INDEX function

The INDEX function returns a value or the reference to a value from within a table or range.

There are two ways to use the INDEX function:

- If you want to return the value of a specified cell or array of cells, see Array form.
- If you want to return a reference to specified cells, see Reference form.

Array form

Description

Returns the value of an element in a table or an array, selected by the row and column number indexes.

Use the array form if the first argument to INDEX is an array constant.

Syntax

INDEX(array, row_num, [column_num])

The INDEX function syntax has the following arguments.

- **Array** Required. A range of cells or an array constant.
  - If array contains only one row or column, the corresponding Row_num or Column_num argument is optional.
  - If array has more than one row and more than one column, and only Row_num or Column_num is used, INDEX returns an array of the entire row or column in array.
- **Row_num** Required. Selects the row in array from which to return a value. If Row_num is omitted, Column_num is required.
- **Column_num** Optional. Selects the column in array from which to return a value. If Column_num is omitted, Row_num is required.

Remarks

- If both the Row_num and Column_num arguments are used, INDEX returns the value in the cell at the intersection of Row_num and Column_num.
- If you set Row_num or Column_num to 0 (zero), INDEX returns the array of values for the entire column or row, respectively. To use values returned as an array, enter the INDEX function as an array formula in a horizontal range of cells for a row, and in a vertical range of cells for a column. To enter an array formula, press CTRL+SHIFT+ENTER.

Note: In Excel Web App, you cannot create array formulas.

- Row_num and Column_num must point to a cell within array; otherwise, INDEX returns the #REF! error value.

Examples

Example 1

These examples use the INDEX function to find the value in the intersecting cell where a row and a column meet.

Copy the example data in the following table, and paste it in cell A1 of a new Excel worksheet. For formulas to show results, select them, press F2, and then press Enter. If you need to, you can adjust the column widths to see all the data.

Data	**Data**	
Apples	Lemons	
Bananas	Pears	
Formula	**Description**	**Result**
=INDEX (A2:B3,2,2)	Value at the intersection of the second row and second column in the range A2:B3.	Pears
=INDEX (A2:B3,2,1)	Value at the intersection of the second row and first column in the range A2:B3.	Bananas

Example 2

This example uses the INDEX function in an array formula to find the values in two cells specified in a 2x2 array.

In this case, select any two vertical cells, like A1:A2, paste the following formula =INDEX({1,2;3,4},0,2) into the first cell, and then press CTRL+SHIFT+ENTER. When entered as an array formula Excel will automatically paste the formula to the second cell.

Formula	Description	Result
=INDEX ({1,2**;**3,4},0,2)	Value found in the first row, second column in the array. The array contains 1 and 2 in the first row and 3 and 4 in the second row.	2
	Value found in the second row, second column in the array (same array as above).	4

Note: This is an array formula and needs to be entered with CTRL+SHIFT+ENTER. Excel will automatically wrap the formula in braces {}. If you try to enter them yourself Excel will display the formula as text. If you don't use CTRL+SHIFT+ENTER then the formula will return a #VALUE! error.

Top of Page

Reference form

Description

Returns the reference of the cell at the intersection of a particular row and column. If the reference is made up of nonadjacent selections, you can pick the selection to look in.

Syntax

INDEX(reference, row_num, [column_num], [area_num])

The INDEX function syntax has the following arguments.

- **Reference** Required. A reference to one or more cell ranges.
  - If you are entering a nonadjacent range for the reference, enclose reference in parentheses.
  - If each area in reference contains only one row or column, the Row_num or Column_num argument, respectively, is optional. For example, for a single row reference, use INDEX(reference,,column_num).
- **Row_num** Required. The number of the row in reference from which to return a reference.
- **Column_num** Optional. The number of the column in reference from which to return a reference.
- **Area_num** Optional. Selects a range in reference from which to return the intersection of Row_num and Column_num. The first area selected or entered is numbered 1, the second is 2, and so on. If Area_num is omitted, INDEX uses area 1. The areas listed here must all be located on one sheet. If you specify areas that are not on the same sheet as each other, it will cause a #VALUE! error. If you need to use ranges that are located on different sheets from each other, it is recommended that you use the array form of the INDEX function, and use another function to calculate the range that makes up the array. For example, you could use the CHOOSE function to calculate which range will be used.

For example, if Reference describes the cells (A1:B4,D1:E4,G1:H4), Area_num 1 is the range A1:B4, Area_num 2 is the range D1:E4, and Area_num 3 is the range G1:H4.

Remarks

- After Reference and Area_num have selected a particular range, Row_num and Column_num select a particular cell: Row_num 1 is the first row in the range, Column_num 1 is the first column, and so on. The reference returned by INDEX is the intersection of Row_num and Column_num.
- If you set Row_num or Column_num to 0 (zero), INDEX returns the reference for the entire column or row, respectively.
- Row_num, Column_num, and Area_num must point to a cell within reference; otherwise, INDEX returns the #REF! error value. If Row_num and Column_num are omitted, INDEX returns the area in reference specified by Area_num.
- The result of the INDEX function is a reference and is interpreted as such by other formulas. Depending on the formula, the return value of INDEX may be used as a reference or as a value. For example, the formula CELL("width",INDEX(A1:B2,1,2)) is equivalent to CELL("width",B1). The CELL function uses the return value of INDEX as a cell reference. On the other hand, a formula such as 2*INDEX(A1:B2,1,2) translates the return value of INDEX into the number in cell B1.

Note: The CELL function is not available in Excel Web App.

Examples

Copy the example data in the following table, and paste it in cell A1 of a new Excel worksheet. For formulas to show results, select them, press F2, and then press Enter. If you need to, you can adjust the column widths to see all the data.

Fruit	Price	Count
Apples	$0.69	40

Fruit	Price	Count
Bananas	$0.34	38
Lemons	$0.55	15
Oranges	$0.25	25
Pears	$0.59	40
Almonds	$2.80	10
Cashews	$3.55	16
Peanuts	$1.25	20
Walnuts	$1.75	12

Formula	Description	Result
=INDEX(A2:C6, 2, 3)	The intersection of the second row and third column in the range A2:C6, which is the contents of cell C3.	38
=INDEX((A1:C6, A8:C11), 2, 2, 2)	The intersection of the second row and second column in the second area of A8:C11, which is the contents of cell B9.	1.25
=SUM(INDEX (A1:C11, 0, 3, 1))	The sum of the third column in the first area of the range A1:C11, which is the sum of C1:C11.	216

Fruit	Price	Count
=SUM(B2:INDEX (A2:C6, 5, 2))	The sum of the range starting at B2, and ending at the intersection of the fifth row and the second column of the range A2:A6, which is the sum of B2:B6.	2.42

Top of Page

See Also

VLOOKUP function

MATCH function

INDIRECT function

Guidelines and examples of array formulas

Lookup and reference functions (reference)

Was this information helpful?

Yes No