How do I use the VLOOKUP function in Excel?

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July 1, 2024

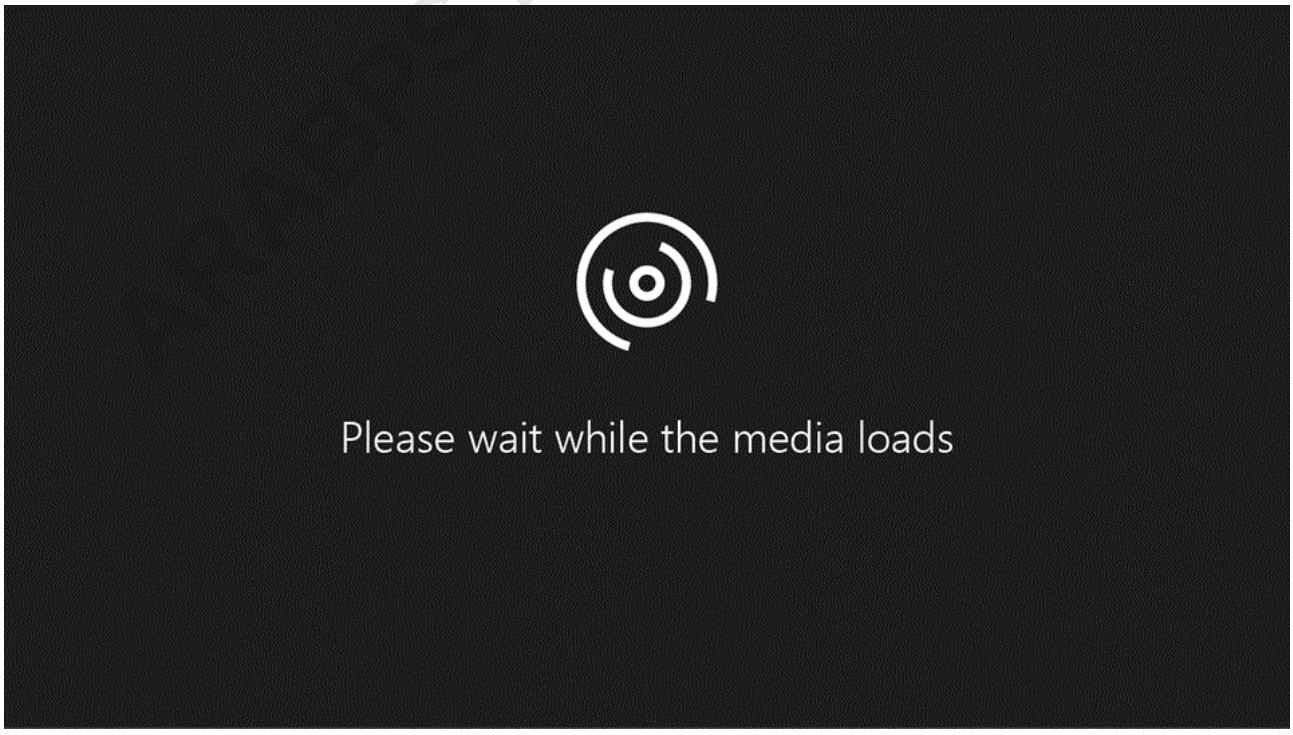
The VLOOKUP function in Excel is a powerful tool that allows users to search for specific data within a table or range of cells. It is commonly used to find and retrieve information from a larger dataset based on a specific value or criteria. To use the VLOOKUP function, the user must first select the cell where they want the result to appear, then enter the function and specify the lookup value, table array, column index number, and whether an exact or approximate match is desired. The function will then search for the value in the designated table and return the corresponding data from the specified column. This can be very useful for organizing and analyzing large amounts of data in a spreadsheet.

Tip: Try using the new XLOOKUP function, an improved version of VLOOKUP that works in any direction and returns exact matches by default, making it easier and more convenient to use than its predecessor.

Use VLOOKUP when you need to find things in a table or a range by row. For example, look up a price of an automotive part by the part number, or find an employee name based on their employee ID.

In its simplest form, the VLOOKUP function says:

=VLOOKUP(What you want to look up, where you want to look for it, the column number in the range containing the value to return, return an Approximate or Exact match - indicated as 1/TRUE, or 0/FALSE).



Tip: The secret to VLOOKUP is to organize your data so that the value you look up (Fruit) is to the left of the return value (Amount) you want to find.

Use the VLOOKUP function to look up a value in a table.

