

Keep it Simple! Use a Spreadsheet to Create a Fully Searchable Database

This article shows you how to:

- ✓ Create a database of your music collection (or something different) in Excel
- ✓ Easily sort your database contents alphabetically
- ✓ Use filters to find particular information quickly

If you have a collection of music, DVD movies, stamps, books or something else, you know how hard it is to keep track of it all. If you use Microsoft Excel, however, you’ve got the ideal solution at your fingertips!

Excel is vastly easier to use than a ‘real’ database program, but it does all you need – not just storing information, but sorting and searching it to quickly find the details you need. Read on to learn how to set up and use a database in Excel spreadsheet, using a music collection as a typical example.



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Why Use Microsoft Excel as a Database?

You may not have a database program...

When you want to keep track of a large amount of information in a way that makes it searchable, a database program might strike you as the obvious choice. After all, that's what a database program is for!

That's assuming two things, however. First, it's assuming you do actually have a database program, and you may not. The best-known database program is Microsoft Access, and you only get that if you have an Office 365 subscription or you buy the ludicrously expensive 'Professional' edition of Microsoft Office.

...and they're more complicated than we need

Second, it's assuming you can puzzle out how to use it! Database programs like Access are complex and confusing things to use. If you wanted to keep track of thousands of customers, their contact details, their orders and so on, a real database program would certainly be the right tool for the job, and your effort in getting to grips with it would pay dividends. But you and I are not trying to do anything on that scale: we just need a simple, searchable catalogue of items – really not much more than a glorified list. For this, as you'll discover over the coming pages, an Excel spreadsheet offers everything we need.



It doesn't have to be a particularly recent version of Excel: the steps in this article apply to versions as old as Excel 2007 as well as to the latest Office 365 and Excel 2019.

If you don't have a copy of Excel at all, almost any good spreadsheet program will do a similar job. The Calc program in LibreOffice (www.libreoffice.org) and the PlanMaker program in SoftMaker FreeOffice (www.freeoffice.com) both offer all the features you need for this, free of charge – albeit with a few small differences from the steps I'll be presenting.

The First Step: Plan Your Fields

Although we're not using a 'real' database program, what we're creating certainly is a database: it's a collection of related information stored in a single place and organised in such a way that we can easily find a particular entry whenever we need to.

We're creating a real database

Before we start, let me introduce you to a pair of terms that crop up in the world of databases and which I'll also be using in this article – records and fields:

Two terms that relate to databases

- **Record:** a record is all the information relating to one single entry in our database. In a music database it would be a single track on an album; in a contacts database it would be the details of a single person. You could liken a record to a card in an old-fashioned card file.
- **Field:** a field is one piece of information in a record. In a music database we might have fields for the song title, artist, album title, track number and so on; in a contacts database we'd have fields for first name, last name, address and phone number, among others.

When we use a spreadsheet as a database, the 'fields' are the column headings (1), and the 'records' are the rows of information we enter beneath the headings (2).

Fields and records

	A	B		D	E
1			1		
2					
3	Album	Album Artist	Artist	Title	Track
4	Ivory Coast	Bob James	Bob James	Adult Situations	4
5	A Brazilian Love Affair	George Duke	George Duke	Alone 6-AM	4
6	Best of Smooth Jazz	Various	Bob James	Angela	7
7	A Brazilian Love Affair	George Duke	George Duke	Ao Que Vai Nascer	10
8	Ivory Coast	Bob James	Bob James	Ashanti	1
9	A Brazilian Love Affair	George Duke	George Duke	Brazilian Love Affair	1
10	A Brazilian Love Affair	George Duke	George Duke	Brazilian Sugar	5
11	Best of Smooth Jazz	Various	George Benson	Breezin'	4
12	Mountain Dance	Dave Grusin	Dave Grusin	Captain Caribe	7

Choose the fields you need

The most important job in creating a database is choosing which fields you're going to need. That's a two-part job and it's worth grabbing a piece of paper and a pen to make a list:

Which fields?

- First, you need to decide how much information you want to include in each record. In other words, which basic headings (fields) will you need for the details?

Should some fields be split further?

- Next, you need to consider whether any of those fields should be split into two (or more). Let's take a contacts database as an example. You might initially think of having an 'Address' field containing the full address of everyone in your database. But if you split this into three fields – Address, County and Postcode – you'll be able to search and sort the information to find everyone in a certain county. Likewise, if you have First Name and Last Name fields rather than a single Name field, you'll be able to quickly sort your database alphabetically by surname.



