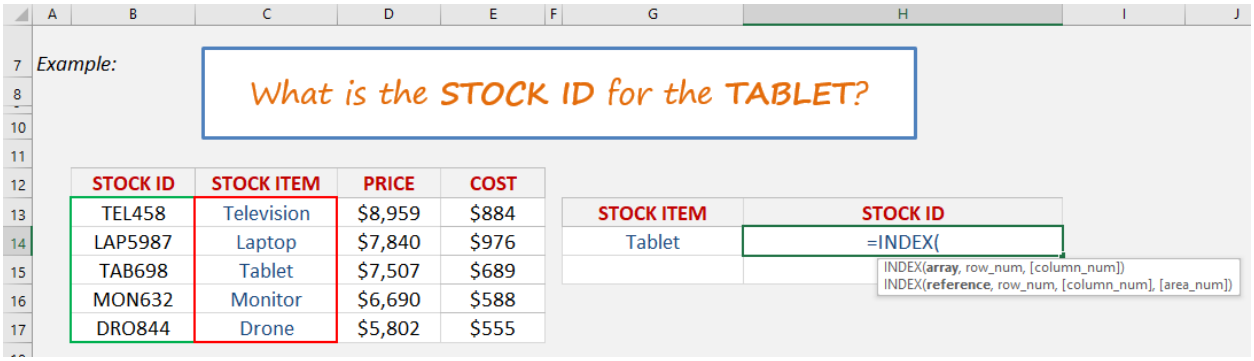
Well, this is where the **INDEX-MATCH** formula comes in and gives you a helping hand!

It searches the row position of a value/text in one column (using the **MATCH** function) and returns the value/text in the same row position from another column to the left or right (using the **INDEX** function).

We want to get the **stock id of the tablet**, and we will use a combination of **INDEX** and **MATCH** to get this!

STEP 1: We need to enter the **INDEX** function in a blank cell:

=INDEX(

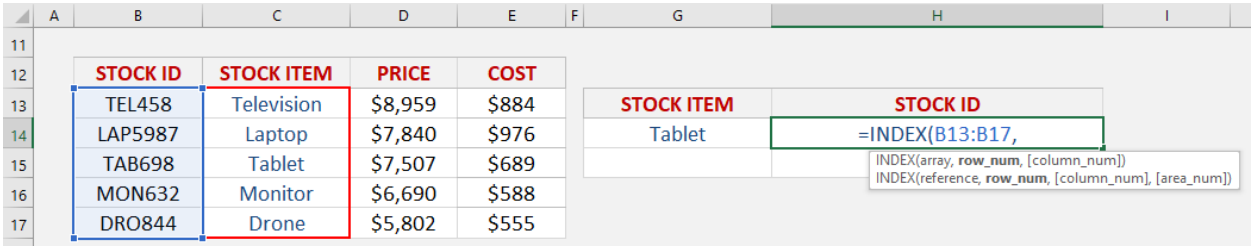


STEP 2: The **INDEX** arguments:

array

Where is the list that contains the stock id that we want to return?

=INDEX(B13:B17,

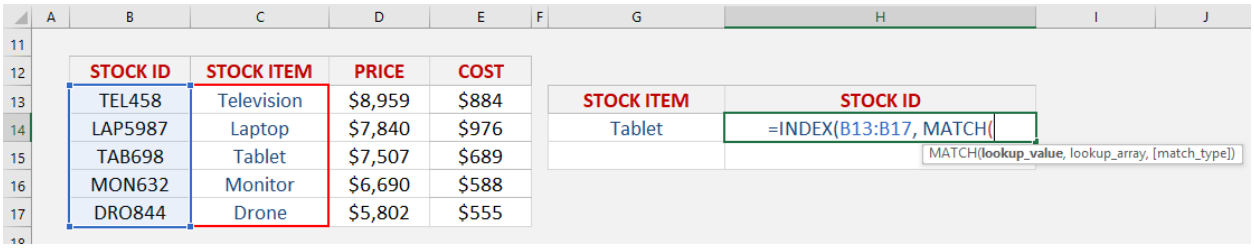


row_num

What row number contains the data?

Let us use the Match function to get the row number of the stock item.

=INDEX(B13:B17, MATCH(



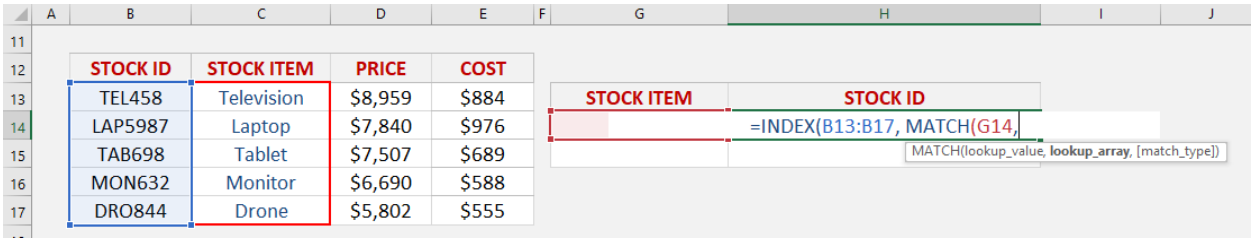
STEP 3: The MATCH arguments:

lookup_value

What is the value that we want to match?

We want to match the Tablet.

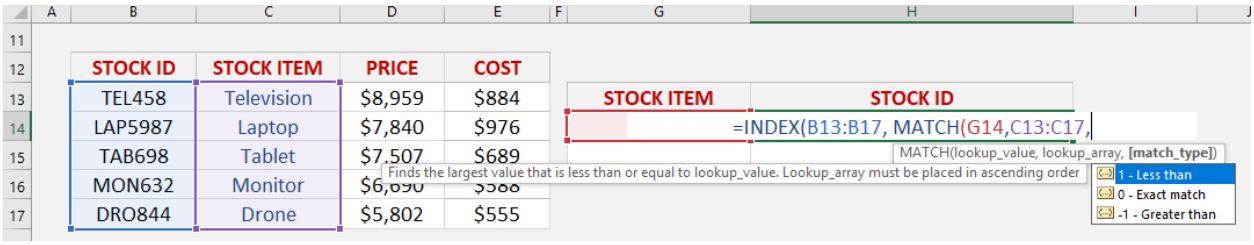
=INDEX(B13:B17, MATCH(G14,



lookup_array

Where is the list that contains the stock items?

=INDEX(B13:B17, MATCH(G14, C13:C17,

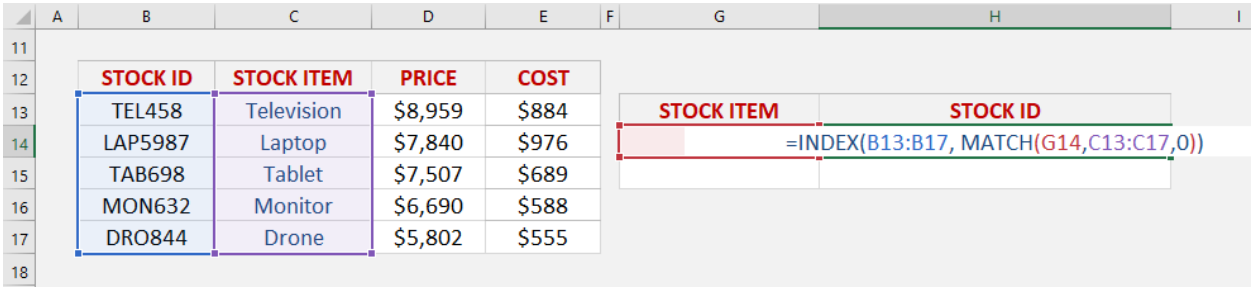


match_type

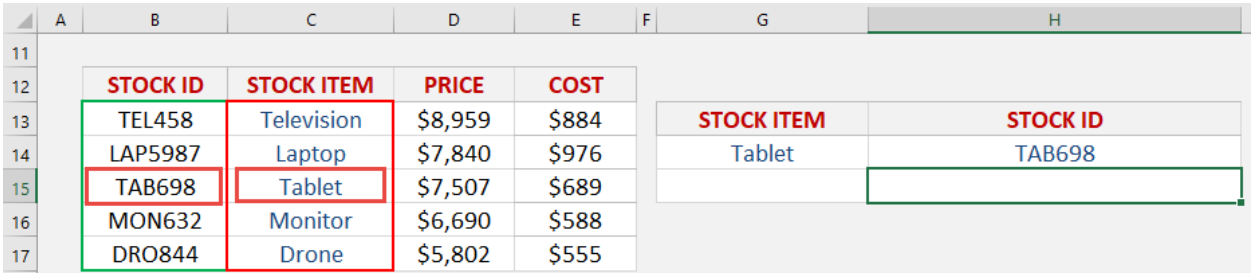
What kind of matching do you want?

Let's put in 0 to get the exact match

=INDEX(B13:B17, MATCH(G14, C13:C17, 0))



With this, the **MATCH** function will get the row number containing the Tablet, which is row #3. Then with Row #3, we will get the stock id in that same row using the **INDEX** function.



LOGICAL FORMULAS

IF

What does it do?

It returns a value that you set if a condition is met, and a value if it is not met

Formula breakdown:

=IF(Logical Test,Value if True,Value if False)

What it means:

=IF(The condition to be checked, Value to be shown if the condition is met, Value to be shown if condition is not met)

Example:

=IF(D15>3000,"Bonus","No Bonus") = No Bonus

Exercise Workbook:

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The **IF function** is probably one of the most used Excel functions because it is easy to understand and very flexible when you apply it to real life situations.

Here I will show you a couple of ways that you can use the **IF function** to get you up and going.

We want to show a **Bonus** value if **sales are bigger than $3000**, and **No Bonus** is shown if this condition is not met. Afterwards let's try computing the **10% bonus**!

STEP 1: We need to enter the **IF function** in a blank cell:

=IF(

Example:

If a SALES REP has sold more than $3,000, then give them a 10% BONUS!

