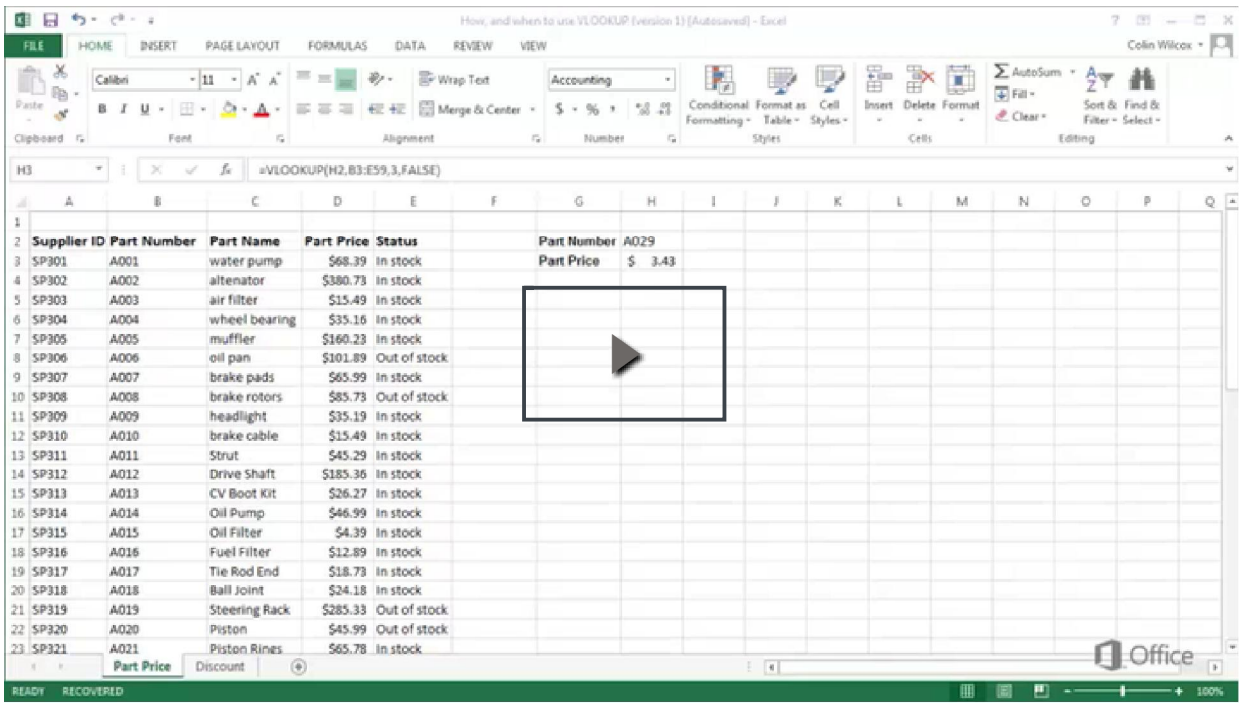
VLOOKUP function

Use VLOOKUP, one of the lookup and reference functions, when you need to find things in a table or a range by row. For example, look up an employee's last name by her employee number, or find her phone number by looking up her last name (just like a telephone book).



This video is part of a training course called VLOOKUP: When and how to use it.

TIP The secret to VLOOKUP is to organize your data so that the value you look up (employee's last name) is to the left of the return value you want to find (employee's phone number).

