

User Level:
 beginner

FACULTY AND STAFF COMPUTER TRAINING

Microsoft Excel 2001 Databases

A Quick Reference Guide

Databases

Overview

Databases are used to store information that can then be easily extracted. A telephone book is an example of a database containing names, addresses and phone numbers. Excel has excellent database management features. Unlike prior versions of Excel, you can have more than one database per worksheet, but it is difficult. You need to define ranges for each database. I recommend just having one database per worksheet, adding more worksheets if necessary.

Here is a database for an imaginary local dentist. His patients are listed along with the type of service rendered and the date of service. The cost of the service is listed, along with the amount past due. If the service was more than 30 days ago, then the amount is past due.

	A	B	C	D	E	F
1	Joseph Lohr, DDS					
2	2536 Blossom Hill Road					
3	San Jose, CA 95118					
4						
5		DATE:	7/23/01			
6						
7	PATIENT INVOICE RECORD					
8	LAST NAME	FIRST NAME	SERVICE	DATE	AMT. DUE	PAST DUE
9	Leone	Gene	Cleaning	5/1/01	\$70	\$70
10	Lower	Marie	Exam	5/1/01	\$75	\$75
11	Charles	Richard	Crown	5/13/01	\$695	\$695
12	Pauda	Angela	Cleaning & Exam	5/27/01	\$90	\$90
13	Haselden	Kenneth	Root Canal	5/28/01	\$999	\$999
14	Bonds	Dawn	Exam	6/8/01	\$60	\$60
15	Reader	Cliff	Cleaning	6/21/01	\$80	\$80
16	Aberg	Pam	Cleaning	6/24/01	\$75	\$0
17	Kaubisch	Sonia	Exam	7/2/01	\$60	\$0
18	Garcia	Anthony	Filling	7/5/01	\$125	\$0
19	Garcia	Nita	Cleaning	7/5/01	\$86	\$0
20	Mackey	Bill	Extraction	7/8/01	\$200	\$0
21	Doble	Marisa	Cleaning	7/15/01	\$85	\$0
22	Yip	Nancy	Exam	7/27/01	\$50	\$0
23	Bowman	Margaret	Filling	7/28/01	\$150	\$0
24	Housman	Robert	Cleaning & Exam	8/1/01	\$90	\$0
25	Marks	John	Crown	8/15/01	\$700	\$0
26	Taku	Dennis	Root Canal	8/28/01	\$900	\$0

At the top of each column is a row of Field Headings (Last Name, First Name, etc.) These are required elements. There must not be a row of empty cells below the headings.

The thing you want to be able to do with a database is to extract information from the large list of data. To do this, we choose Data-Filter-AutoFilter.

If your active cell is any cell in the database (a cell below the field headings) then the database will be automatically recognized by Excel.

If, however, the active cell is a cell outside of the database data (say an empty cell or one above in the header), then Excel won't know where the database is and will ask you to find it.



So, click in any cell that is part of your database and Choose Data-Filter-AutoFilter. The field headers will change in appearance, acquiring little drop-down arrows next to their names.

LAST NAM [v] FIRST NAM [v] SERVICE DAT [v] DATE [v] AMT. DU [v] PAST DU [v]

Once you are at this step, you are ready to start extracting data. Hold down your arrow on one of the pull-down field header arrows and you will see a list of criteria found in that field. Below is the list of criteria you can select to extract data from the Service field:

- (All)
- (Top 10...)
- (Custom...)
- Cleaning
- Cleaning & Exam
- Crown
- Exam
- Extraction
- Filling
- Root Canal

In my example, I have chosen to extract records for people who had an exam, so I dragged down to Exam and let go. Immediately the database contracts to show only the records of people who fit this criteria.

PATIENT INVOICE RECORD						
LAST NAME [v]	FIRST NAME [v]	SERVICE DAT [v]	DATE [v]	AMT. DU [v]	PAST DUE [v]	
Lower	Marie	Exam	5/1/01	\$75	\$75	
Bonds	Dawn	Exam	6/8/01	\$60	\$60	
Kaubisch	Sonia	Exam	7/2/01	\$60	\$0	
Yip	Nancy	Exam	7/27/01	\$50	\$0	

You may want to extract records that fit two criteria. For example, let's say that we want to find everyone that came in for either an exam or to have their teeth cleaned. In this case, you would choose (Custom) from the list of Service criteria.