Sales Rep	Region	Sales	Bonus?	Bonus $
John	North	$1,092	=IF(	
Paul	South	$9,951		
Ringo	East	$2,006		
George	West	$8,738		
Ana	North	$3,185		
Marie	South	$1,661		
Wayland	East	$5,594		
Helen	West	$457		
Paula	North	$4,935		

STEP 2: The **IF** arguments:

logical_test

What is your condition?

Sales Rep has sold more than 3000 dollars.

=IF(D15>3000,

	B	C	D	E	F
14	Sales Rep	Region	Sales	Bonus?	Bonus $
15	John	North	=IF(D15>3000,		
16	Paul	South	$9,951		
17	Ringo	East	$2,006		
18	George	West	$8,738		
19	Ana	North	$3,185		
20	Marie	South	$1,661		
21	Wayland	East	$5,594		
22	Helen	West	$457		
23	Paula	North	$4,935		
24					

value_if_true

What value should be displayed if the condition is true?

*We want "**Bonus**" to be displayed*

=IF(D15>3000, "Bonus",

	B	C	D	E	F
14	Sales Rep	Region	Sales	Bonus?	Bonus $
15	John	North	=IF(D15>3000, "Bonus",		
16	Paul	South	$9,951		
17	Ringo	East	$2,006		
18	George	West	$8,738		
19	Ana	North	$3,185		
20	Marie	South	$1,661		
21	Wayland	East	$5,594		
22	Helen	West	$457		
23	Paula	North	$4,935		

value_if_false

What value should be displayed if the condition is false?

*We want "**No Bonus**" to be displayed*

=IF(D15>3000, "Bonus", "No Bonus")

	B	C	D	E	F
14	**Sales Rep**	**Region**	**Sales**	**Bonus?**	**Bonus $**
15	John		=IF(D15>3000, "Bonus", "No Bonus")		
16	Paul	South	IF(logical_test, **[value_if_true]**, [value_if_false])		
17	Ringo	East	$2,006		
18	George	West	$8,738		
19	Ana	North	$3,185		
20	Marie	South	$1,661		
21	Wayland	East	$5,594		
22	Helen	West	$457		
23	Paula	North	$4,935		

Apply the same formula to the rest of the cells by dragging the lower right corner downwards.

	B	C	D	E	F
14	**Sales Rep**	**Region**	**Sales**	**Bonus?**	**Bonus $**
15	John	North	$1,092	No Bonus	
16	Paul	South	$9,951	Bonus	
17	Ringo	East	$2,006	No Bonus	
18	George	West	$8,738	Bonus	
19	Ana	North	$3,185	Bonus	
20	Marie	South	$1,661	No Bonus	
21	Wayland	East	$5,594	Bonus	
22	Helen	West	$457	No Bonus	
23	Paula	North	$4,935	Bonus	
24					

STEP 3: Let us now aim to give the **10% Bonus!**

The **IF** arguments:

logical_test

What is your condition?

Sales Rep has sold more than 3000 dollars.

=IF(D15>3000,

	B	C	D	E	F	G
14	**Sales Rep**	**Region**	**Sales**	**Bonus?**	**Bonus $**	
15	John	North	$1,092		=IF(D15>3000,	
16	Paul	South	$9,951	Bonus		
17	Ringo	East	$2,006	No Bonus		
18	George	West	$8,738	Bonus		
19	Ana	North	$3,185	Bonus		
20	Marie	South	$1,661	No Bonus		
21	Wayland	East	$5,594	Bonus		
22	Helen	West	$457	No Bonus		
23	Paula	North	$4,935	Bonus		

value_if_true

What value should be displayed if the condition is true?

*We want give a **10% bonus based on sales***

=IF(D15>3000, D15*10%,

	B	C	D	E	F	G
14	Sales Rep	Region	Sales	Bonus?	Bonus $	
15	John	North	$1,092	=IF(D15>3000, D15*10%,		
16	Paul	South	$9,951	Bonus		
17	Ringo	East	$2,006	No Bonus		
18	George	West	$8,738	Bonus		
19	Ana	North	$3,185	Bonus		
20	Marie	South	$1,661	No Bonus		
21	Wayland	East	$5,594	Bonus		
22	Helen	West	$457	No Bonus		
23	Paula	North	$4,935	Bonus		

value_if_false

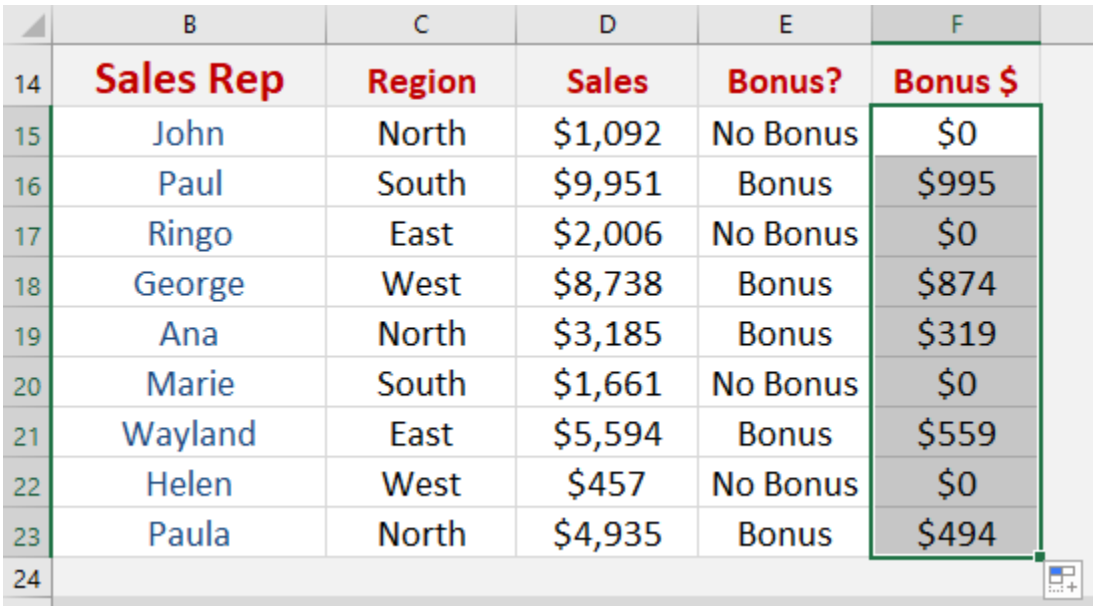
What value should be displayed if the condition is false?

Then no bonus amount should be given, type in 0

=IF(D15>3000, D15*10%, 0)

	B	C	D	E	F	G
14	Sales Rep	Region	Sales	Bonus?	Bonus $	
15	John	North	$1,092	=IF(D15>3000, D15*10%, 0)		
16	Paul	South	$9,951	Bonus		
17	Ringo	East	$2,006	No Bonus		
18	George	West	$8,738	Bonus		
19	Ana	North	$3,185	Bonus		
20	Marie	South	$1,661	No Bonus		
21	Wayland	East	$5,594	Bonus		
22	Helen	West	$457	No Bonus		
23	Paula	North	$4,935	Bonus		

Apply the same formula to the rest of the cells by dragging the lower right corner downwards.



	B	C	D	E	F
14	Sales Rep	Region	Sales	Bonus?	Bonus $
15	John	North	$1,092	No Bonus	$0
16	Paul	South	$9,951	Bonus	$995
17	Ringo	East	$2,006	No Bonus	$0
18	George	West	$8,738	Bonus	$874
19	Ana	North	$3,185	Bonus	$319
20	Marie	South	$1,661	No Bonus	$0
21	Wayland	East	$5,594	Bonus	$559
22	Helen	West	$457	No Bonus	$0
23	Paula	North	$4,935	Bonus	$494
24					

You now have all of results!

IFS

What does it do?

Checks multiple conditions and returns the value of the first TRUE condition

Formula breakdown:

=IFS(logical_test1, value_if_true1, [logical_test2, value_if_true2], ...)

What it means:

=IFS(first condition to check, value to return, [succeeding conditions to check], ...)

Example:

=IFS(10000<8456, 13%, 10000<15874, 18%, 10000>=15874, 22%)

=18%

Exercise Workbook:

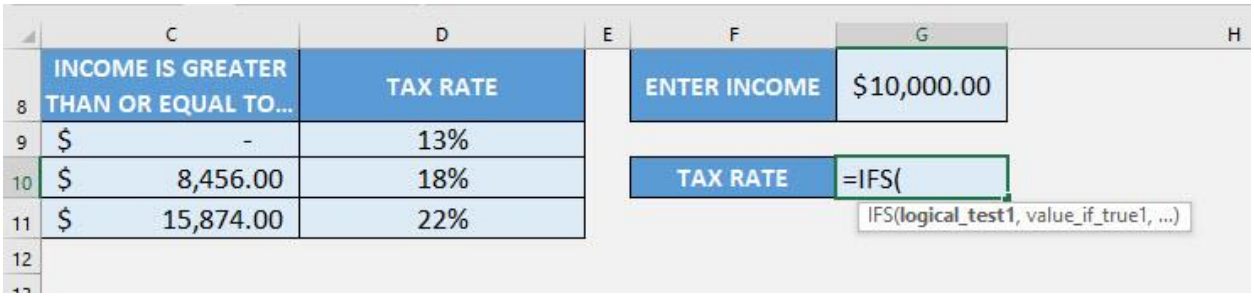
DOWNLOAD EXCEL WORKBOOK

If you have multiple logical conditions to check, instead of creating Nested IF Formulas, we can use **Excel's IFS Formula!** It allows us to specify multiple conditions to check, then the **IFS Formula** will look for the first condition that gets satisfied!

Let us try it out on a simple tax table, then we will create an **IFS Formula** that will simulate the exact same logic of the table!

