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Hot-Link a Transaction File To Your Customer Database

TOM MARCELLUS



HERE at Marble Publications, we like to process our customers' orders in one fell swoop at the end of each day. And we don't like to spend a lot of time doing it. The boss is funny that way.

Whether the order is for a subscription, back issues, WinClip, our Focus Series Volumes, conference videos or other products, the first thing we do with an order is check to see if we have a record for the customer in our Customer database.

Assuming we do (if we don't, we create a new one), we make an abbreviated notation in their record as to what they've ordered along with the month and year. We then hot-link-it over to a separate transaction database to record the order details, then return to the customer database via another hot-link to process the next order.

The Application in this article showcases these "hot-links" between the customer and transaction databases. The links could just as easily be between vendor and purchase order databases, or between a database of your credit cards and one that tracks the payments you make on them each month. These hot-links save you a ton of time and keystrokes.

What's so hot about hot-links?

Figure 1 shows a record from a scaled-down version of our Customer database, and Figure 2 shows a typical record from our Transaction database. (These databases, along with the small macro file required for their use, are included in this month's download file for Online Edition subscribers.)

Each day as we process our orders, I'm always tickled at how easy it is to use this efficient little system. It takes hardly any time at all to update the customers' records and record the transactions no matter how many orders have been received that day.

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The Quick Answer

The Do-It-Yourself Guide to Q&A

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CUST2.DTF Retrieved form 1 of 1 Total Forms: 1 Page 1 of 1
Esc-Exit F1-Help Alt+F6-Table F7-Search F8-Calc

Figure 1. A customer record. Note the Trans "button" in the lower right corner. It's a hot-link to the transactions database.

ID: 5362 TRANSACTIONS (Requires Trans.asc)

Date: 5-9-2001 Trans No: 2666

Amount: \$133.00

Paid by: Check Check No: 15443

Received from: BALEY CONSTRUCTION

For Videos

Customer DB Same Customer

TRANS2.DTF Retrieved form 1 of -- Total Forms: 6 Page 1 of 1
Esc-Exit F1-Help Alt+F6-Table F7-Search F8-Calc F10-Continue

Figure 2. A completed transaction record. Note the two "buttons" for "Customer DB" and "Same Customer."



Default Retrieve and Sort Specs

This regular Quick Answer column is to help you better prepare for the new Q&A-compatible database manager (code-named "Sesame") coming from Lantica Software, LLC.

As you probably know, Q&A lets you name, save and reuse your Retrieve and Sort Specs. You create a Sesame Retrieve Spec the same way as in Q&A—you type your criteria in the applicable database field(s), then save the Spec to any same you choose.

A Sort Spec in Sesame, however, is not created the same way as in Q&A. In Sesame, you click on the field(s) you want to sort on using a new **Sort box** that displays alongside the Retrieve Spec (see the screen shot below) and simply specify an ascending (default) or descending sort with a mouse click. No more having to remember to press F8 then type 1,AS, 2,DS, and so forth. You just move the fields up or down in the Sort box to set the sort order you want. (We feel that this is much more intuitive than the Q&A way.) Then, just like in Q&A, you can name and save the spec.

Retrieve and Sort Spec enhancements

But there's more! Every Q&A consultant has been asked at one time or another why Q&A displays records in the order it does. The answer is simple—without a Sort Spec, Q&A retrieves records in the order it comes across them in the file (working from the beginning of the file to the end). This order changes as you delete and add new records and Q&A rearranges the file to remove or add space. The third record that comes up one day may have been moved by Q&A to a different position in the file the next day, depending on what you've done with the database since your last search.

Q&A users would often like to display only a subset of

the records when they first open a database—perhaps only the inventory items that are in (or out) of stock; just the records for the Chicago office; or only the active customers or those with a balance owing.