I typed Clean* so that I can find everyone who has “Clean” in their service, including: clean, cleaning, cleaned, cleaning & exam, etc. The results are shown below:

PATIENT INVOICE RECORD					
LAST NAME	FIRST NAME	SERVICE DATE	DATE	AMT. DUE	PAST DUE
Leone	Gene	Cleaning	5/1/01	\$70	\$70
Lower	Marie	Exam	5/1/01	\$75	\$75
Pauda	Angela	Cleaning & Exam	5/27/01	\$90	\$90
Bonds	Dawn	Exam	6/8/01	\$60	\$60
Reader	Cliff	Cleaning	6/21/01	\$80	\$80
Aberg	Pam	Cleaning	6/24/01	\$75	\$0
Kaubisch	Sonia	Exam	7/2/01	\$60	\$0
Gardia	Nita	Cleaning	7/5/01	\$86	\$0
Doble	Marisa	Cleaning	7/15/01	\$85	\$0
Yip	Nancy	Exam	7/27/01	\$50	\$0
Housman	Robert	Cleaning & Exam	8/1/01	\$90	\$0

As you can see from the row headings above, the database contracts to hide all the records that don't fit the criteria. Once you've gotten this list, it might be a good idea to copy it and paste it onto a separate worksheet if you think you'll need it again. Otherwise you'll have to re-find it all again.

When you're done working on the database and want to return it to a regular spreadsheet without those little drop-down arrows, simply choose Data-Filter-AutoFilter again. This is an on/off switch.

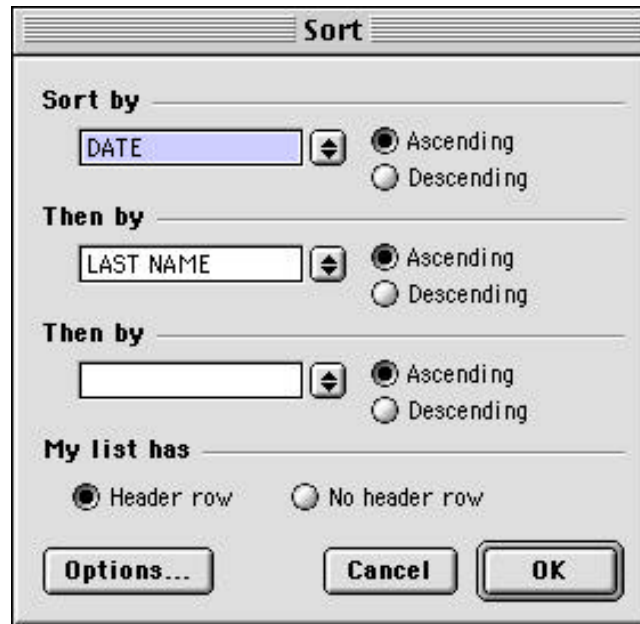
If you work a lot with the database feature, you may find it easier to enter your data using the database form.

The image shows a screenshot of an Excel database form titled "Sheet1". On the left side, there are six input fields with labels: "LAST NAME:", "FIRST NAME:", "SERVICE DATE:", "DATE:", "AMT. DUE:", and "PAST DUE:". To the right of these fields is a vertical scrollbar. To the right of the scrollbar is a "New Record" section containing seven buttons: "New", "Delete", "Restore", "Find Prev", "Find Next", "Criteria", and "Close".

Choose Data-Form... If necessary, click on the New button to access a new record. Type in the information, tabbing between fields. Click on the New button to go to a new record. When you're done, click on the Close button.

By the way, I'd like to point out that in the form shown above, you don't enter in an amount for Past Due. That's because this amount is automatically generated by Excel. It is an IF formula: `=IF(D11+30<SC$5, E11,0)`. Deciphered, this means that if the date of service was 30 days prior to today's date, then the amount due = amount past due. If not, then nothing is overdue (\$0) yet.

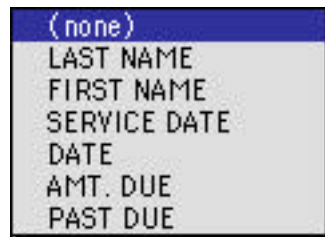
This database uses the current date to figure out whose bill is overdue. It would be cumbersome if every day you worked on the database, you had to remember to type in today's date before you started working. So the amount in Cell C5 isn't really today's date (although it looks like it). It is really a formula that will automatically insert the current date into the cell (assuming that the date is correctly set on the computer). The formula for this is `=NOW()`.



Eventually you'll probably want to sort data. The sorting feature works the same whether you're working on a database or just a regular worksheet.

With one of the cells in the list the active cell (just click your cursor in any cell of the table), choose Data-Sort.... You'll get the dialog box shown above. Also, your database will be selected in the background.

First, choose which column you want to sort by. Place your arrow on the little up/down arrow next to the Sort by box and hold down the mouse button. A list will appear. Drag down to what you want sorted by.



If you want to sort by more than one field, choose the second field in the next area. If you have column headers (you will if it's a database), click the appropriate button under My List Has: Header Row/No Header Row. When you've made your choices, click the OK button and the data will be sorted.

Once you've done a sort, there is no magic button to push to go back to the original order. If you want to be able to do that, before sorting the first time, insert a new Column A. Number each row (use AutoFill here). Then, after sorting by, say, last name, you can go back to the original order by sorting again, choosing Column A to sort by.