STEP 1: We need to **enter the *IFS* function in a blank cell**:

=IFS(



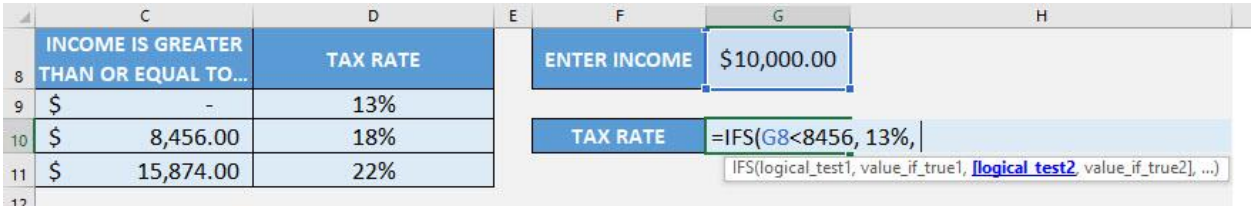
STEP 2: The **IFS** arguments:

logical_test1, value_if_true1

What is the first condition and value to return if the condition is met?

Let us start from the minimum value of the tax table. If the income is less than $8456, then the tax rate is 13%

=IFS(G8<8456, 13%,

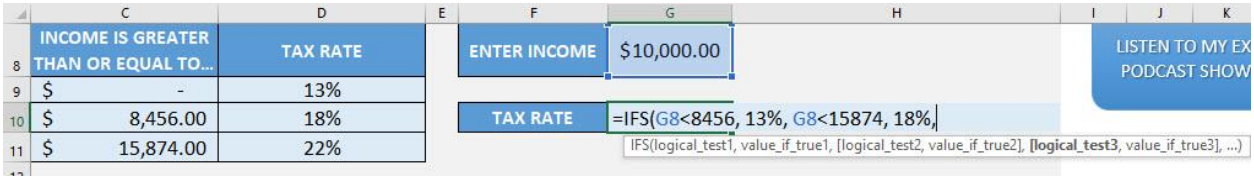


logical_test2, value_if_true2

What is the second condition and value to return if the condition is met?

Going to the second row, if the income is less than $15874, then the tax rate is 18%

=IFS(G8<8456, 13%, G8<15874, 18%,

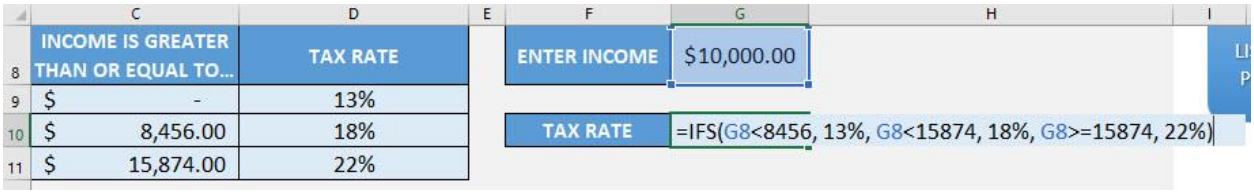


logical_test3, value_if_true3

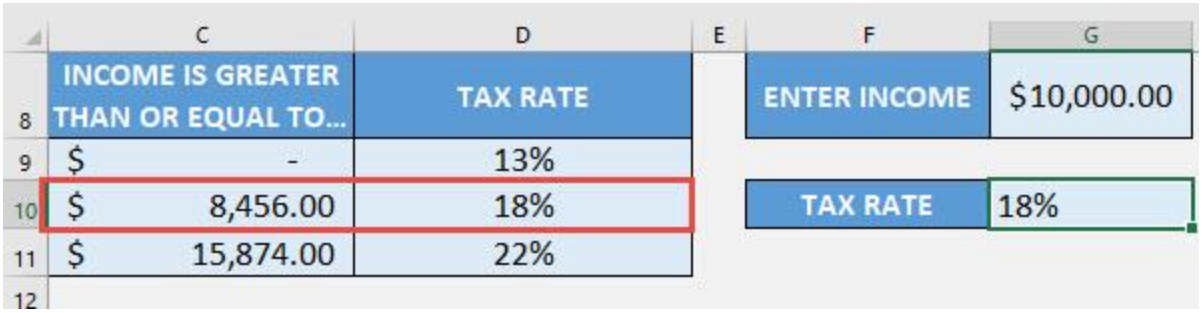
What is the third condition and value to return if the condition is met?

Going to the last row, if the income is greater than or equal to $15874, then the tax rate is 22%

=IFS(G8<8456, 13%, G8<15874, 18%, G8>=15874, 22%)



You now have your correct tax rate!



If we were to do this the old way it would look something like this using Nested IF Formulas:

=IF(G8<8456, 13%, IF(G8<15874, 18%, 22%))

It is much neater & easier to read using the **IFS Formula**, especially if you have lots of conditions!

MATH FORMULAS

SUMIF

What does it do?

Sums the values in a range that meet a criteria that you specify

Formula breakdown:

=SUMIF(Range or Cells, Criteria, [Sum_Range])

What it means:

=SUMIF(Evaluate this Range/Cells, With this Criteria, [Optional Sum Range])

Example:

=SUMIF(D15:D23,">3000") = $17,435

i.e. Sum of all the values that are above $3,000

Exercise Workbook:

DOWNLOAD EXCEL WORKBOOK

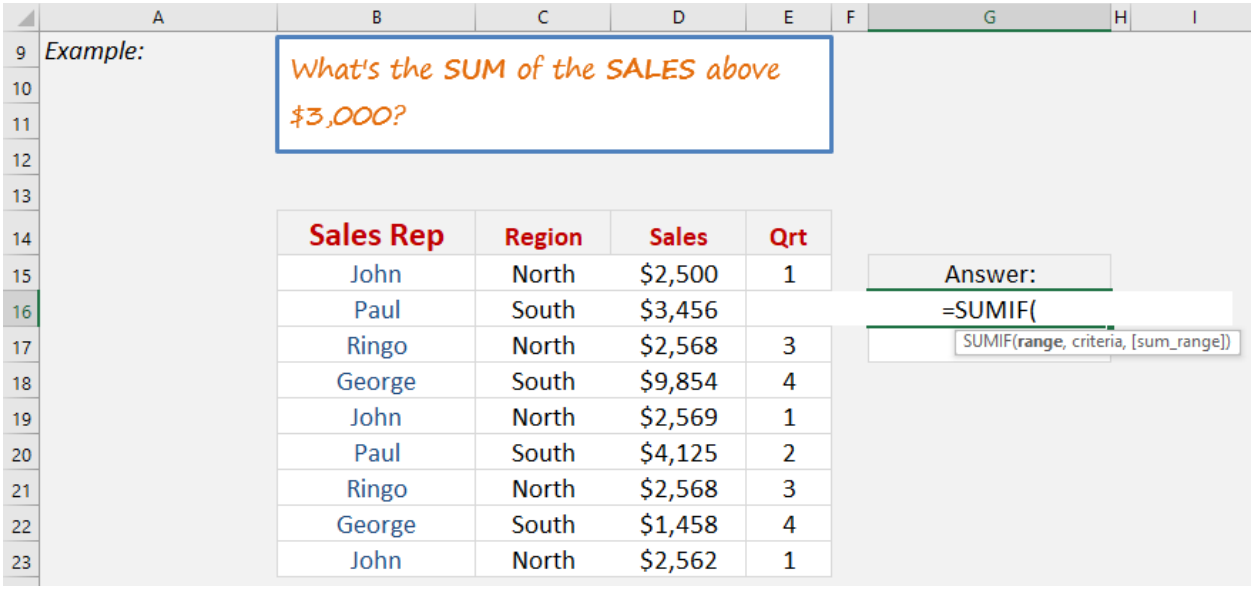
The SUMIF function is used widely amongst spreadsheet users as it is a simple Excel function. It allows you to Sum the values in a range that meet a criteria that you specify.

So if you want to Sum a range of sales values that are above $3,000 then this is the best Excel function to use, as I explain below.

We want to get the sum of the sales amounts that are above $3000.

STEP 1: We need to enter the SUMIF function in a blank cell:

=SUMIF(



Sales Rep	Region	Sales	Qrt
John	North	$2,500	1
Paul	South	$3,456	
Ringo	North	$2,568	3
George	South	$9,854	4
John	North	$2,569	1
Paul	South	$4,125	2
Ringo	North	$2,568	3
George	South	$1,458	4
John	North	$2,562	1

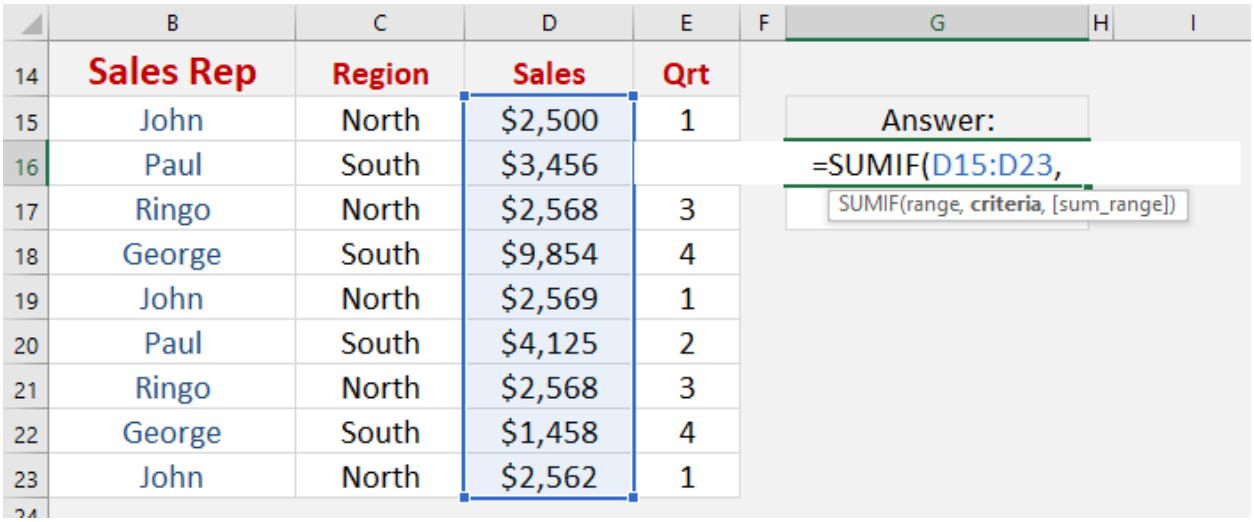
STEP 2: The SUMIF arguments:

range

What is your range that contains the source data?

