University of Information Technology and Communications

Businesses Informatics College / Department of Informatics Systems Management

Principles of Accounting
Lecture 6

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NESTED IF FUNCTION

Occasionally a single IF statement may not be enough to give you the results you are looking for. The traditional example of this is taking the student example a little further. In the figure below, Column D is the normal IF function done in the last exercise which finds out whether the student has passed or failed. Column E, however, is asking what grade the student is to receive based on the following table:

A = 17-20

B = 14-16

C = 11-13

D = 8-10

E = 7 or below

	Surname	Christian	Score	Pass/Fail	Grade
1	IF Function & Nested IF State				
2	Use the IF function to calculate the answers required.				
3					
4					
5	Surname	Christian	Score	Pass/Fail	Grade
6	Richards	Julia	15	Pass	
7	Smith	Gavin	7	Fail	
8	Brown	Allan	4	Fail	
9	Perkins	Gysell	19	Pass	
10	Broadhurst	Penelope	16	Pass	
11	Jenkins	Harry	13	Pass	
12	Hobby	Margaret	9	Fail	
13	Thiele	Karen	11	Pass	

The normal IF Function will not give you the required result. You need more than one IF function to complete the job – you can do this with a NESTED IF FUNCTION i.e. more than one IF Function, one inside the other (you are allowed up to 7 nested functions). Put in simple terms, our nested IF statement is going to be:

First IF statement:

Logical test – see if C6 is a value of 7 or below (C6<=7)

If true – Give an "E" grade

If false – see IF C6 is a value of 10 or below to work out whether this student should have a "D" grade – this will lead to the second IF statement

Second IF statement:

Logical test - see if C6 is a value of 10 or below (C6<=10)

If true - Give a "D" grade

If false - see IF C6 is a value of 13 or below to work out whether they should get a "C" grade – this leads to the third IF statement

Third IF statement:

Logical test - see if C6 is a value of 13 or below (C6<=13)

If true - Give a "C" grade

If false - see IF C6 is a value of 16 or below to work out whether they should get a "B" grade – this leads to the fourth (and last) IF statement
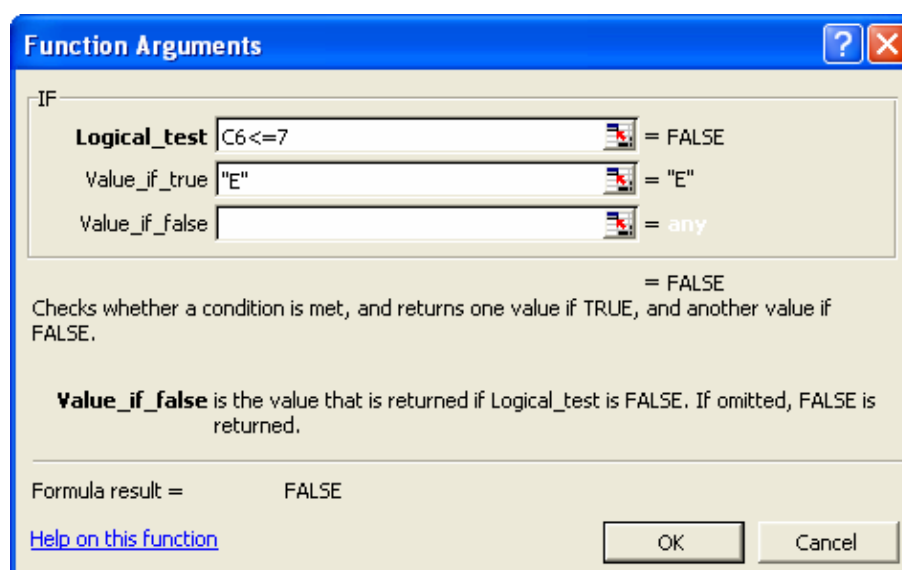
Fourth IF statement:

Logical test - see if C6 is a value of 16 or below (C6<=16)

If true - Give a "B" grade

If false - it must be true that C6 is between 17 and 20 as there are no other possible marks left. Therefore, "A" should be entered here to indicate the top grade possible.

