

Excel 2007/10 – LOOKUP function

Excel’s LOOKUP function is used to find specific information that has been stored in a spreadsheet table. Lookup formulas can work vertically, looking for values down a column (VLookup), or they can work horizontally, looking for values across a row (HLookup).

HOW TO USE THE LOOKUP FUNCTION

The first step in using LOOKUP functions in Excel is to make sure the table of data (the table_array) has been created.

Create a LOOKUP Table

In this example the information will be stored vertically, with values down a column. Excel’s VLOOKUP function, which stands for vertical lookup, is used to find specific information that has been stored in a spreadsheet table. We will use an Excel VLookup formula to do a vertical lookup.

1. Create the table of information to be used in the formula. This table can be on the same spreadsheet as the data or on a separate sheet in the workbook.

NOTE: The format of the cells in the table (e.g. General, Number, Text etc.) **must match** the format of the cells in the spreadsheet or the LOOKUP function will not work.

2. Enter headings in the first row.
3. The first column should contain the unique key values on which the lookup will be based. In this example, it is “Account”.
4. If there is other data on the worksheet, leave at least one blank row at the bottom of the table, and one blank column at the right of the table, to separate the lookup table from the other data that will not be used for the Lookup.

Sample of a lookup table

	A	C
1	Account	Campus account Descr
2	101001	General Cash – Cash Clearing
3	101003	Revolving Fund Cash
4	101005	Cash in Transit to State Treasury
5	101006	Cash in Account-Bank S & L
6	101009	Cash on Hand
7	101100	Cash Short Term Investment – Swift
8	101800	Cash – WFB Disbursements Paper
9	101801	Cash – WFB Disbursements Wire
10	101802	Cash at Chancellor’s Office
11	101803	Investments – Other
12	101804	Cash in State Treasury
13	101809	Change Fund Clearing
14	102001	Deposit Surplus Money Invstmnts
15	102003	Investments in Time Deposits
16	103001	Accounts Receivable – Abatements

NOTE: To make it easier to refer to the table, you can name the range. Create Excel names that refer to cells, a range of cells, a constant value, or a formula. After you define the Excel names, you can use those names in formulas, to replace values or cell references. (See section “Name a Range” in this document).

VLookup Formula Specifics

The VLookup formula used in the figure below, =VLOOKUP(A2,'Account Lookup'!A1:E963,3,False) returns the results of what it finds for the Account Name, where the spreadsheet table is on a separate sheet named Account Lookup.

The dollar signs (\$) seen in the formula in the figure below are used in front of the table array column and cell range as an absolute value reference. (see: <http://www.mrexcel.com/articles/relative-and-absolute-formulas.php> for information on Using Absolute & Relative Formula References). Making it an absolute reference is important in this case for copying the formula down the column.

In the figure below, the column **Account Name** was added. A VLookup formula is used to fill in the information which was gathered from a table located on another worksheet named "Account Lookup". This information will be useful when we create a PivotTable, giving additional field information.

	A	B	C	D	E	F	G	H	I	J
1	Account	Account Name	Account Category	Fund	Dept	College	Area	Program	Class	Project
2	607009	Equipment Capital Outlay		32008	99997	Central AcAff		9999		4SCI_REPL_GROUP
3	607809	Cap Outlay Equip Under 5k		32008	99997	Central AcAff		9999		4SCI_REPL_GROUP
4	305002	Fund Balance-Continuing Approp		40901	10046	EOP		1137		
5	602001	Work Study-On Campus		40901	10046	EOP		1137		
6	305002	Fund Balance-Continuing Approp		40901	10049	LIB		9999		

The VLOOKUP function in cell B2 is used to find specific data from the Account Lookup tab, cells A1-E963, in its third column.

Let's break down the formula now to each component to better understand the formula.

The actual formula syntax is written:

=VLOOKUP(lookup_value,table_array,col_index_num,range_lookup)

	A	B	C	D	E	F	G	H	I	J
1	Account	Account Name	Account Category	Fund	Dept	College	Area	Program	Class	Project
2	607009	Equipment Capital Outlay		32008	99997	Central AcAff		9999		4SCI_REPL_GROUP
3	607809	Cap Outlay Equip Under 5k		32008	99997	Central AcAff		9999		4SCI_REPL_GROUP
4	305002	Fund Balance-Continuing Approp		40901	10046	EOP		1137		
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6	305002	Fund Balance-Continuing Approp		40901	10049	LIB		9999		

- **lookup_value**: is the value that is searched for in the first column of the table array. The lookup_value can be a text string, a logical value (TRUE or FALSE only), a number, or a cell reference to a value.

