IF Function in Excel

The IF function is one of the most commonly used functions in Excel. It is used to test a condition and return one value if the condition is true and another value if the condition is false.

Syntax
The syntax of the IF function is as follows:

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

- logical_test: This is the condition that you want to test.
- value_if_true: This is the value that you want to return if the condition is true.
- value_if_false: This is the value that you want to return if the condition is false.

# Examples
1. =IF(A1>10, "Greater than 10", "Less than or equal to 10")
   - logical_test: A1>10
   - Value if true: "Greater than 10"
   - Value if false: "Less than or equal to 10"
2. =IF(B2="Sales", 10%, 5%)
   - logical_test: B2="Sales"
   - Value if true: 10%
   - Value if false: 5%

Using IF with Other Functions
1. =IF(A1>10, SUM(B1:B10), SUM(C1:C10))
   - Condition: A1>10
   - Value if true: SUM(B1:B10)
   - Value if false: SUM(C1:C10)

Using IF with Multiple Conditions
1. =IF(A1>10, "Greater than 10", IF(A1<5, "Less than 5", "Between 5 and 10"))
   - Condition 1: A1>10
   - Value if true: "Greater than 10"
   - Condition 2: A1<5
   - Value if true: "Less than 5"
   - Value if false: "Between 5 and 10"

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Best Practices
1. Use the IF function to test a single condition.
2. Use the IF function with other functions to test multiple conditions.
3. Use the IF function to return a value based on a condition.
4. Avoid using nested IF functions, as they can be difficult to read and maintain.

Common Errors
1. Incorrect syntax: Make sure to use the correct syntax for the IF function.
2. Incorrect condition: Make sure to test the correct condition.
3. Incorrect values: Make sure to return the correct values based on the condition.

Using Logical Functions (IF)

This lesson introduces a very useful function, the IF function. The IF function is a conditional function or logical function because it will evaluate a condition you specify and return one value if the condition is true and another value if the condition is false. For example, you could use the IF function in an invoice to create a formula that would subtract a 5% discount from the invoice if the total was more than $500.00, otherwise it wouldn't subtract anything.

The IF function is one of the more difficult functions, but it's also very powerful.

1. Click the **Insert Function** button on the Formula bar.

   The Insert Function dialog box appears.

2. Click the **Or select a category** list arrow and select **Logical**.

   Functions that fall under this category are shown in the Select a function box.

3. Select **IF** in the Select a function box and click **OK**.

   The Function Arguments dialog box appears.

   💠 **Other Ways to Find a Function:**
   Type the function's name in the Search for a function box. Or, select the function from the Select a function box.

📖 **Exercise**

- **Exercise File:** Functions.xlsx, IF worksheet

- **Exercise:** Determine the Federal Income Tax for these people and enter these arguments for the IF function in cell B17:
  Logical test: B14>=500
  Value_if_true: B14*.15
  Value_if_false: B14*.1

  Copy the IF function from B17 to cells C17:H17.

$$=IF(A5>10,A4*.75,A4)$$
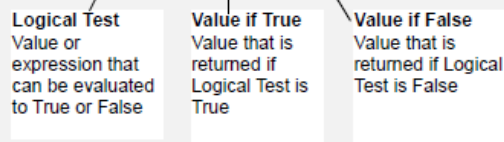
Logical Test
Value or expression that can be evaluated to True or False

Value if True
Value that is returned if Logical Test is True

Value if False
Value that is returned if Logical Test is False

Figure 7-17: The syntax for the IF Function.

You're ready to start entering the IF formula. There are three parts in this formula:

- **Logical Test:** This is this first argument, and it evaluates a statement as true or false.

- **Value if True:** If the statement in the Logical Test is true, then this value is entered.

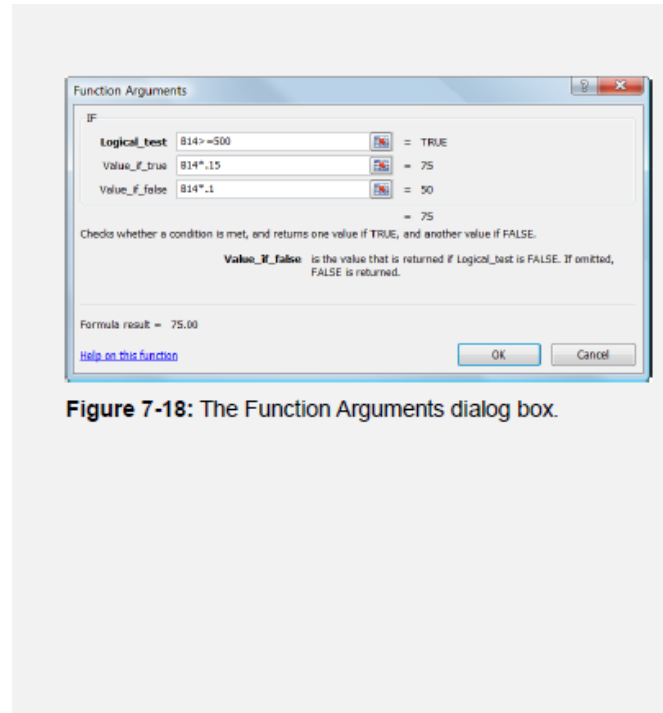- **Value if False:** If the statement in the Logical Test is false, then this value is entered.

i. Enter the arguments for the IF function and click **OK**.

The function is run, and the results appear in the cell.

✅ **Tip:** Remember, you can also create cell references by clicking the cell or cell range you want to reference. Click the Collapse Dialog button to collapse the function palette and select the cell range if the Function Arguments dialog box is in the way.

🔶 **Other Ways to Use the IF Function in a Formula:**
Write the formula using the syntax =IF(logical_test,value_if_true,value_if_false).

Figure 7-18: The Function Arguments dialog box.