Highlight the column that contains the sales data

=SUMIF(D15:D23,



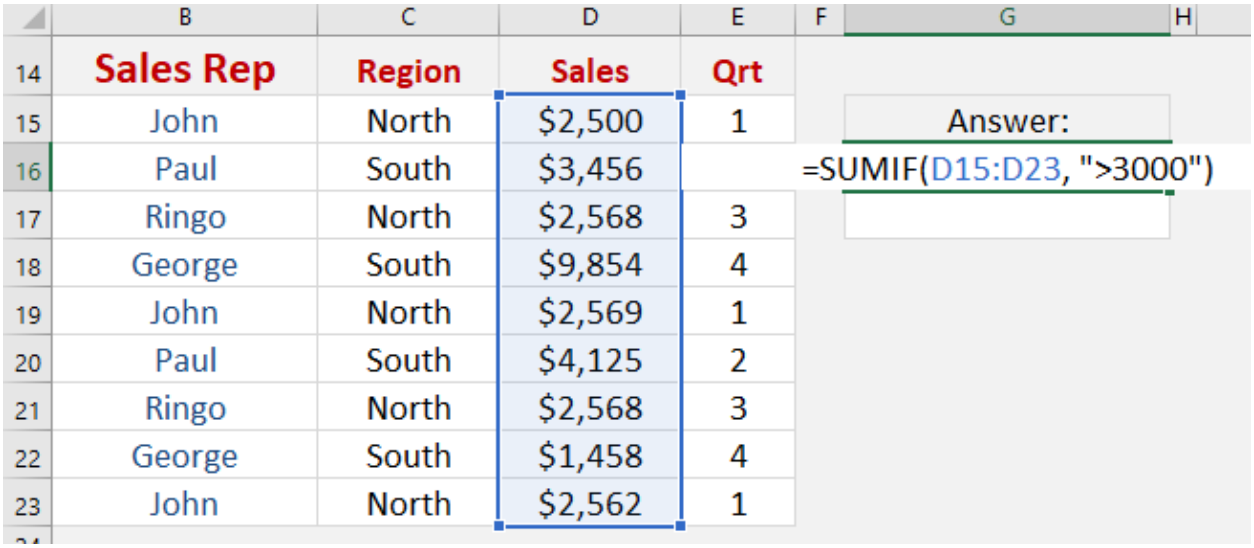
	B	C	D	E	F	G	H	I
14	Sales Rep	Region	Sales	Qrt				
15	John	North	$2,500	1		Answer:		
16	Paul	South	$3,456			=SUMIF(D15:D23,		
17	Ringo	North	$2,568	3				
18	George	South	$9,854	4				
19	John	North	$2,569	1				
20	Paul	South	$4,125	2				
21	Ringo	North	$2,568	3				
22	George	South	$1,458	4				
23	John	North	$2,562	1				

criteria

Which records do you want to sum together?

Since we want to sum the amounts greater than 3000, then let's type in >3000

=SUMIF(D15:D23, ">3000")



	B	C	D	E	F	G	H
14	Sales Rep	Region	Sales	Qrt			
15	John	North	$2,500	1		Answer:	
16	Paul	South	$3,456			=SUMIF(D15:D23, ">3000")	
17	Ringo	North	$2,568	3			
18	George	South	$9,854	4			
19	John	North	$2,569	1			
20	Paul	South	$4,125	2			
21	Ringo	North	$2,568	3			
22	George	South	$1,458	4			
23	John	North	$2,562	1			

Just like that, Excel has selectively found the values and summed them together!

	B	C	D	E
14	**Sales Rep**	**Region**	**Sales**	**Qrt**
15	John	North	$2,500	1
16	Paul	South	$3,456	2
17	Ringo	North	$2,568	3
18	George	South	$9,854	4
19	John	North	$2,569	1
20	Paul	South	$4,125	2
21	Ringo	North	$2,568	3
22	George	South	$1,458	4
23	John	North	$2,562	1

Answer:
$17,435

SUMIFS

What does it do?

Sums multiple criteria

Formula breakdown:

=SUMIFS(Sum_Range,Criteria_Range1,Criteria1,Criteria_Range2,Criteria2...)

What it means:

=SUMIFS(Return the Sum from this Range,Evaluate this Range,With this Criteria,Evaluate that Range,With that Criteria...)

Example:

=SUMIFS(D15:D23,B15:B23,"john",C15:C23,"north") = $7,631

i.e. Total sales for John in the North region

Exercise Workbook:

DOWNLOAD EXCEL WORKBOOK

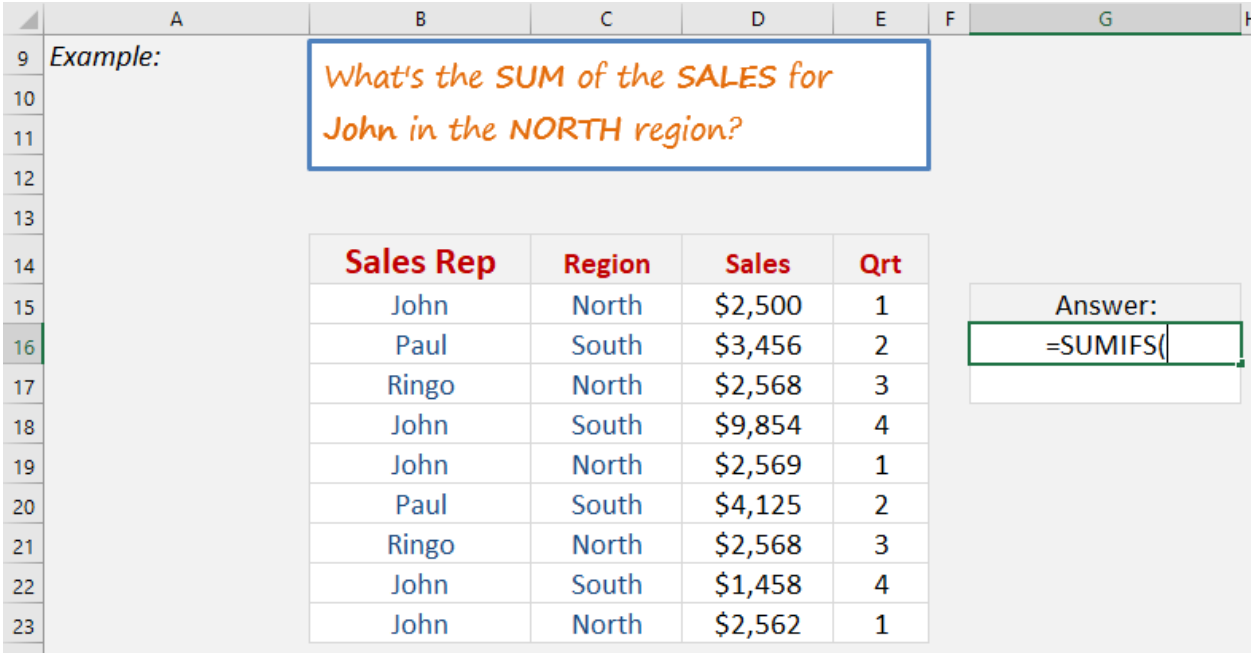
The **SUMIFS** function allows you to Sum multiple criteria.

For example, you can select one Sales Rep from a list of Sales Reps and select one Region from a list of Regions and return the Sum of those arguments from a Sales list. See how easy it is...

We want to get the **sum of the sales amounts** for **John** in the **North Region**.

STEP 1: We need to enter the **SUMIFS** function in a blank cell:

=SUMIFS(



Sales Rep	Region	Sales	Qrt
John	North	$2,500	1
Paul	South	$3,456	2
Ringo	North	$2,568	3
John	South	$9,854	4
John	North	$2,569	1
Paul	South	$4,125	2
Ringo	North	$2,568	3
John	South	$1,458	4
John	North	$2,562	1

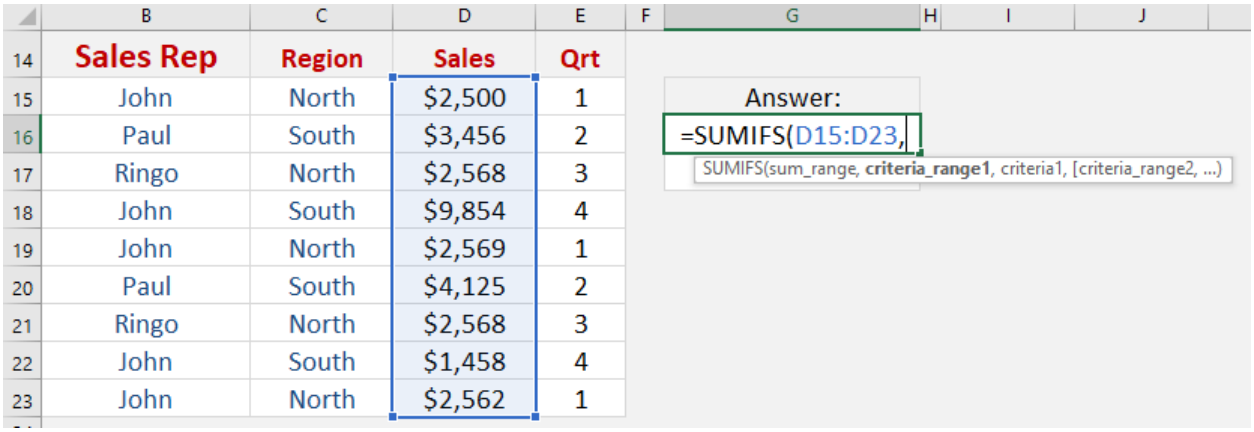
STEP 2: The **SUMIFS** arguments:

range

What is your range that contains the data to add together?