Each statement above has a logical test, then a value_if_true, then a value_if_false. The step by step instructions, using the FUNCTION ARGUMENT dialog box and the scenario about a student's grades as an example are:

1. Ensure your cursor is in Cell **E6**. Call up the IF FUNCTION ARGUMENT dialog box.

2. Put in the first logical test (point and click on Cell C6 then type **<=7**) and the Value_if_true result (the student would get an **"E"** if true).

Function Arguments dialog box:

IF

Logical_test	C6<=7	= FALSE
Value_if_true	"E"	= "E"
Value_if_false		= any

= FALSE

Checks whether a condition is met, and returns one value if TRUE, and another value if FALSE.

Value_if_false is the value that is returned if Logical_test is FALSE. If omitted, FALSE is returned.

Formula result =   FALSE

Help on this function   OK   Cancel

3. Make sure your cursor is in the "Value_if_false dialog box. Now click on the IF function in the name box to bring up a brand new FUNCTION ARGUMENTS dialog box.
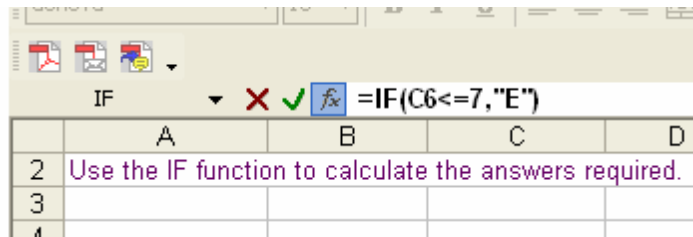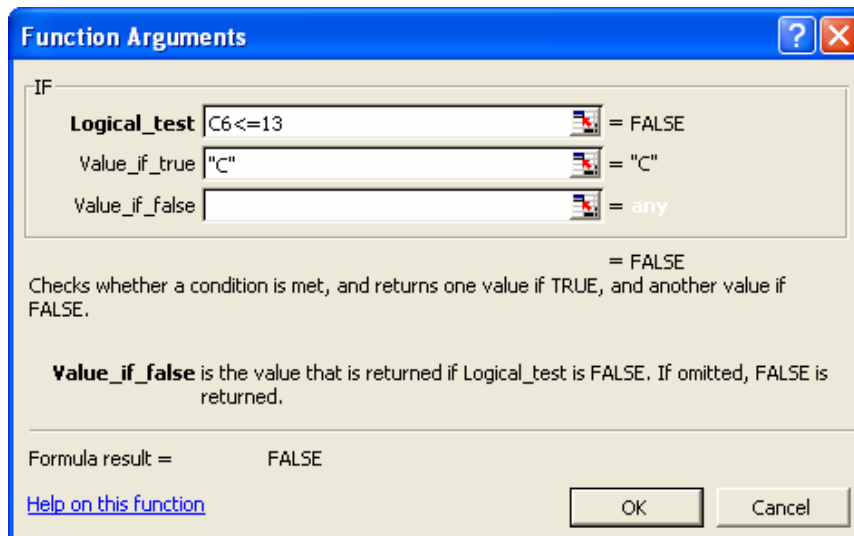

