

The IF function in Excel: Syntax and specific examples of the IF function.

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The IF function in Excel is a fundamental Excel function widely used in Excel spreadsheets for statistical analysis. The IF function checks a condition and returns a value if the condition is met, or a different value if the condition is not met. This article will guide you on how to use the IF function in Excel.

1. The IF function formula in Excel

The IF function in Excel has the following syntax:

IF (logical_test, [value_if_true], [value_if_false]).

In there:

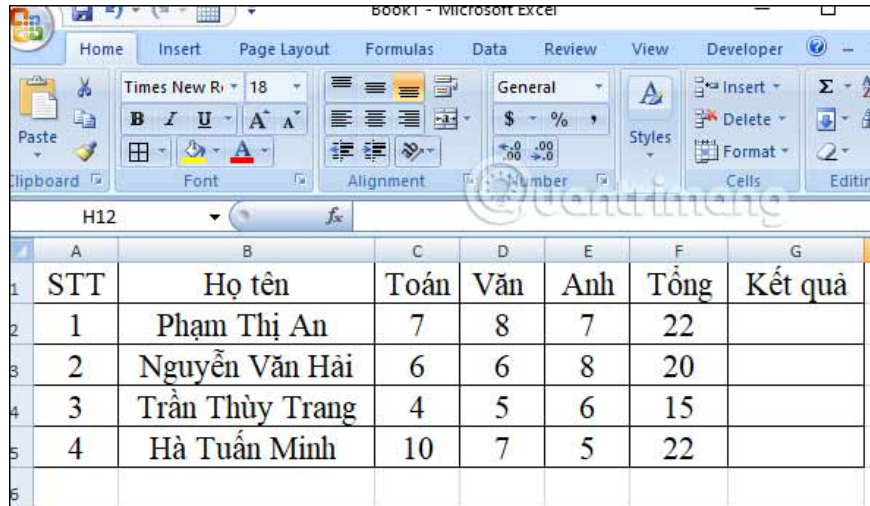
1. Logical_test: Conditional expression.
2. Value if true: The value returned if the condition is true.
3. Value if false: The value returned if the condition is false.

Notes on the IF function in Excel:

1. If value_if_true is omitted in the IF formula, the IF function will return 0 if the primary condition is met.
2. If value_if_false is omitted, the IF function will return FALSE.
3. If you want Excel formulas to display logical values ??like TRUE or FALSE when a certain condition is met, you must type TRUE in the value_if_true parameter box. The value_if_false box can be filled with FALSE or left blank.

2. Examples of using the IF function in Excel

We will work with the student's score sheet below, showing the total score for 3 subjects, and require entering the pass or fail result according to each condition.



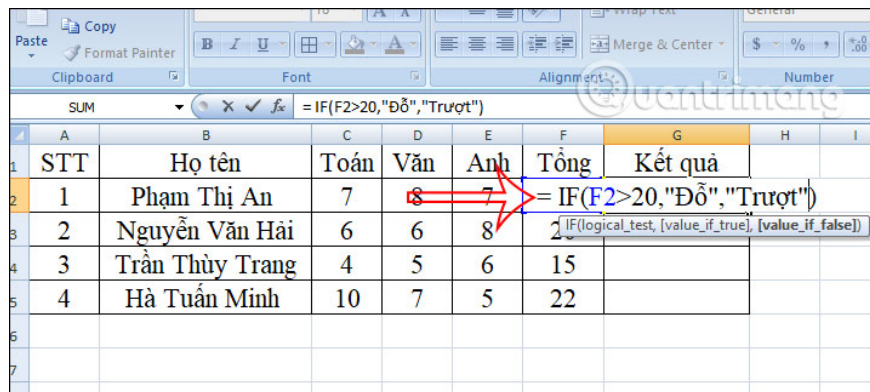
STT	Họ tên	Toán	Văn	Anh	Tổng	Kết quả
1	Phạm Thị An	7	8	7	22	
2	Nguyễn Văn Hải	6	6	8	20	
3	Trần Thùy Trang	4	5	6	15	
4	Hà Tuấn Minh	10	7	5	22	

2.1. Basic IF function

Example 1:

According to this table, **students who achieve a total score of 20 points or more in the three major subjects will pass; students who score below 20 points will fail.**

We will have the formula **=If(F2>20,'Pass','Fail')** and then press Enter to display the result.



STT	Họ tên	Toán	Văn	Anh	Tổng	Kết quả
1	Phạm Thị An	7	8	7	22	
2	Nguyễn Văn Hải	6	6	8	20	
3	Trần Thùy Trang	4	5	6	15	
4	Hà Tuấn Minh	10	7	5	22	

At this point, you will see the result box displaying "Pass". We just need to fill the result from the first box into the remaining boxes.

