

## Lesson 3-22: Use a VLOOKUP function for an exact lookup

Consider the following worksheet:

	A	B	C	D	E
5	Code	Description	Date	Cost price	Selling Price
6	BR48	Breitling Duograph 18K	1948	11,500.00	16,430.00
7	CA74	Cartier Tank 18K	1974	3,200.00	4,570.00
8	RO66	Rolex Tudor Oyster	1966	300.00	430.00

The retailer has created a stock code to save time when creating invoices. The code is made up of the first two letters of the watch description, along with the two last numbers of the date of manufacture.

When provided with a stock code, the VLOOKUP function can scan all of the codes in column A until a match is found and then return a value from the same row for any of the other columns.

In this lesson, we will create a VLOOKUP that will automatically return the *Description* of any watch, into column B when the user enters a stock code into column A.

- 1 Open *Invoice-1* from your sample files folder.

	A	B	C
5	Code	Description	Price
6	CA74		
7			
8			
9			Total: -

- 2 Convert the range A5:G15 on the *Stock* worksheet into a table named *Stock*.

This was covered in: *Lesson 1-8: Convert a range into a table and add a total row* and *Lesson 1-14: Name a table and create an automatic structured table reference*.

When working with the VLOOKUP function in Excel 2007 it is best practice to use a table for the *Table\_array* argument (see sidebar on facing page).

Using a table will make the data dynamic. In other words, the VLOOKUP will still work correctly if you add and remove rows from the *Stock* table.

- 3 AutoSize all columns so that each column is wide enough to display all data.
- 4 Insert a VLOOKUP function into cell B6 on the *Invoice* worksheet to find the description to match the *Code* in cell A6.
  1. Click in cell B6.
  2. Click: Formulas→Function Library→Lookup & Reference→VLOOKUP.

Invoice-1

## important

### It is best practice to use tables with your VLOOKUP functions

In this lesson I've shown you how to construct a VLOOKUP that uses a table for the *Table\_array* argument.

This is best practice in Excel 2007, but it wasn't possible in Excel 2003 as the (fantastically useful) table feature wasn't available.

In worksheets constructed using earlier versions of Excel it is common to see absolute range references for *Table\_array* arguments like this:

**Table\_array** \$A\$5:\$G\$15

More sophisticated users of earlier Excel versions learned how to use *Range Names*. (You'll learn all about Range Names in: *Session Four: Using Names and the Formula Auditing Tools*).

When you see a *Range Name* reference it looks the same as a table reference. This example shows the use of a *Range Name* also called *Stock*:

**Table\_array** Stock

While *Range Names* were best practice in earlier Excel versions, they have a fatal flaw as they are not truly dynamic.

Users of earlier versions had to resort to a complex work-around to make their Range Names dynamic. You'll learn about this work-around in: *Lesson 4-6: Create dynamic formula-based range names using the OFFSET function*.

This information is provided so that you will understand any older Excel worksheets you may inherit, (or worksheets that were created by users that haven't yet learned how to use tables)!

The VLOOKUP Function Arguments dialog appears. It can be seen that the VLOOKUP function has three required arguments (shown in bold face) and one optional argument:

<b>Lookup_value</b>	<input type="text"/>	= any
<b>Table_array</b>	<input type="text"/>	= number
<b>Col_index_num</b>	<input type="text"/>	= number
Range_lookup	<input type="text"/>	= logical

#### 5 Add the *Lookup\_value* argument.

This is the cell on the *Invoice* worksheet that provides the value to be searched for in Column A of the *Stock* worksheet. We want to look up the description for the watch that has the code CA74. This is contained in cell A6.

**Lookup\_value** A6 = "CA74"

#### 6 Add the *Table\_array* argument.

The table array is the *range, table* or *name* (see sidebar) we will search for a match to the value in cell A6. VLOOKUP always searches the left-most column of the *range, table* or *name*.

1. Type **Stock** into the *Table\_array* text box.

**Table\_array** Stock

It is best practice to use a table for the *Table\_array* argument (see sidebar).

#### 7 Add the *Col\_index\_num* argument.

	A	B	C	D	E
5	<b>Code</b>	<b>Description</b>	<b>Date</b>	<b>Cost price</b>	<b>Selling Price</b>
6	BR48	Breitling Duograph 18K	1948	11,500.00	16,430.00

Counting from left to right, the *Col\_index\_num* argument is the column that contains the value we want to return. In this case, it is the *Description* column, so we want to return column 2.

**Col\_index\_num** 2 = 2

#### 8 Add the *Range\_lookup* argument.

Beginners often overlook this vital argument because it is optional.

If it is left blank, VLOOKUP will return an inexact match. Later, in *Lesson 3-24: Use a VLOOKUP function for an inexact lookup*, we'll find why that might be useful, but in this case we want an error to be returned if the stock code is not found, so it is vital to set this argument to FALSE.

**Range\_lookup** FALSE

#### 9 Click the OK button.

The description of the *Cartier Tank* is returned to cell B6.

	A	B
6	CA74	Cartier Tank 18K

#### 10 Save your work as *Invoice-2*.