*Highlight the column that contains the **Sales** data*

=SUMIFS(D15:D23,



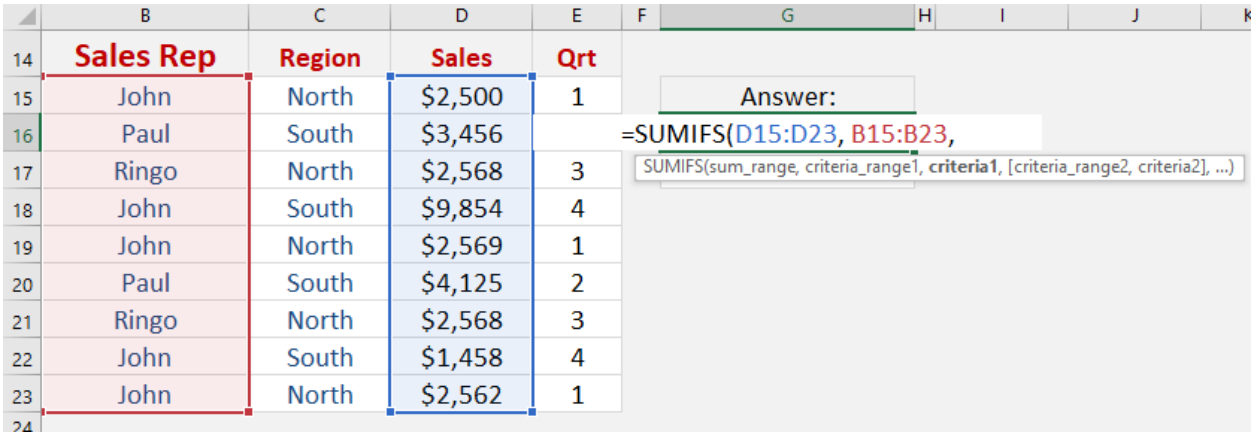
	B	C	D	E	F	G	H	I	J
14	Sales Rep	Region	Sales	Qrt					
15	John	North	$2,500	1		Answer:			
16	Paul	South	$3,456	2		=SUMIFS(D15:D23,			
17	Ringo	North	$2,568	3		SUMIFS(sum_range, **criteria_range1**, criteria1, [criteria_range2, ...])			
18	John	South	$9,854	4					
19	John	North	$2,569	1					
20	Paul	South	$4,125	2					
21	Ringo	North	$2,568	3					
22	John	South	$1,458	4					
23	John	North	$2,562	1					

criteria_range1

For the first criteria, which range contains the data?

*Let us target the **Sales Rep** first, so select that column*

=SUMIFS(D15:D23, B15:B23,



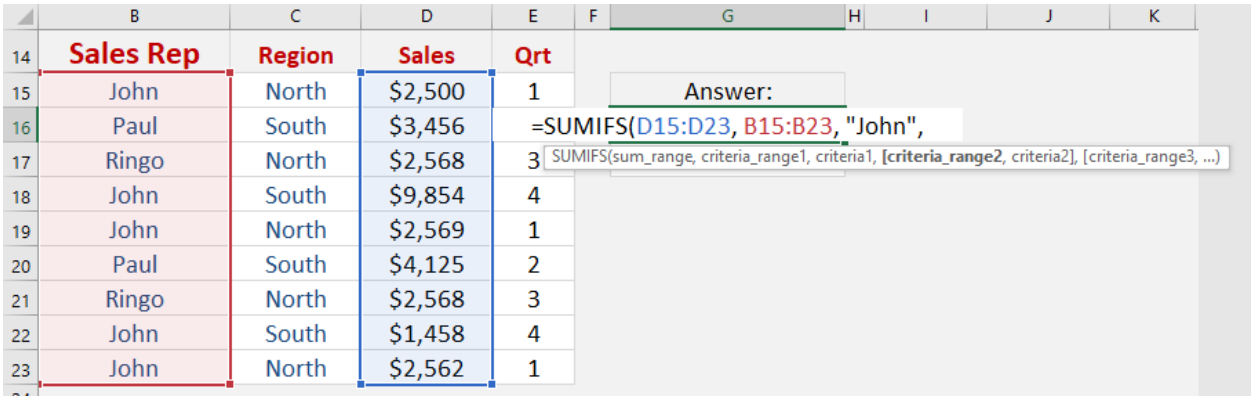
	B	C	D	E	F	G	H	I	J	K
14	Sales Rep	Region	Sales	Qrt						
15	John	North	$2,500	1		Answer:				
16	Paul	South	$3,456			=SUMIFS(D15:D23, B15:B23,				
17	Ringo	North	$2,568	3		SUMIFS(sum_range, criteria_range1, **criteria1**, [criteria_range2, criteria2], ...)				
18	John	South	$9,854	4						
19	John	North	$2,569	1						
20	Paul	South	$4,125	2						
21	Ringo	North	$2,568	3						
22	John	South	$1,458	4						
23	John	North	$2,562	1						

criteria1

What is your filtering criteria?

We want to filter for John, so type in "John"

=SUMIFS(D15:D23, B15:B23, "John",

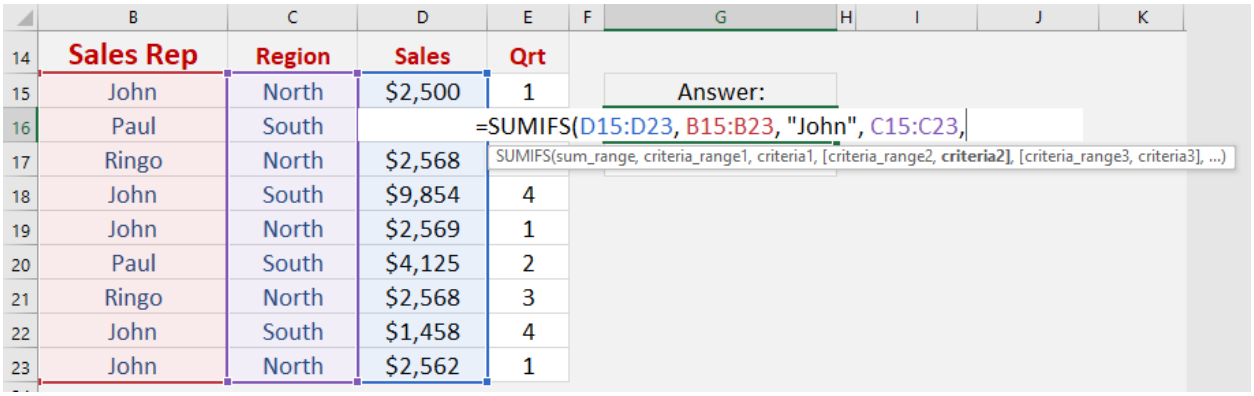


criteria_range2

For the second criteria, which range contains the data?

*Let us now target the **Region**, so select that column*

=SUMIFS(D15:D23, B15:B23, "John", C15:C23,

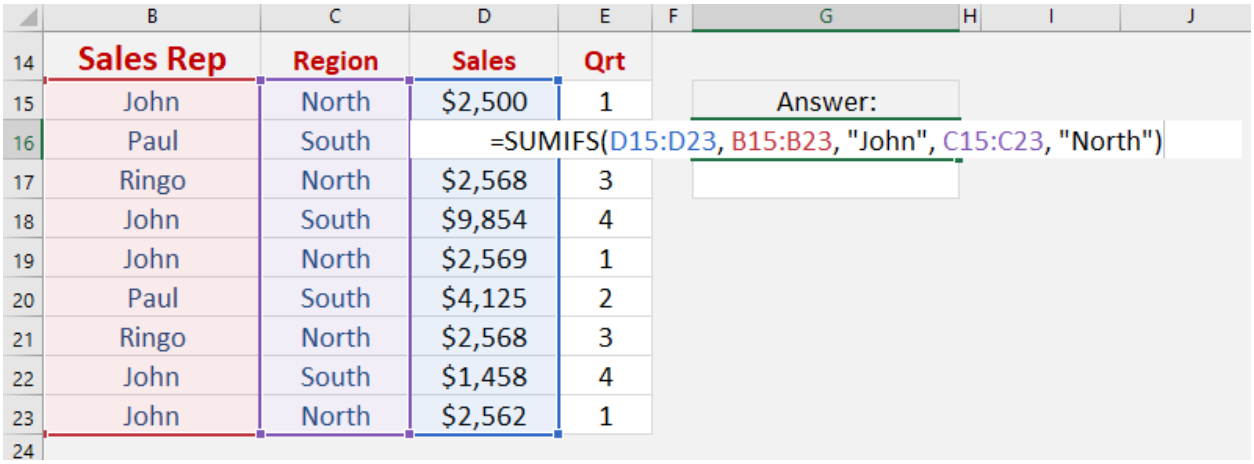


criteria2

What is your filtering criteria?

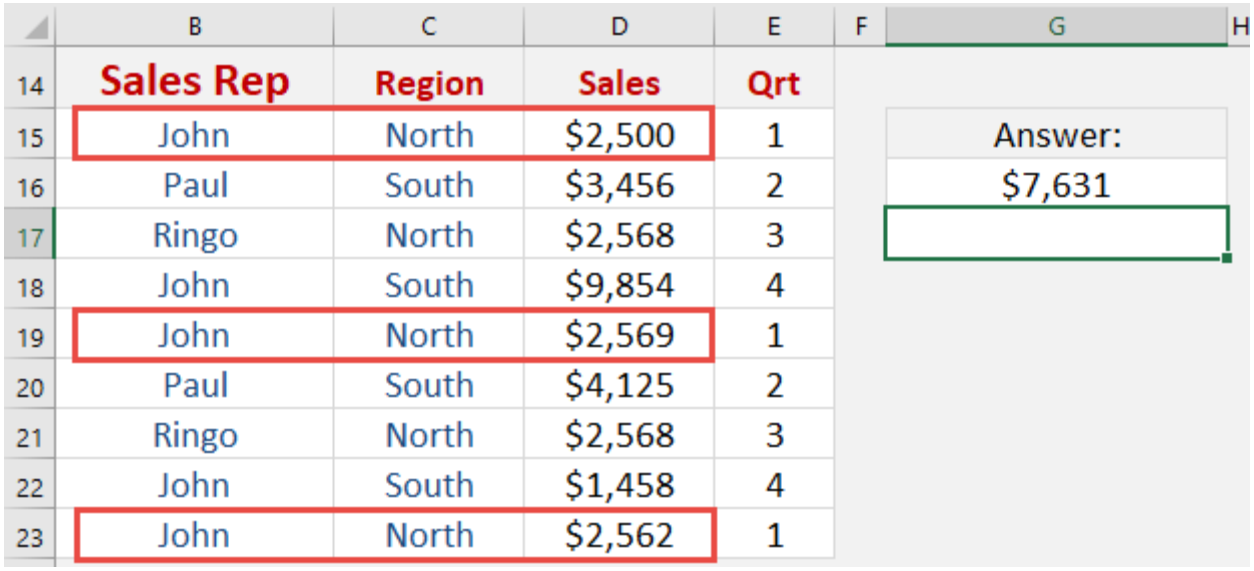
We want to filter for the North Region, so type in "North"

=SUMIFS(D15:D23, B15:B23, "John", C15:C23, "North")



	B	C	D	E	F	G	H	I	J
14	Sales Rep	Region	Sales	Qrt					
15	John	North	$2,500	1		Answer:			
16	Paul	South				=SUMIFS(D15:D23, B15:B23, "John", C15:C23, "North")			
17	Ringo	North	$2,568	3					
18	John	South	$9,854	4					
19	John	North	$2,569	1					
20	Paul	South	$4,125	2					
21	Ringo	North	$2,568	3					
22	John	South	$1,458	4					
23	John	North	$2,562	1					
24									

Just like that, Excel has selectively found the values and summed them together!