If need be, you can insert extra fields later on. Just right-click on a column letter at the very top of your spreadsheet and choose **Insert** and a new, blank column will be inserted to the left of the column you clicked. However, it's always far better to do all your planning at the beginning and start off with all the fields (column headings) you're going to need!

Creating Your Excel Database

When you've determined what fields you'll need in your database, you're ready to create it. Here's what to do:



1. Start Microsoft Excel and if you arrive at its Start screen, choose **Blank workbook**.

2. Leave the first two rows of the spreadsheet blank and enter your field names into the cells of row 3. I'm creating a music database as the example for this article, in which every 'record' will be a track from a music album, and I'm using these seven field names in the seven columns from A to G:

Enter field names in a row

	A	B	C	D	E	F	G
1							
2							
3	Album	Album Artist	Artist	Title	Track	Year	Media
4							
5							
6							

- **Album:** the name of the album on which this track appears.
- **Album Artist:** the name of the artist given for this album.
- **Artist:** the name of the artist given for this particular track. Often this will be the same as the 'Album Artist', but not always: for a compilation that includes tracks by a number of different artists I can enter 'Various Artists' in the 'Album Artist' field and the artist for each individual track in the 'Artist' field.
- **Title:** the name of this track.
- **Track:** the track number of this song on the album.
- **Year:** the year in which the album was released.
- **Media:** since some of my music is on CDs, some on vinyl and some on my PC as MP3 files, I'll enter LP, CD or PC in this field so I know where to look for the album. This also means I can easily find out later how much of my music collection exists (for example) on my PC.



If you're also creating a music database, you'll want to use at least some of these fields, and perhaps all of them. However, they're only suggestions: the information you decide to include is entirely up to you. For instance, you may not be interested in noting the year in which an album was released, or the track number of each song, but you may want to include a 'Genre' field to note the style of music (so that you can quickly find all your jazz recordings, for example), or a 'Rating' column in which you give each track a score out of 10 so that you can easily find all your top-rated tracks.

Likewise, the order in which you place the fields is up to you. In a database, the order of fields doesn't really matter at all, so arrange them in any way you like..

Save often as
you work

3. A sensible next step is to save your spreadsheet. Press the **(F12)** key on your keyboard to bring up the Save As dialog, type in a name for it such as 'Music Database' and click the **Save** button. From this point onwards, be sure to save frequently by pressing **(Ctrl) + (S)** as you work on the database.

Begin entering
your database's
records

4. The final step is easy to explain, but it's the one that takes the time! Starting from the row immediately beneath your row of field names, begin entering the details of all the items you want to include in your database. For a music database, of course, this means working through your entire collection, typing the details of every track. It can be a tedious job and you don't have to do it in a single sitting: when you've had enough, save and close your spreadsheet, and return to it later when you're in the mood to do some more.

Note that you don't have to type the records in any particular order. The sorting features I'll explain later make that unnecessary. For a music database, just grab the first album that comes to hand, type its details, then grab the next, and so on.



	A	B	C	D	E	F	G
1							
2							
3	Album	Album Artist	Artist	Title	Track	Year	Media
4	A Brazilian Love Affair	George Duke	George Duke	Brazilian Love Affair	1	1979	CD
5	A Brazilian Love Affair	George Duke	George Duke	Summer Breezin'	2	1979	CD
6	A Brazilian Love Affair	George Duke	George Duke	Cravo E Canela	3	1979	CD
7	A Brazilian Love Affair	George Duke	George Duke	Alone 6-AM	4	1979	CD
8	A Brazilian Love Affair	George Duke	George Duke	Brazilian Sugar	5	1979	CD
9	A Brazilian Love Affair	George Duke	George Duke	Sugar Loaf Mountain	6	1979	CD
10	A Brazilian Love Affair	George Duke	George Duke	Love Reborn	7	1979	CD
11	A Brazilian Love Affair	George Duke	George Duke	Up From The Sea It Arose	8	1979	CD
12	A Brazilian Love Affair	George Duke	George Duke	I Need You Now	9	1979	CD
13	A Brazilian Love Affair	George Duke	George Duke	Ao Que Vai Nascere	10	1979	CD
14	Best of Smooth Jazz	Various	Al Jarreau	We're In This Love Together	3	1997	LP
15	Best of Smooth Jazz	Various	Bob James	Maputo	1	1997	LP
16	Best of Smooth Jazz	Various	Bob James	Angela	7	1997	LP
17	Best of Smooth Jazz	Various	Boney James	Nothin' But Love	13	1997	LP
18	Best of Smooth Jazz	Various	David Sanborn	The Dream	9	1997	LP
19	Best of Smooth Jazz	Various	Earl Klugh	Midnight in San Juan	8	1997	LP
20	Best of Smooth Jazz	Various	Fourplay	Eastbound	11	1997	LP
21	Best of Smooth Jazz	Various	George Benson	Breezin'	4	1997	LP
22	Best of Smooth Jazz	Various	George Duke	No Rhyme, No Reason	10	1997	LP
23	Best of Smooth Jazz	Various	Joe Sample	Hippies on a Corner	2	1997	LP
24	Best of Smooth Jazz	Various	Michael Franks	The Lady Wants To Know	12	1997	LP
25	Best of Smooth Jazz	Various	Randy Crawford	Rio De Janeiro Blue	6	1997	LP
26	Best of Smooth Jazz	Various	Yellowjackets	Daddy's Gonna Miss You	5	1997	LP
27	Hands Down	Bob James	Bob James	Janus	1	1982	CD

