-> Give me if else and nested if else documentation for excel

Excel IF and Nested IF Functions

In Excel, the **IF** function is a fundamental logical function that checks whether a condition is met and returns one value if **TRUE** and another value if **FALSE**. The structure is simple and powerful for creating dynamic spreadsheets.

IF Function Syntax

The basic syntax for the IF function is:

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

- **logical_test**: This is the condition you want to test. It can be a cell comparison (e.g., A1>100), a text comparison (B2="Yes"), or another function's result.
- **value_if_true**: The action or value to return if the logical_test is true. This can be a number, text (enclosed in quotes), another formula, or a cell reference.
- **value_if_false**: The action or value to return if the logical_test is false. Similar to value_if_true, this can be a number, text, formula, or cell reference.

Example:
If you want to check if a student's score in cell A2 is 75 or higher and display "Pass" or "Fail", you would use the following formula:
=IF(A2>=75, "Pass", "Fail")

Nested IF Functions

A **nested IF** statement is an IF function inside another IF function. This allows you to test for multiple conditions and return different values based on those conditions. Think of it as a series of checks, one after the other. You can nest up to 64 IF functions in a single formula.

Nested IF Syntax

A common structure for a nested IF is:

=IF(condition1, value_if_true1, IF(condition2, value_if_true2, value_if_false2))

This structure tests condition1. If it's TRUE, it returns value_if_true1. If it's FALSE, it moves to the second IF function to test condition2, and so on.

Example:
To assign letter grades based on a student's score, you might use a nested IF function:

- A score of 90 or higher is an "A"
- A score of 80-89 is a "B"
- A score of 70-79 is a "C"
- Anything below 70 is "D"

The formula for this would be:

=IF(A2>=90, "A", IF(A2>=80, "B", IF(A2>=70, "C", "D")))

This formula first checks if the score is 90 or above. If not, it checks if it's 80 or above. If that's also false, it checks for 70, and if all three are false, it defaults to "D".

Note: For more complex scenarios with many conditions, consider using the **IFS** function (available in Excel 2016 and later) which simplifies the process and avoids extensive nesting. The IFS function syntax is =IFS(condition1, value1, [condition2, value2], ...) and is much easier to read and manage.