Syntax

VLOOKUP (lookup_value, table_array, col_index_num, [range_lookup])

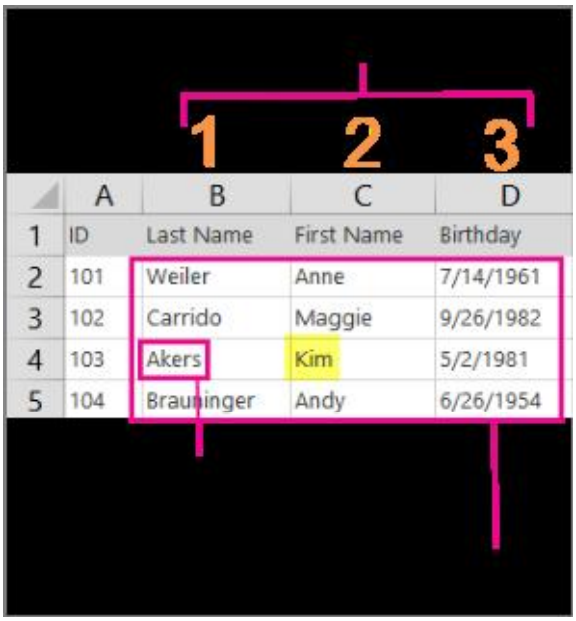
For example:

- =VLOOKUP(105,A2:C7,2,TRUE)
- =VLOOKUP("Fontana",B2:E7,2,FALSE)

Argument name	Description
lookup_value (required)	The value you want to look up. The value you want to look up must be in the first column of the range of cells you specify in ***table-array*** . For example, if ***table-array*** spans cells B2:D7, then your lookup_value must be in column B. See the graphic below. ***Lookup_value*** can be a value or a reference to a cell.
table_array (required)	The range of cells in which the VLOOKUP will search for the ***lookup_value*** and the return value.

Argument name	Description
	The first column in the cell range must contain the ***lookup_value*** (for example, Last Name in the picture below.) The cell range also needs to include the return value (for example, First Name in the graphic below) you want to find. Learn how to select ranges in a worksheet.
col_index_num (required)	The column number (starting with 1 for the left-most column of ***table-array***) that contains the return value.
range_lookup (optional)	A logical value that specifies whether you want **VLOOKUP** to find an exact match or an approximate match: ▪ **TRUE** assumes the first column in the table is sorted either numerically or alphabetically, and will then search for the closest value. This is the default method if you don't specify one. ▪ **FALSE** searches for the exact value in the first column.

The following picture shows how you'd set up your worksheet with =VLOOKUP("Akers",B2:D5,2,FALSE) to return **Kim**



Examples

To use these examples in Excel, copy the data in the table below, and paste it in cell A1 of a new worksheet.

ID	Last name	First name	Title	Birth date
101	Davis	Sara	Sales Rep.	12/8/1968
102	Fontana	Olivier		2/19/1952

			V.P. of Sales	
103	Leal	Karina	Sales Rep.	8/30/1963
104	Patten	Michael	Sales Rep.	9/19/1958
105	Burke	Brian	Sales Mgr.	3/4/1955
106	Sousa	Luis	Sales Rep.	7/2/1963

Formula	Description
=VLOOKUP ("Fontana",B2:E7,2,FALSE)	Looks for the value **Fontana** in the first column (column B) of ***table_array*** B2:E7 and returns the value **Olivier** found in the second column (Column C) of the ***table_array***. The ***range_lookup*** FALSE returns an exact match.
=VLOOKUP(102,A2:C7,2,FALSE)	Searches for an exact match of the last name for ***lookup_value***102 in column A. **Fontana** is returned. If ***lookup_value*** is **105**, **Burke** is returned.
=IF(VLOOKUP(103,A1:E7,2,FALSE) ="Sousa","Located","Not found")	Checks to see if the last name of Employee with ID **103** is **Sousa**. Uses the IF function to return one value if a condition is true and another value if it's false. Because 103 is actually **Leal**, the result is **Not found**. If you change "Sousa" to "Leal" in the formula, the result is **Located**.
=INT(YEARFRAC(DATE(2014,6,30), VLOOKUP(105,A2:E7,5, FALSE), 1))	For the fiscal year **2014**, finds the age of the employee with ID **105**. Uses the YEARFRAC function to subtract the birth date from the fiscal year end date and displays the result **59** as an integer using the INT function.
=IF(ISNA(VLOOKUP (105,A2:E7,2,FALSE)) = TRUE, "Employee not found", VLOOKUP (105,A2:E7,2,FALSE))	If there is an employee with ID **105**, displays the employee's last name, which is **Burke**. Otherwise, displays the message **Employee not found**. The ISNA function (see IS functions) returns a TRUE value when the VLOOKUP function returns the #N/A error value.