	B	C	D	E	F	G	H
14	Sales Rep	Region	Sales	Qrt			
15	John	North	$2,500	1		Answer:	
16	Paul	South	$3,456	2		$7,631	
17	Ringo	North	$2,568	3			
18	John	South	$9,854	4			
19	John	North	$2,569	1			
20	Paul	South	$4,125	2			
21	Ringo	North	$2,568	3			
22	John	South	$1,458	4			
23	John	North	$2,562	1			

COUNTIF

What does it do?

Counts the number of cells that matches your specified condition

Formula breakdown:

=COUNTIF(range, criteria)

What it means:

=COUNTIF(range of cells to check, condition to check against)

Example:

=COUNTIF(A9:A12, ">2") = 3

i.e. There are 3 cells that are greater than 2

Exercise Workbook:

DOWNLOAD EXCEL WORKBOOK

Do you have a scenario where you want to count the number of cells that **match a specific condition?**

I'm sure you do! There is a simple way to count this with Excel's **COUNTIF formula!**

The **COUNTIF formula** is very flexible indeed, so let us try to count the following from our Excel worksheet:

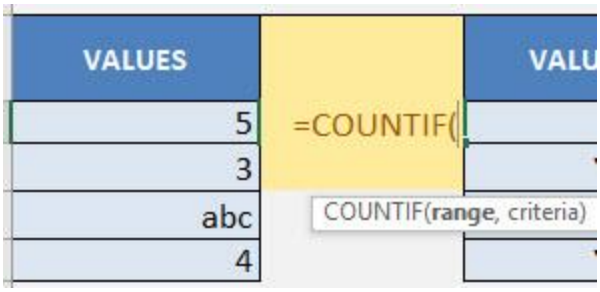
- Number of cells **greater than 2**
- Number of cells that have a **Yellow** value
- Number of cells that **start with the letter "J"**

VALUES	GREATER THAN 2	VALUES	YELLOW VALUES	VALUES	STARTS WITH LETTER J
5		Blue		John	
3		Yellow		Jenny	
abc		Red		Michael	
4		Yellow		Jones	

I explain how you can do this below:

STEP 1: We need to **enter the *COUNTIF* function in a blank cell**:

=COUNTIF(

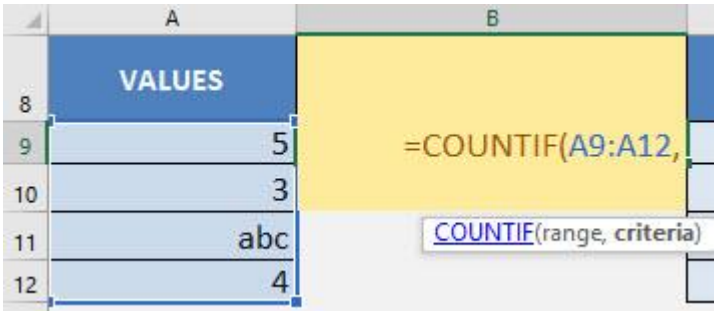


STEP 2: The **COUNTIF** arguments:

range

What are the range of values that you want to check your condition against?

=COUNTIF(A9:A12,

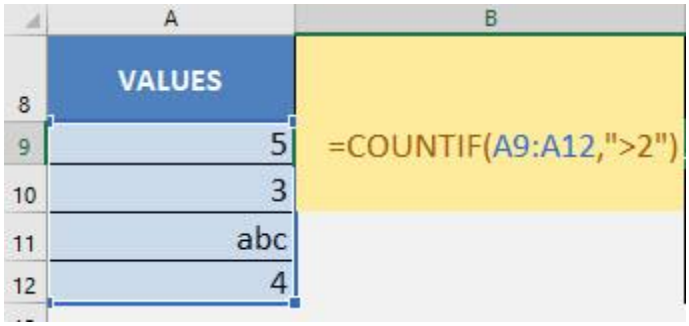


criteria

What is the condition that you want to check against?

For our 1st example, we want to count the number of values greater than 2.

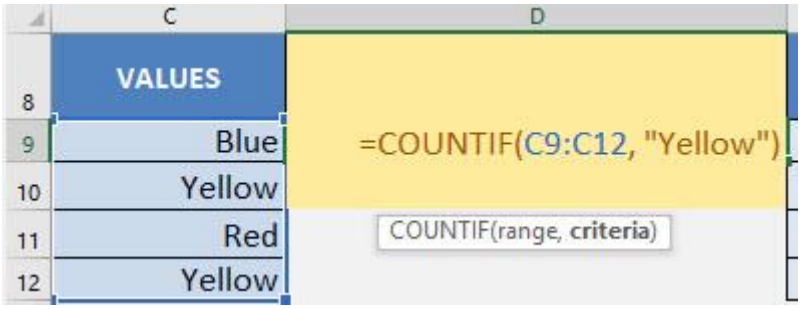
=COUNTIF(A9:A12, ">2")



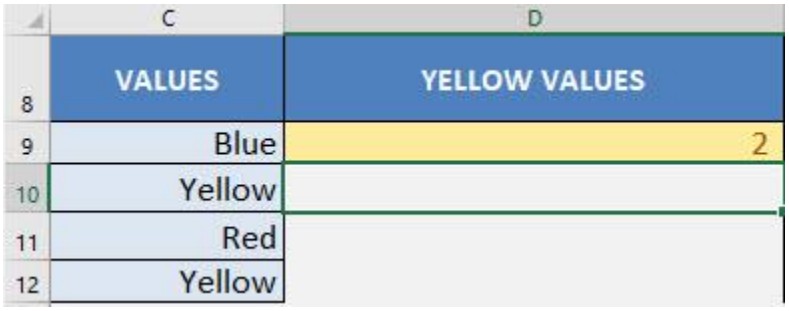
You now have your count of numbers greater than 2!

STEP 3: Now let us try for counting the number of Yellow values:

=COUNTIF(C9:C12, "Yellow")



You now have your count of values that have the Yellow text!

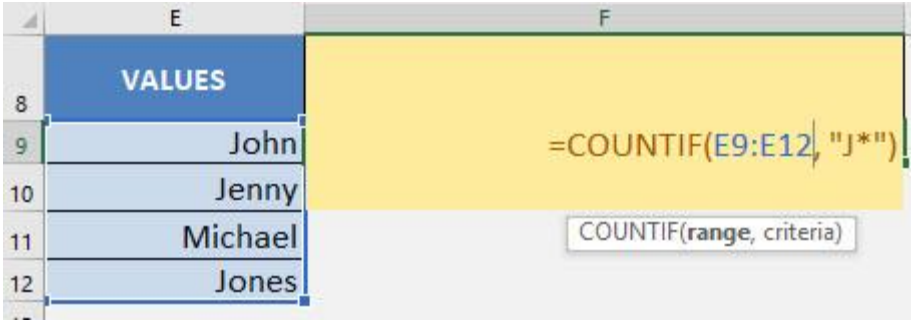


STEP 4: Now let us try for counting the number of names **starting with the Letter J**:

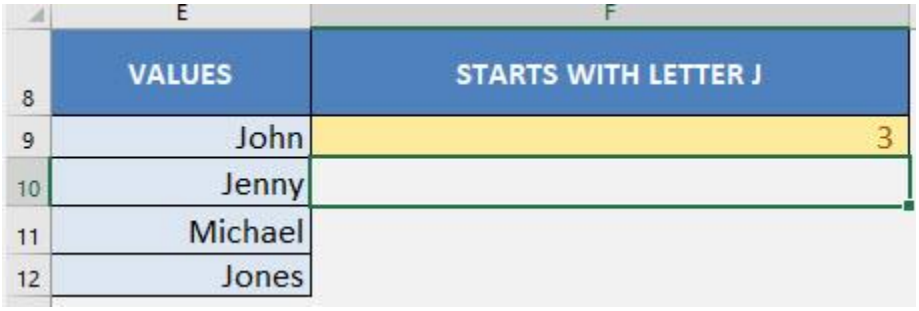
Let us use the wildcard expression **J***

***** signifies a wildcard character i.e. Return any value that **begins with a J**

=COUNTIF(E9:E12, "J*")



You now have your count of values that have a starting letter of J!



	E	F
8	VALUES	STARTS WITH LETTER J
9	John	3
10	Jenny	
11	Michael	
12	Jones	

COUNTIFS

What does it do?

Counts the number of cells that matches multiple conditions

Formula breakdown:

=COUNTIFS(range1, criteria1, [range2], [criteria2], ...)

What it means:

=COUNTIFS(range of cells to check1, condition to check against1, [range of cells to check2], [condition to check against2], ...)

