

Nesting IF Statements

By Dick Evans

IF is the logical function in Excel and one most users find hard to grasp. Microsoft has a good deal of help available within Excel and you should take a look at it. The syntax is as follows. If you do not have a grasp of a single level IF, read the White Paper called The IF Function before continuing.

IF(logical_test,value_if_true,value_if_false)

A nested IF is necessary when more than one condition exists. For example, in the following worksheet, we need to flag all companies located in CT and having sales in excess of \$50,000 for a special sales promotion we are running.

	A	B	C	D	E	F	G	H
1	First	Last	Company	Address	City	State	Zip	Sales
2	Leslie	Abkowitz	First Signature Bk Trust	190 Commerce Way	Portsmouth	NH	03801	162.00
3	George	Adams	State Mutual	440 Lincoln St	Worcester	MA	01605	98,211.00
4	Linda	Adams	Krass & Jacobson	100 Farmington Ave	Hartford	CT	06105	33,940.00
5	Todd	Adolph	General Electric Capital Corp	3003 Summer St 3rd Fl	Stamford	CT	06904	84,933.00

First, we add an assumption area to the bottom left of the worksheet and place the two assumptions in accessible cells—cells we can point to in our formula.

20	Kerry	Anderson	Schnerberger
21	Marsha	Anderson	Stop & Shop Co
22			
23	Assumptions:		
24	State	CT	
25	Amount	50,000.00	

Add a column to the right of Sales called Flag

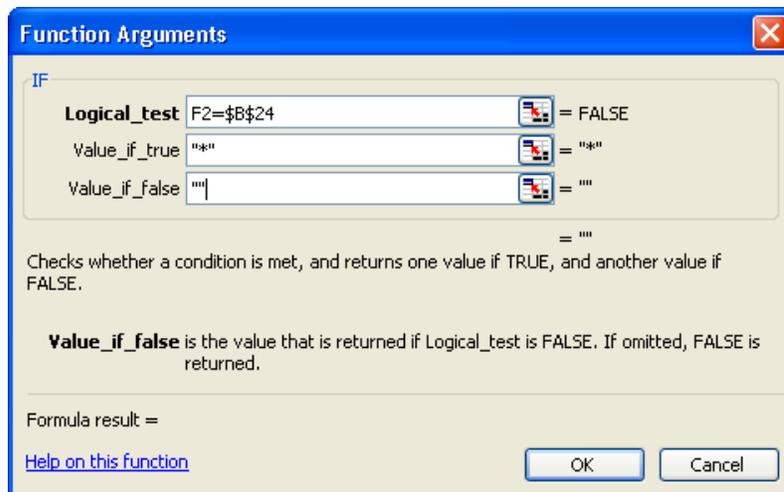
	A	B	C	D	E	F	G	H	I
1	First	Last	Company	Address	City	State	Zip	Sales	Flag
2	Leslie	Abkowitz	First Signature Bk Trust	190 Commerce Way	Portsmouth	NH	03801	162.00	
3	George	Adams	State Mutual	440 Lincoln St	Worcester	MA	01605	98,211.00	
4	Linda	Adams	Krass & Jacobson	100 Farmington Ave	Hartford	CT	06105	33,940.00	

If the sales are in excess of “Amount” and the state code is “State”, we will display an asterisk, otherwise we will have the cell show as empty

Using what we know about the IF function, we create a simple if to flag all CT records

=IF (F2=\$B\$24 , "*" , "")

Note the use of absolute cell reference to the assumption. Recall that this is so we can use the fill handle and copy the formulas down through all the rows and continue to point to the correct assumption cell.



This works fine, but flags both over and under the \$50,000 values. We have to add another level of testing to the IF statement.

	A	B	C	D	E	F	G	H	
1	First	Last	Company	Address	City	State	Zip	Sales	Flag
2	Leslie	Abkowicz	First Signature Bk Trust	190 Commerce Way	Portsmouth	NH	03801	162.00	
3	George	Adams	State Mutual	440 Lincoln St	Worcester	MA	01605	98,211.00	
4	Linda	Adams	Krass & Jacobson	100 Farmington Ave	Hartford	CT	06105	33,940.00	*
5	Todd	Adolph	General Electric Capital Corp	3003 Summer St 3rd Fl	Stamford	CT	06904	84,933.00	*

There are two ways to add the second level:

Method 1 is to insert a second IF statement as the TRUE value for the first IF. To accomplish this, we replace the "*" the following"

IF (H2>\$B\$25 , "*" , "")

If we "read" the new statement, it says "if the state code is equal to CT, then if the amount is greater than 50000, then display an *, else display a null character"

The entire statement looks like this (note the extra () used in the second IF)

=IF (F2=\$B\$24 , (IF (H2>\$B\$25 , "*" , "")) , "")

	A	B	C	D	E	F	G	H	
1	First	Last	Company	Address	City	State	Zip	Sales	Flag
2	Leslie	Abkowicz	First Signature Bk Trust	190 Commerce Way	Portsmouth	NH	03801	162.00	
3	George	Adams	State Mutual	440 Lincoln St	Worcester	MA	01605	98,211.00	
4	Linda	Adams	Krass & Jacobson	100 Farmington Ave	Hartford	CT	06105	33,940.00	
5	Todd	Adolph	General Electric Capital Corp	3003 Summer St 3rd Fl	Stamford	CT	06904	84,933.00	*

The only rows flagged are the ones matching both criteria

Method 2 uses AND

Instead of nesting another IF as part of the TRUE (or FALSE) parameter, we include more than one logical test

=IF (AND (F2=\$B\$24 , H2>\$B\$25) , "*" , "")

Read this as “if the state code is equal to CT and the amount is greater than 50000, then display an asterisk, else display a null character

All parameters in the AND must be true for the IF to report the TRUE value of asterisk.

The OR function can be used if any of the OR parameters are true. In other words if either the state is CT or the amount is greater than 50000, report TRUE

The results in the worksheet are the same

	A	B	C	D	E	F	G	H	I
1	First	Last	Company	Address	City	State	Zip	Sales	Flag
2	Leslie	Abkowicz	First Signature Bk Trust	190 Commerce Way	Portsmouth	NH	03801	162.00	
3	George	Adams	State Mutual	440 Lincoln St	Worcester	MA	01605	98,211.00	
4	Linda	Adams	Krass & Jacobson	100 Farmington Ave	Hartford	CT	06105	33,940.00	
5	Todd	Adolph	General Electric Capital Corp	3003 Summer St 3rd Fl	Stamford	CT	06904	84,933.00	*