Syntax

VLOOKUP (lookup_value, table_array, col_index_num,)

For example:

=VLOOKUP(A2,A10:C20,2,TRUE)

=VLOOKUP("Fontana",B2:E7,2,FALSE)

=VLOOKUP(A2,'Client Details'!A:F,3,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 the **table_array** argument. For example, if **table-array** spans cells B2:D7, then your lookup_value must be in column B. **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. You can use a named range or a table, and you can use names in the argument instead of cell references. The first column in the cell range must contain the **lookup_value**. The cell range also needs to include the return value 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 approximate or an exact match: **Approximate match - 1/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. For example, =VLOOKUP(90,A1:B100,2,TRUE). **Exact match - 0/FALSE** searches for the exact value in the first column. For example, =VLOOKUP("Smith",A1:B100,2,FALSE).

How to get started

There are four pieces of information that you will need in order to build the VLOOKUP syntax:

The value you want to look up, also called the lookup value.

The range where the lookup value is located. Remember that the lookup value should always be in the first column in the range for VLOOKUP to work correctly. For example, if your lookup value is in cell C2 then your range should start with C.

The column number in the range that contains the return value. For example, if you specify B2:D11 as the range, you should count B as the first column, C as the second, and so on.

Optionally, you can specify TRUE if you want an approximate match or FALSE if you want an exact match of the return value. If you don't specify anything, the default value will always be TRUE or approximate match.

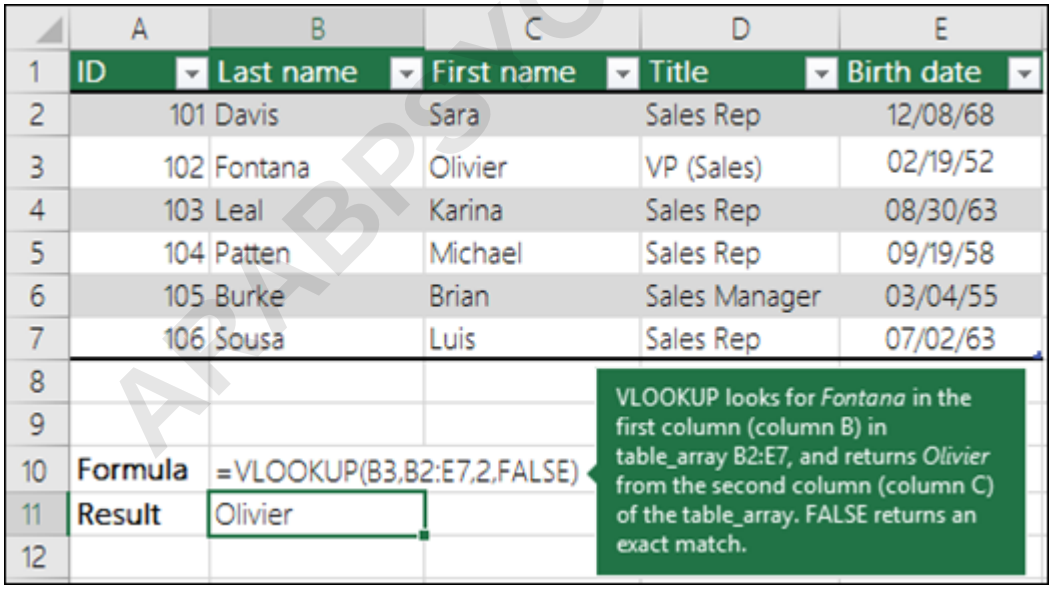
Now put all of the above together as follows:

=VLOOKUP(lookup value, range containing the lookup value, the column number in the range containing the return value, Approximate match (TRUE) or Exact match (FALSE)).

