



IF

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If you're ready to take your Excel skills up a notch, IF is a great function to start with. The IF function has three parts:

1. A logical test. Excel evaluates the results of this test to determine whether the result is true or false.
2. What should Excel do if the logical test is true?
3. What should Excel do if the logical test is false?

The Test

Excel calls the first part of the IF function a logical test. "Logical test" means that Excel will evaluate this part of the formula to determine whether the statement is true or false. For example, the logical test might be $A5 > 30$. If cell A5 is greater than 30, the test will be true, otherwise the test will be false. The test is flexible, so, for instance, you can change $>$ into $>=$ and make the test $A5 >= 30$ so that if A5 is 30, the statement will evaluate to true.

You aren't just limited to numbers in your test. Text-based tests work as well, and the only thing you need to remember is to put the text in quotes. For example, if a patient's primary insurance is stored in cell B10 and you want to test if that value is *Medicare*, the test would be $B10 = "Medicare"$. In this case, if cell B10 is *Medicare*, the test will be true. If cell B10 is *Medicare Advantage*, the test will be false because Excel is looking for an exact match.

Another thing you can do to make your tests more powerful and flexible is to include a function inside your test. If you have reimbursement for the last ten claims for a CPT code in cells C6 through C15, you can check to see if the average reimbursement is over \$100 with a test like this: $AVERAGE(C6:C15) > 100$. If you want to test if a CPT code in cell H3 is an E&M code, regardless of specialty, you may be able to simply check if the first two digits of the CPT code are 99. That test looks like this: $LEFT(H3,2) = "99"$. Notice that the 99 is in quotes since the LEFT function returns text, not numbers. Putting functions inside of other functions to make more complex formulas is called "nesting functions."

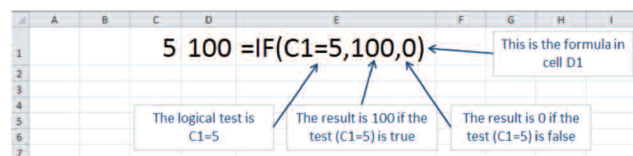
True and False

Once Excel evaluates your test, its next step is to determine what to do if the test is true and what to do if the test is false. You can enter a number as the result of a test. For example, in a bonus calculation, if the employee meets the criteria in the test section of the IF function, the bonus might be 500. If not, the bonus might be 200 or 0.

If you would rather have text in the cell as a result of the IF function instead of numbers, remember to put the text in quotes. If you're testing to see if a CPT code is an E&M code and you want the cell to show E&M if the test is true, you'll need to put "E&M" in quotes or Excel will unsuccessfully try to find an Excel function called E&M and your formula will result in an error.

You can even put another Excel function in the true or false sections of the IF function. For example, if x is true, then sum one set of numbers. If x is false, then sum a different set of numbers. This is another example of nesting functions.

FIGURE 1



Putting it All Together

Once you have designed your test and decided what to do if the test is true and what to do if the test is false, you are ready to put everything together in an IF function. The syntax of the function is

$=IF(\text{logical_test}, \text{true}, \text{false})$

Notice IF, like all Excel functions, begins with an equal sign, followed by the name of the function (IF), followed by a left parenthesis. Like other Excel functions, the parts of the IF function are separated with commas. Enter the logical test, followed by a comma, followed by what to do if the test is true, followed by a comma, followed by what to do if the test is false.

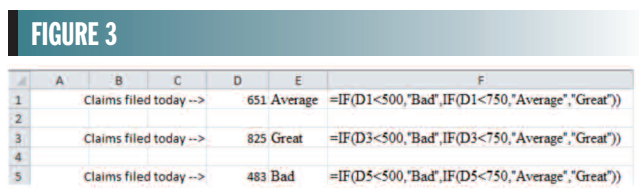
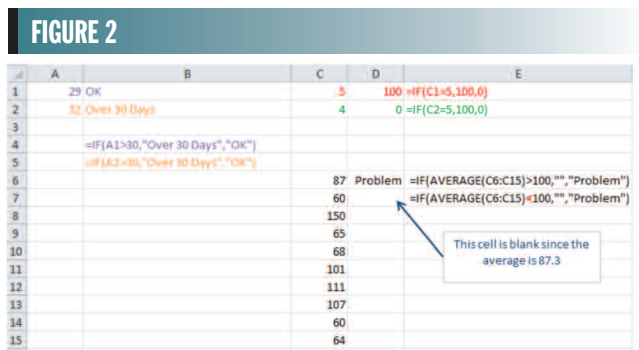
(IF continued)

Finish the function with a right parenthesis.

Here are some examples of IF statements:

```
=IF(C1=5,100,0)
=IF(A1>30,"Over 30 Days","OK")
=IF(AVERAGE(C6:C15)>100,"","Problem")
```

Note in the last example that if the average is greater than 100, the double quotes simply leaves the cell blank. You'll only see a result in this formula if the average is less than 100.



Nesting Functions

The IF statement allows you to choose between two results, true and false. What if you need a third result instead of just true and false? Once you're familiar with IF, try nesting multiple IF functions inside each other. For example, to evaluate a team in your billing department, you might say that for this team filing less than 500 claims is a bad day, between 500 and 750 claims is an average day, and anything over 750 claims is a great day. You can't get one IF function to calculate *Bad*, *Average*, and *Great* since IF can only give you two results. You can, however, combine two IF statements to solve this problem. Assuming the number of claims filed is stored in cell D1, the formula is =IF(D1<500,"Bad",IF(D1<750,"Average","Great")).

Next Steps

Try using the IF function the next time you build a spreadsheet. You might find it helpful to watch my Excel Video 146 (available for free at kelapro.com/videos.php). Once you're familiar with IF, watch Excel Video 147 to see more examples of using

nested functions with IF statements. Finally, if you have a suggestion for a future *Billing* column, send your ideas to hbma@kelapro.com.

Conclusion

If you practice using IF, you'll find any number of applications in your everyday spreadsheets. The more you use IF, the easier it will be to remember the syntax and the structure to get IF to work for you. Excel can quickly and accurately make complex calculations, and by using IF, you can take advantage of Excel's strengths, freeing up your time to do things that Excel is not as good at. Things like relaxing with your family and friends. ■

Nate Moore, CPA, MBA, CMPE speaks, consults, records, and writes about Microsoft Excel and data mining in medical practices throughout the country. His Excel Videos have been viewed over 40,000 times. Nate's latest project is KelaPro, a software program that automatically downloads critical practice data into Excel to create dashboards, reports, and analytic tools.

➔ Suggestions?

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