4. In the new FUNCTION ARGUMENTS dialog box, type in the next argument, and the Value_if_true result (see if the student has a mark of 10 or less, and if so give them a "D").
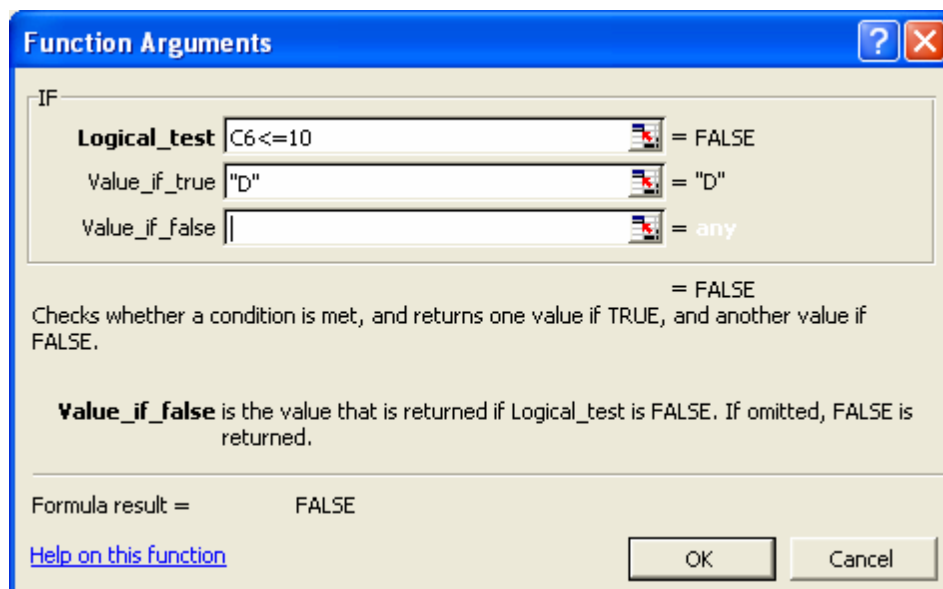

5. Repeat Step 3

6. Repeat Step 4 but this time the logical test is to see if the student has a mark of 13 or less. If it is TRUE, they will get a "C"

7. Repeat Step 3 to bring up a final FUNCTION ARGUMENTS dialog box. This is the only tricky part, knowing when to stop asking for more new arguments. Here the final logical test is entered (C6<=16). Notice that the result of this argument is TRUE. The Value_if_true is a mark of B. The value_if_false must therefore be someone who has more than 16 marks and gets an "A".
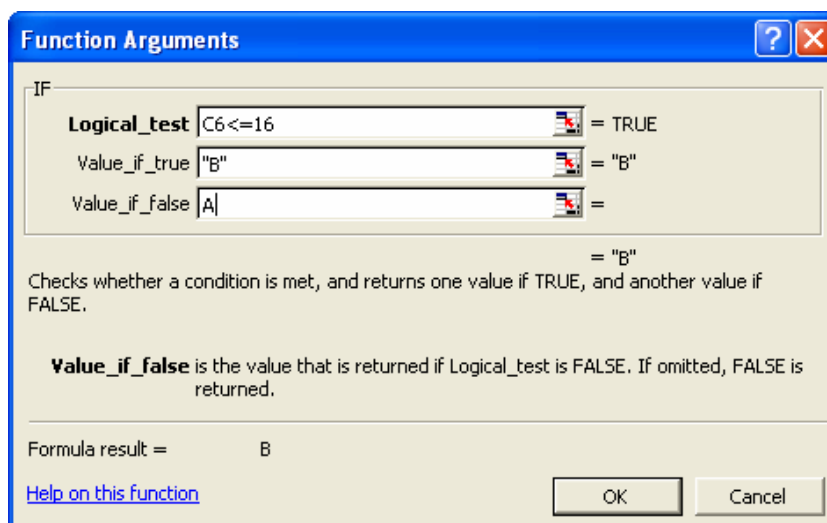
8. Click on OK to finish the function. If filling several cells with this formula, use the FILL HANDLE to drag down to the other cells. If you were to manually type the above formula, it would look like:

=IF(C6<=7,"E",IF(C6<=10,"D",IF(C6<=13,"C",IF(C6<=16,"B","A"))))

As you can see it looks a little complex, just remember that you must have the right amount of parenthesis in the right order, and commas separating the arguments. Usually this sort of formula is easier to create using the FUNCTION ARGUMENTS dialog boxes.