Rules to follow when entering information

The whole point of a database is to make it easy to find particular information whenever you need it. To ensure that your database is as helpful as it can be, keep these three rules in mind as you enter information:

- Enter identical information the same way every time. Wherever a particular artist's name is used, for example, always type it the same way. If you sometimes enter it as 'George Benson' and sometimes as 'Benson, George', your database will regard these as two different people and any searching and sorting you do based on the artist name will go awry.

Avoid confusion by being consistent!

No empty cells

- **Fill in every field.** Don't leave any blanks in the records you enter. If there are certain details you don't have available, choose something to enter to indicate that (such as '[Unknown]') and type it the same way every time for all unknown information (as in the rule above).

...and no
blank rows

- **Don't leave any blank rows.** For Excel to recognise all your rows of records as one single database, make sure you use every row with no empty lines.

Quick tips for entering your information

There's no denying that you'll have to do quite a lot of typing while you're creating your database. (After all, if it were only a small amount of information, you probably wouldn't need a database to organise it in the first place!) Fortunately, Excel offers a few shortcuts that can make the job a little quicker and easier:

Quick navigation
between cells
and rows

- **Move quickly from cell to cell:** as you're entering fields of a record across a row, press the Tab key to jump into the cell to the right to fill in the next field. When you finish one record and want to start typing the next on the row below, press the Enter key.

Let Excel finish
what you type

- **Make the most of AutoComplete:** when you start typing something that you've previously typed into a cell further up in the same column, Excel will often 'autocomplete' the entry for you. In other words, following the character or two you've just typed, you'll see what Excel assumes will be the rest of that entry, shown in white-on-black. If this suggested text is what you were intending to type, just press Tab to accept it and jump to the next cell. If you were intending to type something different, ignore Excel's suggestion and keep typing.

Repeat the
cell above

- **Quickly copy the entry from the cell above:** as you enter the details for an album, you'll type the same artist name

and year for each track. The AutoComplete feature mentioned above may help to speed this up, but there's another trick you can use: hold down the **Ctrl** + **Shift** keys and press the , (comma) key, and Excel will copy the contents of the cell immediately above into the current cell.

Make your data easier to work with

When you start entering the details into your spreadsheet, you'll fairly quickly run into two problems. The first is that all your cells are too narrow to hold the information you're typing into them: the text overlaps into the next cell, or becomes 'chopped off' so that you can only see the first word or two.

Columns are probably too narrow ...

The second problem is that as you enter more and more records, and work your way down the rows, your field headings are scrolled upwards and out of sight. Although you can probably remember which fields you created and what order they come in, it's easier to be able to see them while you work!

...and field names scroll up out of sight

Let's set about fixing those two problems.

- **Make the columns wider:** move the mouse up to the dividing line between one column letter and the next, and the pointer shape will change to a vertical beam with an arrow crossing it horizontally:

Quickly set ideal column widths

	A	B	C
25	Best of Sm	Various	Joe Sampl
26	Best of Sm	Various	Al Jarreau

When it does, simply double-click. Excel will automatically widen the column to the left of the mouse so that it's wide enough to fit the longest item of text contained in that column. In the same way, double-click

the dividing lines between the remaining columns to widen them (and do this whenever you like, if you type even longer items somewhere in a column).

