

Designing and Creating Databases

Terry Marris September 2009

2 Database Maintenance

The contents of a database rarely remain unchanged for long. New records are added. Old records are deleted. Data is changed. Keeping records tidy, without duplicates, complete and up-to-date is part of a process known as database maintenance.

In this chapter we see how to:

1. open an existing database and display the records and fields for editing
2. find and replace the contents of fields with new entries
3. select records for deletion
4. delete selected records
5. edit an existing record
6. add a new record
7. extract selected records from a database table
8. append selected records to a database table

2.1 Open an Existing Database

Perhaps the easiest way to open an existing Access database is to locate it using My Documents, and then rapid double click on its file name.

1. Copy the Access 2007 database named Students.accdb from the website www.tmarris.com and place it on your memory stick, your harddrive or wherever: right click on Students Database, choose Save Target As ... Navigate to the folder where you would like the database to be saved. Choose Save, OK.
2. With My Documents (or My Computer) Navigate to where Students.accdb was saved. Rapid double click on the file name itself. Set Options... Security alert to enable this content. OK.
3. Right click on tblStudents:Table and choose Open

Students : Database (Access 2007) - Microsoft Access

Table Tools: Home, Create, External Data, Database Tools, Datasheet

Views, Clipboard, Font, Rich Text, Records, Sort &

ID	FirstName	LastName	Gender	Course	StartDate	EndDate	Status	Add
1	Justin	Case	m	BTF	01-Sep-09	30-Jun-10	active	
2	Barb	Dwyer	m	BND	01-Sep-09	30-Jun-10	deleted	
3	Stan	Still	m	HND	01-Oct-09	30-Jun-10	active	
4	Terry	Bull	m	C&G	01-Sep-09	30-Jun-10	active	
5	Paige	Turner	f	C&G	01-Sep-09	30-Jun-10	active	
6	Mary	Christmas	f	BTF	01-Sep-08	30-Jun-09	deleted	
7	Anna	Sasin	f	HND	01-Oct-09	30-Jun-10	active	
9	Doug	Hole	m	BTF	01-Sep-09	30-Jun-10	active	
10	Hazel	Nutt	f	BTF	01-Sep-08	12-Dec-09	deleted	
11	Stan	Still	m	C&G	01-Sep-09	30-Jun-10	active	
12	Rose	Bush	f	BND	01-Sep-08	12-Dec-08	deleted	
13	Pearl	Button	f	BND	01-Sep-09	30-Jun-10	active	
14	Jo	King	m	C&G	01-Sep-09	12-Dec-09	active	
15	Barry	Cade	m	C&G	01-Sep-09	30-Dec-10	active	
16	Carrie	Oakey	f	BND	01-Sep-09	30-Jun-10	active	
17	Priti	Manek	f	C&G	01-Sep-09	30-Jun-10	active	
18	Tim	Burr	m	HND	01-Oct-09	30-Jun-10	active	
19	Jo	King	m	C&G	01-Sep-09	30-Jun-10	active	
20	Anna	Prentice	f	HND	01-Oct-08	12-Jun-09	deleted	
21	Annette	Curtain	f	BND	01-Sep-08	12-Jun-09	deleted	
22	Bill	Board	m	BTN	01-Sep-09	30-Jun-10	active	
23	Les	Plack	m	BTF	01-Sep-09	30-Jun-10	active	
24	Simon	Swindells	m	C&G	01-Sep-09	30-Jun-10	active	
25	Daisy	Picking	f	C&G	01-Sep-09	30-Jun-10	active	
26	Albert	Hall	m	HND	01-Oct-09	30-Jun-10	active	
27	Esther	Monday	f	C&G	01-Sep-09	30-Jun-10	active	
28	Sue	Mee	f	C&G	01-Sep-09	30-Jun-10	active	
29	Rob	Mee	m	C&G	01-Sep-09	30-Jun-10	active	
30	Mary	Lee	f	BTF	01-Sep-09	30-Jun-10	active	
31	Penny	Bun	f	C&G	01-Sep-09	30-Jun-10	active	
*	(New)							

Record: 14 of 31 of 31 No Filter Search

2.2 Replace Field Values

In Rob Mee's record (record number 29):

- replace active with deleted
- replace 30-Jun-09 with 12-Dec-08

1. Click in the appropriate cell. The cell becomes highlighted (if it doesn't press the F2 key.) Type in the replacement text.