	A	B	C	D	E	F	G
1	STT	Họ tên	Toán	Văn	Anh	Tổng	Kết quả
2	1	Phạm Thị An	7	8	7	22	Đỗ
3	2	Nguyễn Văn Hải	6	6	8	20	Trượt
4	3	Trần Thùy Trang	4	5	6	15	Trượt
5	4	Hà Tuấn Minh	10	7	5	22	Đỗ
6							

Example 2:

Also in the statistics table, **if the student's total score is greater than 15 points and no score is below 0 points, then the result is classified as passing** .

We enter the formula below and then press the Enter button to execute it.

= If (And (F2>15 ,C2>0 ,D2>0 ,E2>0) , '??' , 'Tr??t ')

	A	B	C	D	E	F	G
1	STT	Họ tên	Toán	Văn	Anh	Tổng	Kết quả
2	1	Phạm Thị An	7	8	7	22	=IF(AND(F2>
3	2	Nguyễn Văn Hải	6	6	8	20	15,C2<>0,
4	3	Trần Thùy Trang	4	5	6	15	D2<>0,E2<>
5	4	Hà Tuấn Minh	10	7	5	22	0),\"Đỗ\",
6							\"Trượt\")
7							
8							

Immediately afterwards, you will see the result displayed in the cell where you entered the formula. We just need to drag the first result cell down to the remaining cells to fill in the pass or miss.

	A	B	C	D	E	F	G
1	STT	Họ tên	Toán	Văn	Anh	Tổng	Kết quả
2	1	Phạm Thị An	7	8	7	22	Đỗ
3	2	Nguyễn Văn Hải	6	6	8	20	Đỗ
4	3	Trần Thùy Trang	4	5	6	15	Trượt
5	4	Hà Tuấn Minh	10	7	5	22	Đỗ
6							
7							

2.2 Nested IF Functions

Example 1: IF & AND functions in Excel

Nested IF functions, or combined AND functions, are used when you need to consider multiple conditions simultaneously to get a result. In such cases, you need to combine multiple IF functions within a single formula.

In the data table below, we will **classify students** based on their average scores in three subjects, with the following conditions:

1. A GPA of 8.5 or higher will result in an excellent academic performance.
2. If the average grade is greater than or equal to 6.5 and less than 8.5, the student is considered to have a "good" academic performance.
3. If the average grade is greater than or equal to 5 and less than 6.5, the student is classified as having average academic performance.
4. Otherwise, if the average grade is less than 5, the student is considered to have poor academic performance.

	A	B	C	D	E	F
1	Họ tên	Toán	Văn	Anh	Điểm TB	Xếp loại
2	Phạm Thị An	7	8	7	7.33	
3	Nguyễn Văn Hải	6	6	8	6.67	
4	Trần Thùy Trang	4	5	6	5	
5	Hà Tuấn Minh	10	7	5	7.33	
6						
7						

We will have the formula as shown below, then press Enter.

`=IF(E2>=8.5,"Giỏi",IF(AND(E2>=6.5,E2<8.5),"Khá",IF(AND(E2>=5,E2<6.5),"Trung bình","Yếu")))`

	A	B	C	D	E	F
1	Họ tên	Toán	Văn	Anh	Điểm TB	Xếp loại
2	Phạm Thị An	7	8	7		=IF(E2>=8.5,"Giỏi",IF(AND(E2>=6.5,E2<8.5),"Khá",IF(AND(E2>=5,E2<6.5),"Trung bình","Yếu")))
3	Nguyễn Văn Hải	6	6	8		
4	Trần Thùy Trang	4	5	6		
5	Hà Tuấn Minh	10	7	5		
6						
7						

You will immediately receive the ranking results. We just need to drag the first result cell down to the remaining cells.

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	A	B	C	D	E	F
1	Họ tên	Toán	Văn	Anh	Điểm TB	Xếp loại
2	Phạm Thị An	7	8	7	7.33	Khá
3	Nguyễn Văn Hải	6	6	8	6.67	Khá
4	Trần Thùy Trang	4	5	6	5	Trung bình
5	Hà Tuấn Minh	10	7	5	7.33	Khá
6						
7						

Example 2: IF & OR functions in Excel

We have the example table below with two columns showing student scores and a **pass or fail rating based on whether the student's score 1 is greater than or equal to 20 or score 2 is equal to or greater than 25**.