	A	B	C
25	Best of Smooth Jazz	Various	Joe Sample
26	Best of Smooth Jazz	Various	Al Jarreau

- Keep the field names constantly in view
- Keep your field headings in view: start by clicking in the cell immediately below your first field name (this should be the cell at row 4, column A). Switch to the View tab on the Ribbon, click the Freeze Panes button and then click Freeze Panes on the little menu that appears. You'll see a thin line appear below the row containing your field names, indicating that this row has been 'frozen'. Now, however far downwards you scroll, you'll find that this row remains fixed in place and is constantly visible.

	A	B	C	D
1				
2				
3	Album	Album Artist	Artist	Title
34	Ivory Coast	Bob James	Bob James	Rosalie
35	Ivory Coast	Bob James	Bob James	Yogi's Dream
36	Ivory Coast	Bob James	Bob James	Adult Situations
37	Ivory Coast	Bob James	Bob James	Orpheus
38	Ivory Coast	Bob James	Bob James	Moodstar
39	Mountain Dance	Dave Grusin	Dave Grusin	Rag Bag
40	Mountain Dance	Dave Grusin	Dave Grusin	Friends and Strangers
41	Mountain Dance	Dave Grusin	Dave Grusin	City Lights
42	Mountain Dance	Dave Grusin	Dave Grusin	Rondo
43	Mountain Dance	Dave Grusin	Dave Grusin	Mountain Dance
44	Mountain Dance	Dave Grusin	Dave Grusin	Thanksong
45	Mountain Dance	Dave Grusin	Dave Grusin	Captain Caribe
46	Mountain Dance	Dave Grusin	Dave Grusin	Either Way
47				
48				
49				

Easily Sort Your Data However You Like

Once you've finished entering the necessary information into your database, you're ready to see how all that work pays off! The point of this database, as I mentioned earlier, is to enable you to look at your data in various ways and quickly locate the information you need. Let's start with one of the simplest things you might want to do from time to time – arrange the information alphabetically.

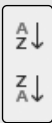
When you were creating your database, you probably didn't type the records in any particular order. The great thing about a database is that you don't need to. For my music database, I was simply picking CDs off the rather-disorganised shelf and typing the details of each track they contained. I could have done it in an even-less-organised way, by entering track details in a random order from different CDs. It would have been hard to keep track of what I'd done and what I hadn't, of course, but as long as I eventually included every track on every CD, my database would be complete and working, regardless of the order in which I entered the details.

Having done that, I might want to see my database organised alphabetically by album or artist, or by any of the other field names I created. Excel refers to this as 'sorting' and makes it very easy to do:

You can enter records in any order at all

Sort the data whenever you like

1. Start by clicking any cell below the field by which you want to sort. For example, to sort your database alphabetically by artist name, click somewhere below the 'Artist' field (or on the 'Artist' field itself).
2. Switch to the **Data** tab and look at the group named 'Sort & Filter' where you'll see the two buttons pictured to the right.



3. Click the AZ button (the upper of the two) and Excel will instantly sort all the records in your database alphabetically based on the field you chose. In doing so, of course, the details in all the other columns are shuffled around so that every record remains intact.



Your database will stay sorted the way you've chosen until you decide to sort it differently. You can click elsewhere and click that AZ button again: click in the 'Album' column to sort alphabetically by album name, for example, or in the 'Year' column to sort numerically by year with the oldest albums appearing at the top. If you prefer things 'upside-down', the ZA button will do the opposite – sorting counter-alphabetically for text, or from highest to lowest for fields containing numbers.

**Sort again after
adding more
records**

Remember that Excel only sorts your data when you click the AZ or ZA button. After sorting your database in a certain way, you may scroll to the bottom and type new records into more rows, and those won't be sorted. (Of course, that's a good thing – you don't want those new rows jumping upwards to a new position as soon as you've typed them!) When you've finished adding the new records, just follow the same steps again to sort the entire database.

Filtering: Find Information Matching Your Criteria

**Find specific
information in
your database**

In many cases, simply sorting your database alphabetically or numerically by a particular field will help you find the information you need fairly quickly. However, sometimes you'll want to know something far more specific than simple sorting can tell you, and this is where a database is much more useful than a simple list.

Here’s an example of the type of thing I mean. I mentioned earlier that my database includes a ‘Media’ field where I specify whether a track exists on CD, LP or my PC. Something I may want to do is to find out which tracks by a particular artist I have on CD. I won’t find this out by sorting, but Excel offers a far more powerful feature that makes light work of it: filtering.