2.3 Select Records

To select one record, click in the grey left hand column next to the ID column.

To select several adjacent records, click in the grey left hand column and drag.

ID	FirstName	LastName	Gender	Course	StartDate	EndDate	Status	Add
1	Justin	Case	m	BTF	01-Sep-09	30-Jun-10	active	
2	Barb	Dwyer	m	BND	01-Sep-09	30-Jun-10	deleted	
3	Stan	Still	m	HND	01-Oct-09	30-Jun-10	active	
4	Terry	Bull	m	C&G	01-Sep-09	30-Jun-10	active	
5	Paige	Turner	f	C&G	01-Sep-09	30-Jun-10	active	
6	Mary	Christmas	f	BTF	01-Sep-08	30-Jun-09	deleted	
7	Anna	Sasin	f	HND	01-Oct-09	30-Jun-10	active	

click here to select
Terry Bull's record

2.4 Delete Selected Records

Right click, in the ID column of the previously selected records, and choose Delete Record. Confirm the delete process with Yes. This irretrievably and permanently deletes the record.

In practice, professionals never remove records from a database. You can never know if the information you have just zapped would be needed in the future. For example, I am sometimes asked for a reference for a student who left five years ago; I cannot remember who the student was, but I can look at his or her record because it has not been irreversibly deleted from the Student Database. Professionals just mark records as logically deleted by updating a field such as Deleted with the value Yes.

But C&G might oblige us to irreversibly delete a record to show that we can do it.

1. Irreversibly delete Anna Sassin's record (ID = 7)

2.5 Edit a Record

In §2.2 above, you replaced an entire field value. Sometimes you just need to make a small change.

In Esther Monday's record (ID = 27) change Monday to Munday.

1. Click on Monday in Esther Monday's record. If the entire cell is highlighted, press the F2 key.
2. Now make the required spelling change.

F2 toggles between replace and edit modes. Another way to toggle between the modes is to rapid double click on the cell itself.

2.6 Add a New Record

1. Click in the FirstName column next to * (New) at the bottom of the table.
2. Enter a new record:

Ivy, Roots, f, BTF, 10-Sep-09, 30-Jun-10, active
3. Save your addition: right click on the the tblStudents tab and choose Save.

2.7 Extract Selected Records

1. Select the records (see §2.3 above)
2. Right click in the selected ID column and choose Copy. This places your selected records into the Windows Clipboard.

2.8 Append Selected Records

Ah. Now you need to add the records in the Windows Clipboard into another database. Ideally, the other database should have exactly the same structure as the database table you are copying from. What you do is right click on the asterisk, *, next to (New) at the bottom of the database and choose Paste; this copies the records(and the field structure)from the Windows Clipboard. We did this in the last handout, Database Structures. Try:

1. Open a new database (Start, Programs, Microsoft office, Access 2007), name it CopyOfStudents.
2. Select all the records from the Students database
3. Right click in the ID column of the selection and Choose Copy
4. Switch to the new database, CopyOfStudents
5. Right click on the asterisk, *, and choose Paste.

Note that if you want two databases open at the same time, you have to launch two separate copies of Access 2007.

Exercise 2.1

1. Explain why data may need to be extracted from one database and stored in another database.

You could mention that you want to make a copy of the data before you start making changes to the data or the structure. This enables you to revert to the original if you screw up on on the amendments.

You could say that you want to give a colleague a copy of just some of the records in your database so that he or she could develop the copy to meet new requirements.

You could say you want a copy of selected records in another database so that the copied data can be manipulated and analyzed without affecting the original.

You could mention privacy: if you were to use your database as the basis for a presentation, you would work with a copy without the sensitive or personal bits.

You could mention security: you could copy the data into a second database, include a reference to a backup and a version number in the database name (e.g. studentsbackup1.accdb) and store it in a secure location away from the the original database.

We have seen how to amend, delete and add records to a database.

Next, we see how to design and create queries.

Bibliography

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