=VLOOKUP(104,A2:E7,3,FALSE) & " " & VLOOKUP (104,A2:E7,2,FALSE) & " is a " & VLOOKUP(104,A2:E7,4,FALSE)	For the employee with ID **104**, concatenates (combines) the values of three cells into the complete sentence **Michael Patten is a Sales Rep.**

Common Problems

Problem	What went wrong
Wrong value returned	If ***range_lookup*** is TRUE or left out, the first column needs to be sorted alphabetically or numerically. If the first column isn't sorted, the return value might be something you don't expect. Either sort the first column, or use FALSE for an exact match.
#N/A in cell	▪ If ***range_lookup*** is TRUE, then if the value in the ***lookup_value*** is smaller than the smallest value in the first column of the ***table_array***, you'll get the #N/A error value. ▪ If ***range_lookup*** is FALSE, the #N/A error value indicates that the exact number isn't found. Learn more about errors in worksheets, like #N/A, #REF, and the rest.
#REF! in cell	If ***col_index_num*** is greater than the number of columns in ***table-array***, you'll get the #REF! error value.
#VALUE! in cell	If the ***table_array*** is less than 1, you'll get the #VALUE! error value.
#NAME? in cell	The #NAME? error value usually means that the formula is missing quotes. To look up a person's name, make sure you use quotes around the name in the formula. For example, enter the name as **"Fontana"** in =VLOOKUP("Fontana",B2:E7,2,FALSE).

Best practices

Do this	Why
Use absolute references for ***range_lookup***	Using absolute references allows you to fill-down a formula so that it always looks at the same exact lookup range. Learn how to use absolute cell references.
Don't store number or date values as text.	When searching number or date values, be sure the data in the first column of ***table_array*** isn't stored as text values. Otherwise, VLOOKUP might return an incorrect or unexpected value.
Sort the first column	Sort the first column of the ***table_array*** before using VLOOKUP when ***range_lookup*** is TRUE.
Use wildcard characters	If ***range_lookup*** is FALSE and ***lookup_value*** is text, you can use the wildcard characters—the question mark (?) and asterisk (*)—in ***lookup_value***. A question mark

Do this	Why
	matches any single character. An asterisk matches any sequence of characters. If you want to find an actual question mark or asterisk, type a tilde (~) in front of the character. For example, =VLOOKUP("Fontan?",B2:E7,2,FALSE) will search for all instances of **Fontana** with a last letter that could vary.
Make sure your data doesn't contain erroneous characters.	When searching text values in the first column, make sure the data in the first column doesn't have leading spaces, trailing spaces, inconsistent use of straight (' or ") and curly (‘ or ”) quotation marks, or nonprinting characters. In these cases, VLOOKUP might return an unexpected value. To get accurate results, try using the CLEAN function or the TRIM function to remove trailing spaces after table values in a cell.

Related

- View Quick Reference Card: VLOOKUP refresher for a refresher on best ways to use VLOOKUP to look up data ir tables.
- Learn how to create or change a cell reference.
- Learn how to sort data in a table alphabetically or numerically.
- VLOOKUP is a member of the lookup and reference functions, which includes the HLOOKUP function.
- Use the CLEAN function or the TRIM function to remove leading spaces in table values.
- Use the SUMIF function to sum the values in a range that meet criteria that you specify.
- Learn more about errors in worksheets, like #N/A, #REF, and the rest.
- See a video on how to use the VLOOKUP function.

Was this information helpful? YES NO