Let’s assume you’ve set up a music database using the same field names I did, and you want to find that same information. Here’s how it’s done:

- 1. Begin by clicking one of the cells in your database that contains text. Any cell will do as long as it’s not a blank cell above or below your data.
- 2. Next, we need to switch on a feature named ‘AutoFilter’. Switch to the **Data** tab on the Ribbon and click the **Filter** button (1) in the ‘Sort & Filter’ group.
- 3. If you look at the row containing your field names now, you’ll see that each field name has a little button containing an arrowhead beside it (2). These little buttons will remain visible until you switch off the AutoFilter feature.



Add filter buttons to your fields

File Home Insert Page Layout Formulas Data Review View Help				
Get Data		Refresh All		Stocks Geography
Get & Transform Data		Queries & Connections		Data Types
H18		Sort Filter (1)		Clear Refresh Advanced Filter
	A	B	C	D
1				
2				
3	Album	Album Artist	Artist	Title
4	A Brazilian Love Affair	George Duke	George Duke	Brazilian Love Affair
5	A Brazilian Love Affair	George Duke	George Duke	Summer Breezin'

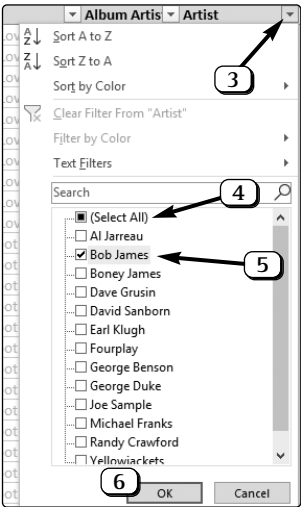


You can switch off AutoFilter by clicking the same button again but, unless these arrow buttons particularly offend you, there's no harm in leaving this feature switched on: it gives you fewer steps to follow next time you want to filter your data!

Deselect all
artist names...

...then click a
single artist
to include

- 4. Click the arrow button at the right of the Artist field (3) and a panel will appear like the one pictured in the next screenshot. In this panel you'll see a list of all the artist names included in your spreadsheet. Each artist name has a tick beside it: start by clicking on (Select All) (4) to untick that item: this removes the ticks from all the artists in the list.
- 5. Now click the artist for whom you want to find out how many tracks you have on CD (in my case, 'Bob James') (5), then click OK at the bottom of the panel (6).



- 6. You'll see the result instantly: most of the contents of your database have (seemingly) vanished, and you'll only see records for which the 'Artist' is the name you just clicked. Excel has 'filtered' your data to hide every record with a different artist.
- 7. We're halfway there, but what we want to know is which of these remaining tracks are on CD, rather than on LP or computer. In the same way as before, click the arrow button at the right of the Media field, click (Select All) to remove all the ticks in that list, then click CD followed by OK.
- 8. The result, pictured in the next screenshot, tells me exactly what I want to know. Excel is now showing only tracks whose artist is Bob James and which I have on CD.

Only records containing this artist are listed

Filter again to specify CD tracks only

3	Album	Album Artist	Artist	Title	Track	Year	Media
27	Hands Down	Bob James	Bob James	Janus	1	1982	CD
28	Hands Down	Bob James	Bob James	Robert	2	1982	CD
29	Hands Down	Bob James	Bob James	It's Only Me	3	1982	CD
30	Hands Down	Bob James	Bob James	Spunky	4	1982	CD
31	Hands Down	Bob James	Bob James	Macumba	5	1982	CD
32	Hands Down	Bob James	Bob James	Shamboozie	6	1982	CD
33	Ivory Coast	Bob James	Bob James	Ashanti	1	1988	CD
34	Ivory Coast	Bob James	Bob James	Rosalie	2	1988	CD
35	Ivory Coast	Bob James	Bob James	Yogi's Dream	3	1988	CD
36	Ivory Coast	Bob James	Bob James	Adult Situations	4	1988	CD

If you look closely at the arrow buttons in the Artist and Media fields, you'll see that they now also contain a tiny filter symbol (actually a picture of a funnel). Holding the mouse over one of those buttons tells you how the column is being filtered: for the 'Artist' button, for example, a little tooltip appears saying Artist: Equals "Bob James".