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	A	B	C	D	E
1	Họ tên	Điểm 1	Điểm 2	Xếp loại	
2	Phạm Thị An	30	29		
3	Nguyễn Văn Hải	15	20		
4	Trần Thùy Trang	25	17		
5	Hà Tuấn Minh	32	35		
6					
7					

We have the formula below, then press Enter.

=IF((OR(B2>=20, C2>=25)), '??', 'Tr??t')

	A	B	C	D	E
1	Họ tên	Điểm 1	Điểm 2	Xếp loại	
2	Phạm Thị An	30	29	=IF((OR(B2>=20, C2>=25)), "Đỗ", "Trượt")	
3	Nguyễn Văn Hải	15	20		
4	Trần Thùy Trang	25	17		
5	Hà Tuấn Minh	32	35		
6					
7					

The result will show you the ranking of the first student, and you just need to scroll down to the box below.

	A	B	C	D	E
1	Họ tên	Điểm 1	Điểm 2	Xếp loại	
2	Phạm Thị An	30	29	Đỗ	
3	Nguyễn Văn Hải	15	20	Trượt	
4	Trần Thùy Trang	25	17	Đỗ	
5	Hà Tuấn Minh	32	35	Đỗ	
6					
7					
8					

Example 3: Combining IF and OR functions in Excel

We have the employee table below with the requirement to fill in different bonus levels. If a **female employee** works in the **Administration or Accounting department**, she will receive a **bonus of 700,000 VND** ; in other cases, the bonus will be **500,000 VND** .

	A	B	C	D	E
1	Họ tên	Phòng	Giới tính	Thưởng	
2	Phạm Thị An	Hành chính	Nữ		
3	Nguyễn Văn Hải	IT	Nam		
4	Trần Thùy Trang	Hành chính	Nữ		
5	Hà Tuấn Minh	IT	Nam		
6	Lý Thúy Diễm	Công đoàn	Nữ		
7	Nguyễn Minh Anh	Kế toán	Nữ		
8	Phạm Tuấn Hải	Kỹ thuật	Nam		
9	Lê Hà Thu	Công đoàn	Nữ		
10					

We will have the formula as shown below, then press Enter.

=If(and(or(B2= 'Hành chính',B2= 'K? toán'), C2= 'N?'), 700,500)

	A	B	C	D	E
1	Họ tên	Phòng	Giới tính	Thưởng	
2	Phạm Thị An	Hành chính	Nữ	=If(and(or(B2= "Hành chính",B2= "Kế toán"), C2= "Nữ"), 700,500)	
3	Nguyễn Văn Hải	IT	Nam		
4	Trần Thùy Trang	Hành chính	Nữ		
5	Hà Tuấn Minh	IT	Nam		
6	Lý Thúy Diễm	Công đoàn	Nữ		
7	Nguyễn Minh Anh	Kế toán	Nữ		
8	Phạm Tuấn Hải	Kỹ thuật	Nam		
9	Lê Hà Thu	Công đoàn	Nữ		
10					

As a result, you will immediately receive the bonus amount for each employee according to the requirements we have outlined.

The screenshot shows the Microsoft Excel interface. The formula bar contains the formula: `=IF(AND(OR(B2= "Hành chính",B2= "Kế toán"), C2=`. The spreadsheet below has the following data:

	A	B	C	D	E
1	Họ tên	Phòng	Giới tính	Thưởng	
2	Phạm Thị An	Hành chính	Nữ	700	
3	Nguyễn Văn Hải	IT	Nam	500	
4	Trần Thùy Trang	Hành chính	Nữ	700	
5	Hà Tuấn Minh	IT	Nam	500	
6	Lý Thúy Diễm	Công đoàn	Nữ	500	
7	Nguyễn Minh Anh	Kế toán	Nữ	700	
8	Phạm Tuấn Hải	Kỹ thuật	Nam	500	
9	Lê Hà Thu	Công đoàn	Nữ	500	
10					

How to fix IF function errors in Microsoft Excel

In some cases, the error you encounter is often due to incorrect use of the IF function, which may originate from the formula or the cell reference.

The first thing you should do is ensure that the function is written correctly, including punctuation. Additionally, problems can also arise from nested functions with IF statements. The key here is to thoroughly understand the function you are using to avoid writing it incorrectly or entering invalid values.

Here are four common mistakes when using the IF function:

Error	Describe
#DIV/0!	Your formula is trying to divide a value by 0.
#VALUE!	You entered the wrong data type into the formula. For example, the formula should contain numbers, but you used text.
#REF!	The cell references or formula cells have been moved. The references in the formulas no longer exist.
#NAME?	You entered the wrong function name in the formula.

You just need to identify where the error is when using **the IF function in Excel**, and you can easily fix it.

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