- **table_array:** is the range of data that the function searches to find your information. The table_array must contain at least two columns of data. The first column contains the lookup_values. These values can be text, numbers, or logical values. This argument is a named range or a reference to a range of cells.
 - If you are using a reference to a range of cells, it is a good idea to use an absolute cell reference for the table_array. This is done by preceding the column and the cell reference with a dollar (\$) sign as shown in the figure above.
 - If you don't use an absolute reference and you copy the VLOOKUP function to other cells, there is a good chance you will get error messages in the cells the function is copied to.
- **col_index_num:** For this argument, enter the column number of the table_array from which you want data returned from. For example:
 - if the col_index_num is 1, it returns a value from the first column in table_array;
 - if the col_index_num is 2, it returns a value from the second column in table_array.
- **range_lookup:** A logical value (TRUE or FALSE only) that indicates whether you want VLOOKUP to find an exact or an approximate match to the lookup_value.
 - If **TRUE** or if this argument is omitted, VLOOKUP will use an approximate match if it cannot find an exact match to the lookup_value. If an exact match is not found, VLOOKUP uses the next largest lookup_value.
 - If **FALSE**, VLOOKUP will only use an exact match to the lookup_value. If there are two or more values in the first column of table_array that match the lookup_value, the first value found is used. If an exact match is not found, an #N/A error is returned.

Enter & Retrieve VLOOKUP Data

Enter the VLookup formula in a blank cell or column.

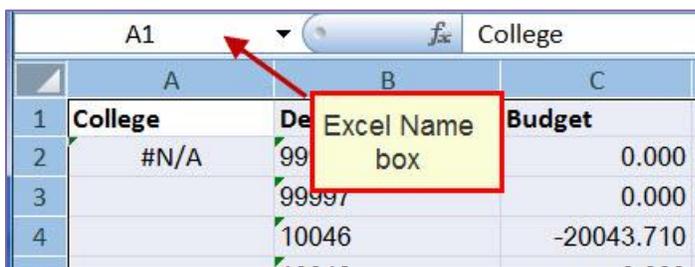
- Be sure to begin the formula with an equal (=) sign preceded by VLookup and an open parenthesis i.e. =vlookup(then the rest of the formula lookup syntax.

Name a Range - Excel Name Box

Named ranges are handy especially in formulas. By identifying (highlighting) the cell ranges of the table and naming it, the name instead of the cell ranges can be used in a formula.

Create an Excel named range quickly by typing in the Excel Name Box.

1. Select/highlight the cell/range of cells to be named
2. Click in the Excel Name box, to the left of the formula bar



3. Type a one-word name for the list, e.g. DeptList. No spaces.
4. Press the Enter key.

VLOOKUP ERROR MESSAGES

- If the **lookup_value** is not found in the first column of the table_array, VLOOKUP returns the **#N/A** error value.
- If the **col_index_num** argument is greater than the number of columns in table_array, VLOOKUP returns the **#REF!** error value.
- If the **table_array** argument includes empty columns on the left of the table_array, VLOOKUP returns the **#N/A** error value.

INFORMATION & TUTORIALS

- ✓ Microsoft.com – Lookup Formula Trainings: <http://office.microsoft.com/en-us/results.aspx?qu=lookup+formula&ex=1&filter=1&ck=1&av=zx1120>
- ✓ Microsoft.com – VLookup Trainings: <http://office.microsoft.com/en-us/results.aspx?filter=1&ck=1&av=zx1120&qu=vlookup>
- ✓ Using VLookup in Excel - <http://www.howtogeek.com/howto/13780/using-vlookup-in-excel/>
- ✓ Learning VLookup in Excel - http://www.timeatlas.com/5_minute_tips/general/learning_vlookup_in_excel
- ✓ VLookup in Excel 2007 – YouTube tutorial - <http://www.youtube.com/watch?v=2wHtcct7mCE>
- ✓ Performing a VLOOKUP in Excel 2007 (Brainstorm Inc.) – Video tutorial - <http://www.brainstorminc.com/landing/product-integration/microsoft/office-2007-help.aspx?file=excel3>

To find more information, tutorials or training reference try a Google search using VLookup in the search field.