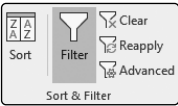
In a nutshell, then, filtering allows you to choose and combine relevant criteria from particular columns (in this case, 'Bob James' and 'CD'), and Excel hides any records that

Combine whatever criteria you need

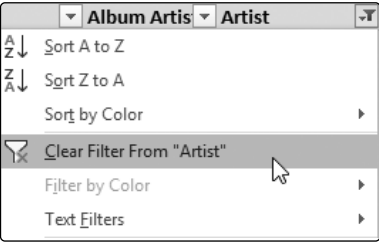
Remove the filters to see all your records again

don't match those criteria. You can choose criteria from as many or as few columns as you need.

When you've finished examining the results of your filtering, you'll probably want Excel to display all your records again. One way to do that is to click the Clear button in the 'Sort & Filter' group of the Ribbon's Data tab.



Alternatively, to clear just one of these criteria while leaving the other, click the arrow button in the field you want to clear and choose **Clear Filter from "[Field]"**. As an example, you might like to clear the 'Media' filter we added a moment ago, but leave the 'Artist' filter showing everything in the collection by 'Bob James'.



You can filter in even more detailed ways

Use custom filtering to choose more complex criteria

The basic filtering steps given above will often be all you need to identify particular collections of data. Indeed, this basic filtering is even more flexible than the steps above demonstrated, because you can tick two or more items in the panel that appears before finally clicking the OK button.

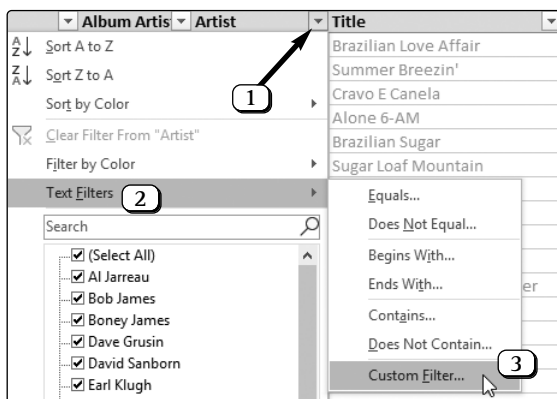
However, the filtering options don't end there. You can also set up 'custom filters' that allow you much more control over which items are shown and which are not. For example, you could filter your 'Year' column to display albums whose release date was greater (more recent) than 1980, or filter your 'Title' column to show only songs whose name contains

the word 'Love', or filter the 'Artist' column to show only tracks whose artist is something other than 'Bob James' (or, indeed, combine all three of those examples).

Here's how to set up one of these custom filters:



1. Make sure you're displaying filter buttons in your fields, repeating steps 1 and 2 on page 13 to display them again if you've since switched them off.
2. Start by clicking the arrow button beside the field you want to filter **(1)**.
3. Move the mouse to Text Filters **(2)** (or Number Filters if this column contains only numbers) and choose Custom Filter **(3)**.



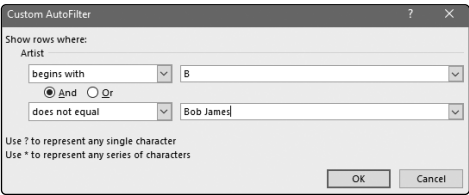
4. Now you'll see the little dialog pictured on the next page. Open the drop-down list containing the word **equals** and choose from the criteria available, such as **does not equal** or **contains**, according to what type of information you want to find.

Choose the type of criteria you want to use

Type the text to be matched

Optionally combine with an 'And' or 'Or'

- 5. In the box to the right, either type a few letters or words (or a number, if this column contains figures rather than text), or open the list to pick an entry.
- 6. If you need to be even more specific, a second pair of boxes below can be used in the same way. Between them you can choose between 'And' and 'Or': using **And**, only records that match the criteria in both sets of boxes will be shown; with **Or** a record will be shown if it matches the criteria in either set of boxes.
- 7. Finally, click **OK** (or press **Enter**) and Excel will filter your records based on the criteria you've set. In the example pictured below, I've used both sets of boxes to specify that I want to see only the records for which the artist's name begins with a 'B' but is not 'Bob James'.



We chose **Custom Filter** in step 3 above, but you'll notice we could have chosen something different – **Equals**, **Begins With**, **Contains**, etc. – from the menu instead. These lead you to exactly the same dialog, used in precisely the same way, but with the first drop-down list already set with the corresponding item, saving you the need to follow step 4.

Clear the filter to see all your records again

- 8. When you want to remove this filter and see all your records again, click the **Clear** button in the 'Sort & Filter' group of the Ribbon's **Data** tab.