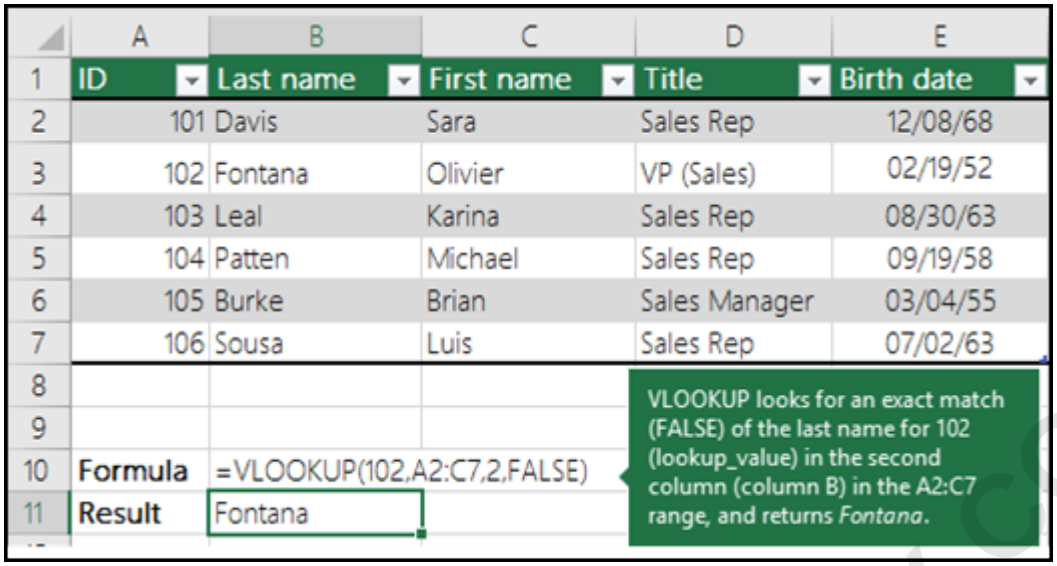
Examples

Here are a few examples of VLOOKUP:

Example 1

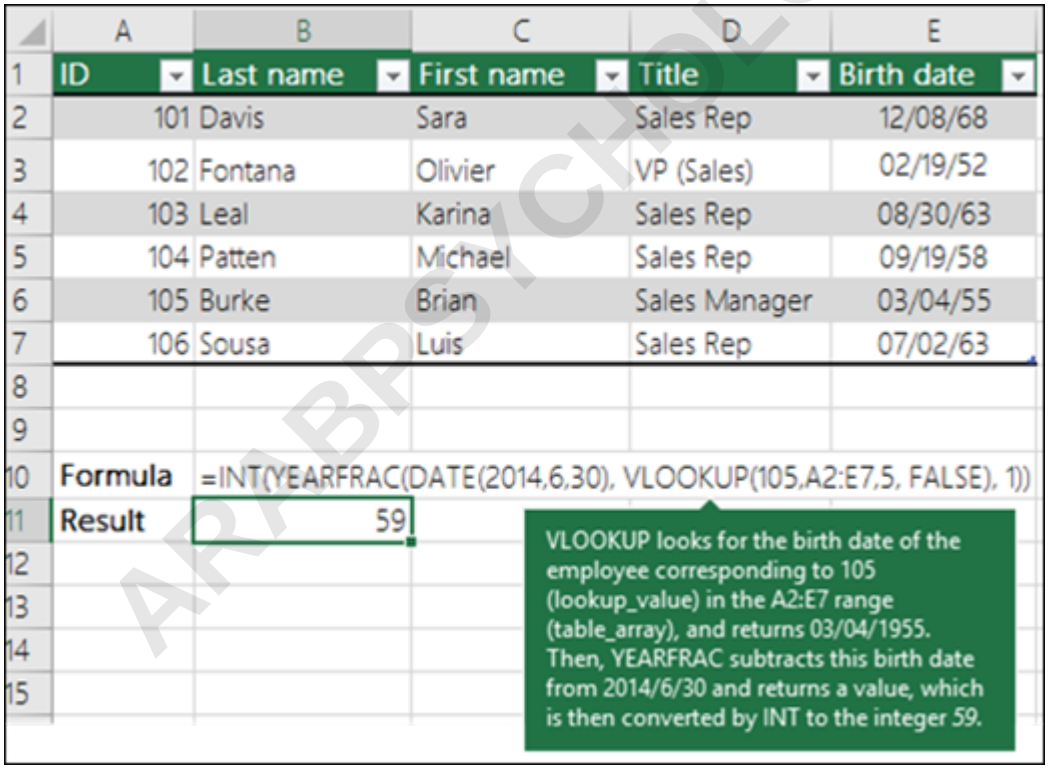


Example 2



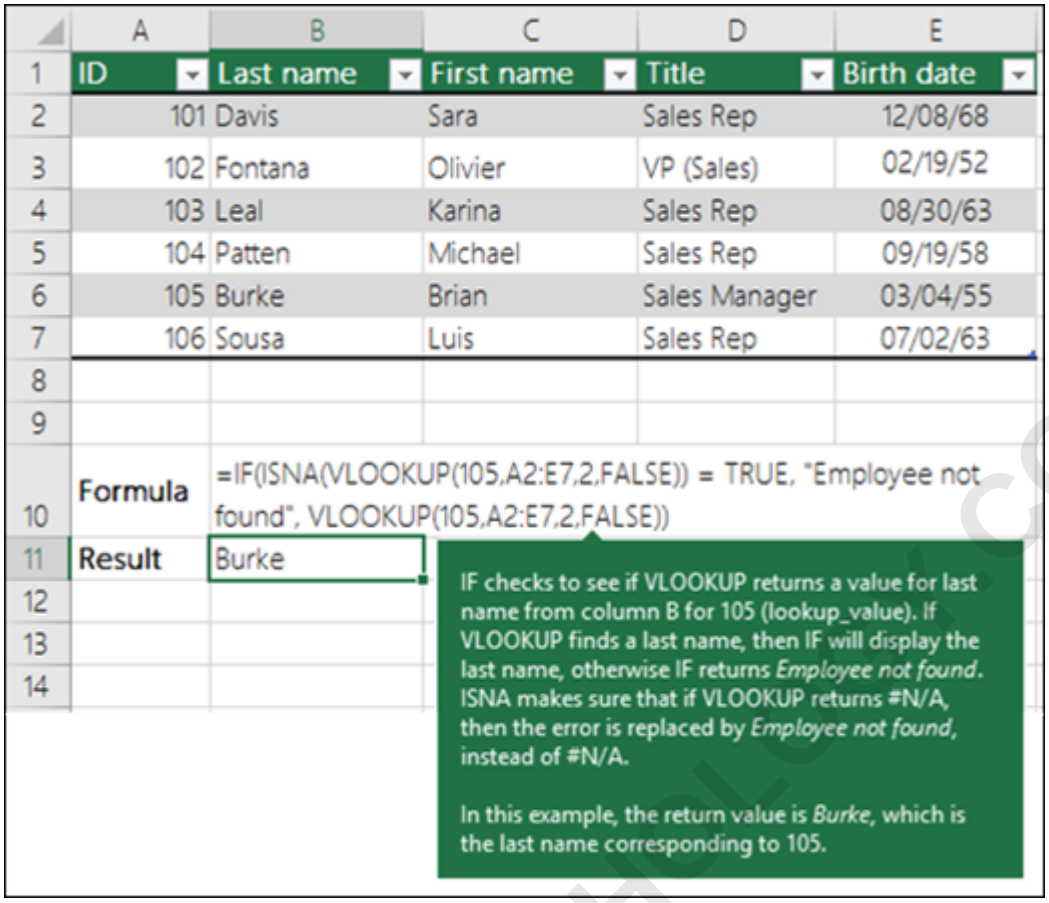
	A	B	C	D	E
1	ID	Last name	First name	Title	Birth date
2	101	Davis	Sara	Sales Rep	12/08/68
3	102	Fontana	Olivier	VP (Sales)	02/19/52
4	103	Leal	Karina	Sales Rep	08/30/63
5	104	Patten	Michael	Sales Rep	09/19/58
6	105	Burke	Brian	Sales Manager	03/04/55
7	106	Sousa	Luis	Sales Rep	07/02/63
8					
9					
10	Formula	=VLOOKUP(102,A2:C7,2,FALSE)			
11	Result	Fontana			

Example 4



	A	B	C	D	E
1	ID	Last name	First name	Title	Birth date
2	101	Davis	Sara	Sales Rep	12/08/68
3	102	Fontana	Olivier	VP (Sales)	02/19/52
4	103	Leal	Karina	Sales Rep	08/30/63
5	104	Patten	Michael	Sales Rep	09/19/58
6	105	Burke	Brian	Sales Manager	03/04/55
7	106	Sousa	Luis	Sales Rep	07/02/63
8					
9					
10	Formula	=INT(YEARFRAC(DATE(2014,6,30), VLOOKUP(105,A2:E7,5, FALSE), 1))			
11	Result	59			
12					
13					
14					
15					

Example 5



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. For more information on resolving #N/A errors in VLOOKUP, see How to correct a #N/A error in the VLOOKUP function.
#REF! in cell	If **col_index_num** is greater than the number of columns in **table-array**, you'll get the #REF! error value. For more information on resolving #REF! errors in VLOOKUP, see How to correct a #REF! error.
#VALUE! in cell	If the **table_array** is less than 1, you'll get the #VALUE! error value. For more information on resolving #VALUE! errors in VLOOKUP, see How to correct a #VALUE! error in the VLOOKUP function.
#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). For more information, see How to correct a #NAME! error.

Problem	What went wrong
#SPILL! in cell	This particular #SPILL! error usually means that your formula is relying on implicit intersection for the lookup value, and using an entire column as a reference. For example, =VLOOKUP(**A:A**,A:C,2,FALSE). You can resolve the issue by anchoring the lookup reference with the @ operator like this: =VLOOKUP(@**A:A**,A:C,2,FALSE). Alternatively, you can use the traditional VLOOKUP method and refer to a single cell instead of an entire column: =VLOOKUP(**A2**,A:C,2,FALSE).

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 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.

Need more help?

You can always ask an expert in the Excel Tech Community or get support in Communities.

See Also

XLOOKUP function

Video: When and how to use VLOOKUP

Quick Reference Card: VLOOKUP refresher

How to correct a #N/A error in the VLOOKUP function

Look up values with VLOOKUP, INDEX, or MATCH

HLOOKUP function