Example:

=COUNTIFS(A9:A13, "John", C9:C13, ">10000") = 2

i.e. The number of times John got more than $10,000 in sales

Exercise Workbook:

DOWNLOAD EXCEL WORKBOOK

Do you have a scenario where you want to count the number of cells that **match specific conditions?**

I'm sure you do! There is a simple way to count this with Excel's **COUNTIFS formula!**

This is very similar to the CountIf Formula! The only difference is it allows you to add even more conditions as needed...That's POWEFUL!

The **COUNTIFS formula** is very flexible indeed, so let us try to count the following from our Excel worksheet:

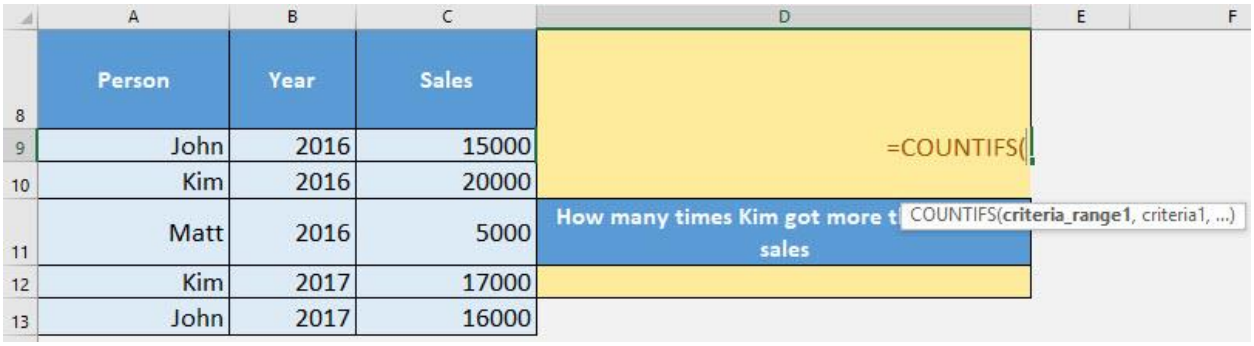
- Number of times **John got more than 10,000 sales**
- Number of times **Kim got more than 18,000 sales**

Person	Year	Sales	How many times John got more than 10,000 sales
John	2016	15000	
Kim	2016	20000	
Matt	2016	5000	How many times Kim got more than 18,000 sales
Kim	2017	17000	
John	2017	16000	

STEP 1: Let us target the first question: ***How many times John got more than 10,000 sales?***

We need to **enter the *COUNTIFS* function in a blank cell**:

=COUNTIFS(



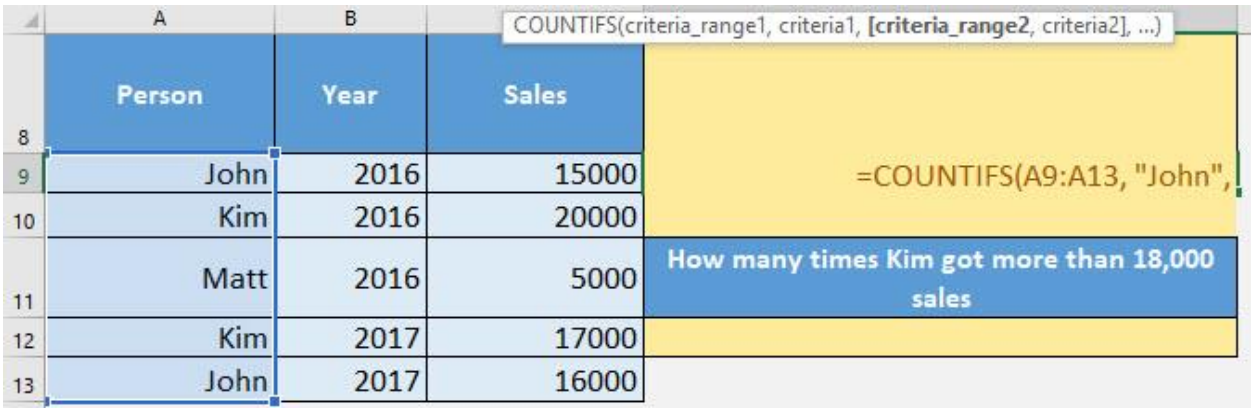
STEP 2: The COUNTIFS arguments:

range1, criteria1

What is our first condition?

We want to find the names that match "John"

=COUNTIFS(A9:A13, "John",

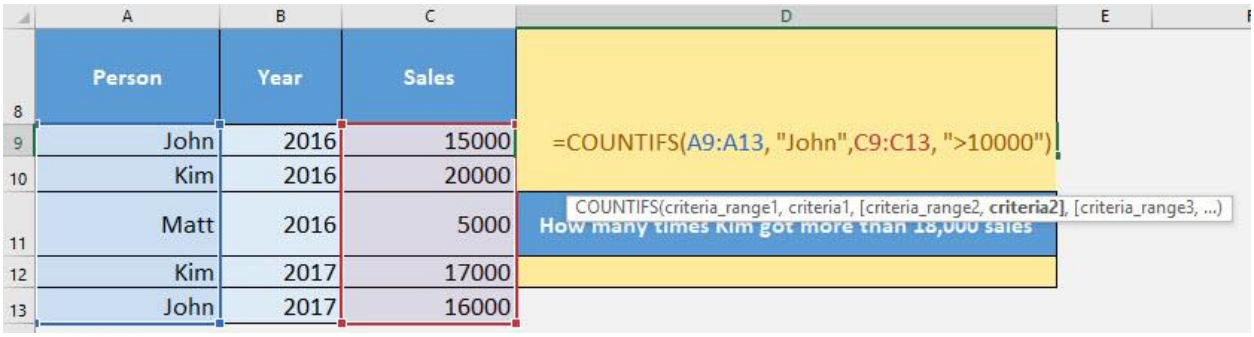


range2, criteria2

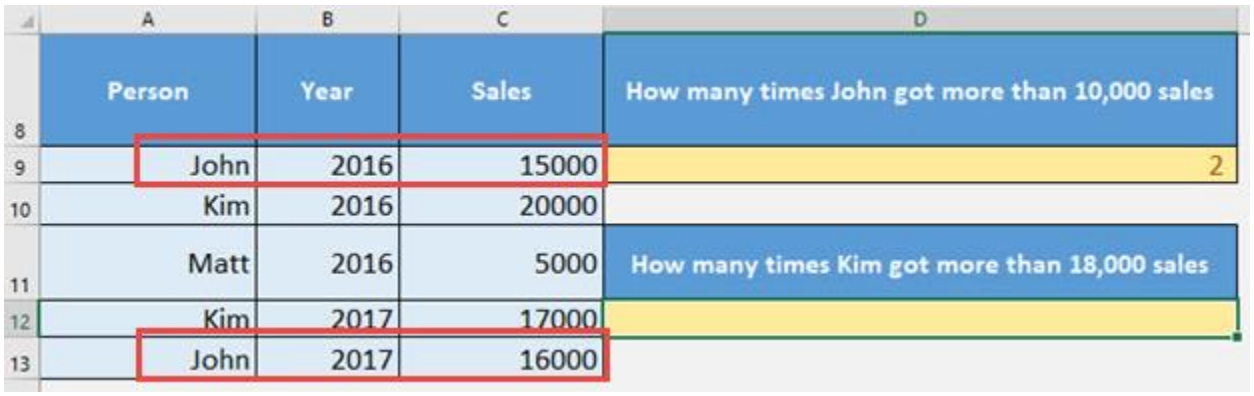
What is our second condition?

We want to find sales that are more than 10,000

=COUNTIFS(A9:A13, "John", C9:C13, ">10000")



You now have your count of 2!



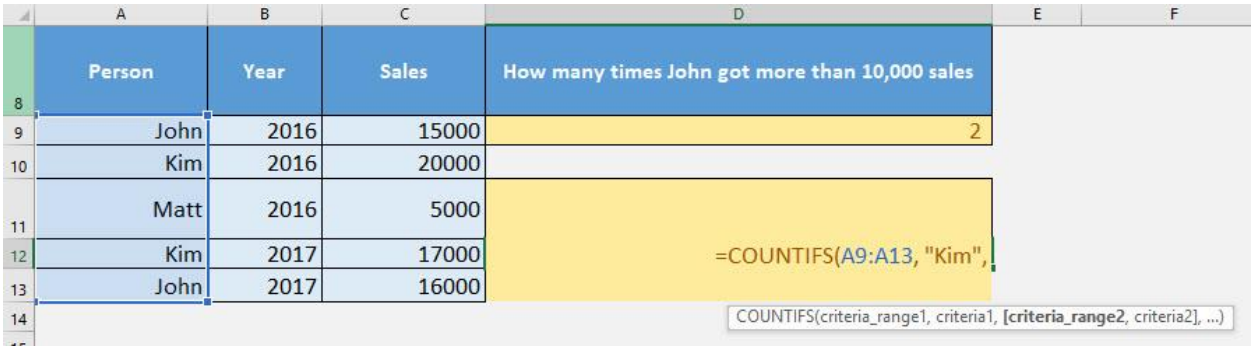
STEP 3: Now let us try doing the same for Kim!

range1, criteria1

What is our first condition?

We want to find the names that match "Kim"

=COUNTIFS(A9:A13, "Kim",

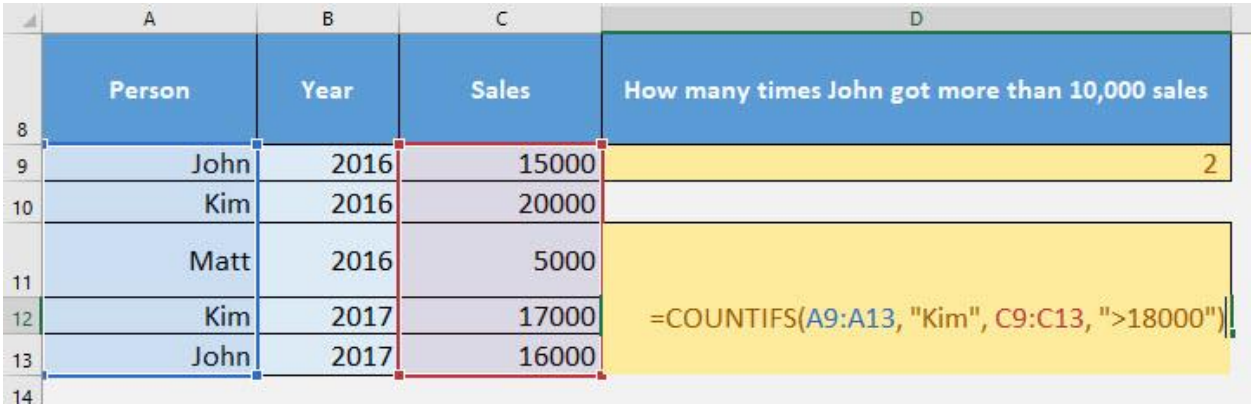


range2, criteria2

What is our second condition?

We want to find the sales that are more than 18,000

=COUNTIFS(A9:A13, "Kim", C9:C13, ">18000")



	A	B	C	D
8	Person	Year	Sales	How many times John got more than 10,000 sales
9	John	2016	15000	2
10	Kim	2016	20000	
11	Matt	2016	5000	
12	Kim	2017	17000	=COUNTIFS(A9:A13, "Kim", C9:C13, ">18000")
13	John	2017	16000	
14				

You now have your count of 1!

	A	B	C	D
8	Person	Year	Sales	How many times John got more than 10,000 sales
9	John	2016	15000	2
10	Kim	2016	20000	
11	Matt	2016	5000	How many times Kim got more than 18,000 sales
12	Kim	2017	17000	1
13	John	2017	16000	

You can have more than 2 conditions in the COUNTIFS formula, so go crazy with the COUNTIFS!

TEXT FORMULA

CONCATENATE

What does it do?

Joins two or more text strings into one string. The item can be a text value, number, or cell reference.

Formula breakdown:

=CONCATENATE(text1, [text2], [text3], ...)

What it means:

=CONCATENATE(the first text, the second text, and so on...)

Example:

=CONCATENATE("Hello", " ", "World") = “Hello World”

Exercise Workbook:

DOWNLOAD EXCEL WORKBOOK

Excel's CONCATENATE functions joins two or more text strings into one string. The item can be a text value, number, or cell reference.

If you add a double quotation with a space in between " " then this will add a space between the texts selected on either side.

You can also add a line break in between each text string. This is done by entering the CHAR(10) function in between each text string/argument. You will then need to select WRAP TEXT in order to see each text on a separate line.

See how easy this is to implement this by using employee data on the example below.

STEP 1: We need to enter the CONCATENATE function in a blank cell:

=CONCATENATE(

	A	B	C	D	E
11	SALES REPRESENTATIVE	EMAIL	DEPARTMENT	PHONE EXTENSION	CONCATENATE
12	Homer Simpson	hs@email.com	MARKETING	3456	=CONCATENATE(
13	Ian Wright	iw@email.com	SALES	2566	
14	John Michaloudis	jm@email.com	FINANCE	2642	
15	Michael Jackson	mj@email.com	SHIPPING	3455	
16					
17					
18					
19					

STEP 2: The CONCATENATE arguments:

text1, [text2], [text3], ...

Which text do you want to join together?

Let us select all the columns:

=CONCATENATE(A12, B12, C12, D12)

	A	B	C	D	E
11	SALES REPRESENTATIVE	EMAIL	DEPARTMENT	PHONE EXTENSION	CONCATENATE
12	Homer Simpson	hs@email.com	MARKETING	3456	=CONCATENATE(A12,B12,C12,D12)
13	Ian Wright	iw@email.com	SALES	2566	
14	John Michaloudis	jm@email.com	FINANCE	2642	
15	Michael Jackson	mj@email.com	SHIPPING	3455	
16					
17					
18					

Now let's add the function CHAR(10) *to add a line break between each text*

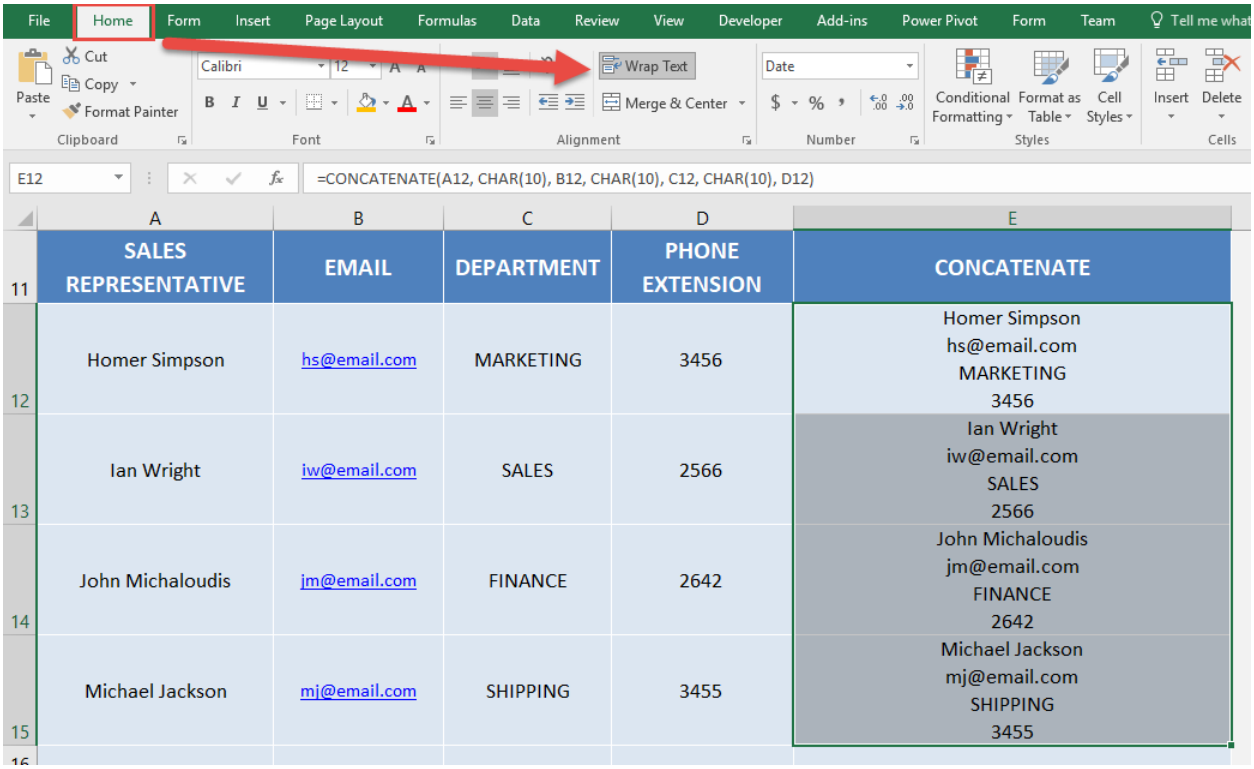
=CONCATENATE(A12, CHAR(10), B12, CHAR(10), C12, CHAR(10), D12)

	A	B	C	D	E	F
11	SALES REPRESENTATIVE	EMAIL	DEPARTMENT	PHONE EXTENSION	CONCATENATE	
12	Homer Simpson	hs@email.com	MARKETING		=CONCATENATE(A12, CHAR(10), B12, CHAR(10), C12, CHAR(10), D12)	
13	Ian Wright	iw@email.com	SALES	2566		
14	John Michaloudis	jm@email.com	FINANCE	2642		
15	Michael Jackson	mj@email.com	SHIPPING	3455		
16						
17						
18						

Apply the same formula to the rest of the cells by dragging the lower right corner downwards.

	A	B	C	D	E
11	SALES REPRESENTATIVE	EMAIL	DEPARTMENT	PHONE EXTENSION	CONCATENATE
12	Homer Simpson	hs@email.com	MARKETING	3456	Homer Simpsonhs@email.comMARKETING3456
13	Ian Wright	iw@email.com	SALES	2566	Ian Wrightiw@email.comSALES2566
14	John Michaloudis	jm@email.com	FINANCE	2642	John Michaloudisjm@email.comFINANCE2642
15	Michael Jackson	mj@email.com	SHIPPING	3455	Michael Jacksonmj@email.comSHIPPING3455
16					
17					
18					
19					

STEP 3: Go to *Home > Alignment > Wrap Text* to show the text in multiple lines and you now have all of results!



	A	B	C	D	E
11	SALES REPRESENTATIVE	EMAIL	DEPARTMENT	PHONE EXTENSION	CONCATENATE
12	Homer Simpson	hs@email.com	MARKETING	3456	Homer Simpson hs@email.com MARKETING 3456
13	Ian Wright	iw@email.com	SALES	2566	Ian Wright iw@email.com SALES 2566
14	John Michaloudis	jm@email.com	FINANCE	2642	John Michaloudis jm@email.com FINANCE 2642
15	Michael Jackson	mj@email.com	SHIPPING	3455	Michael Jackson mj@email.com SHIPPING 3455
16					

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Thank You!

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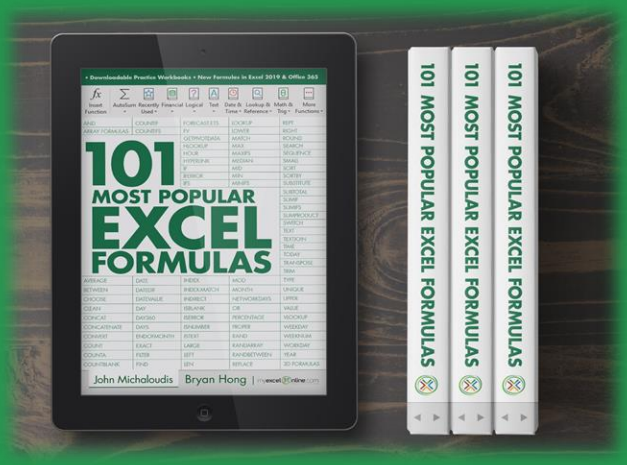

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John Michaloudis

Chief Inspirational Officer

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