All these things can be accomplished in Q&A by creating and saving a Retrieve and Sort Spec for each one, then loading these specs before running the search. (Alt-F8, select the saved Retrieve Spec, F8, Alt-F8 again, select the saved Sort Spec). Although this is powerful, it's a lot of work for some users and takes planning and care to set up. (Advanced Q&A users might simplify these steps using macros by themselves or attached to custom menus.)

The Sesame solution

Sesame approaches this issue by letting you go a step further than Q&A. You can

create then select both a Retrieve and Sort Spec that Sesame will treat as the default and automatically apply whenever you open a specified database. Of course the default spec is overridden by any spec you type in or select from a list.

And of course, like all other new Sesame enhancements, you won't have to use it if you don't want to. But for me at least, what a time-saver it will be to open my billing database and be presented with just the records of current customers in descending date order of their last charges.



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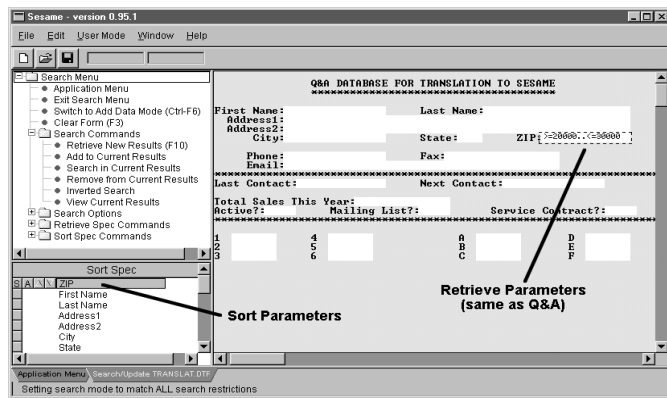
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A Sesame Retrieve Spec with a Zip code range entered. The Sort box, conveniently located in the bottom left corner of the screen, is set to sort the records in Zip code order.

We owe the efficiency of this system to a few small macros that enable us to effortlessly switch between the customer and transaction databases simply by clicking on a “button.” You can see these “buttons” at the bottoms of the records shown in Figures 1 and 2.

For us, it’s the ability to create and use these handy “button” fields—in conjunction with the macros that can be triggered from programming, and Q&A 5.0’s internal clipboard—that make Q&A 5.0 far superior to either Q&A 4.0 for DOS or Q&A for Windows.

This technique (quick-switching between related databases) can easily be adapted to other types of applications as well, so it’s definitely worth knowing about. Once you understand the basics of how to make it work, you’ll probably find a variety of uses for it.

The customer database

You can see the database designs in Figures 1 and 2, so I’ll cover just the “button” designs and what little programming you’ll need to make them work like real hot-link buttons.

In the customer database, you create the Trans “button” (the button that takes you to the transactions database) by adding a field to the form that begins with the “<” character and ends with the “>” character. You want to make the field two characters wider than its label, so the label “Trans” can appear in it with a space on either side to make it look nice. (Here, “Trans” is not really a field *label* in the technical sense, but a field *value* because it’s *in* the field rather than in front of it. But for practical use it serves as a label, so we’ll call it that.)

So your “Trans” button field would be seven characters wide and set to Justify Center (JC) at the Format Spec. Don’t forget to go to the Set Field Names Spec (File / Customize / Program / Set Field Names) and name the field “Trans.”

Next, go to the Palette Spec (File / Design / Customize / Change Palette), move to the Trans field, and change its background and text colors to contrast with the rest of the form. If your form’s background color is the standard Q&A dark blue, you might want to set the field’s background color to bright white and its text to dark blue—anything that will make it stand out and look like a clickable “button.”

Now, in the first field in the customer database, add the following programming statement (File / Design / Program / Program Form):

```
< Trans = "Trans"
```

This ensures that the “Trans” label appears in the button field whenever you display a record. (You could optionally set the Trans field to “Trans” via an On-Record-Entry program.)

Next, add the following program to the Trans field:

```
< If ID <> "" Then @Macro("Trans"); Goto ID }
```

Assuming the record contains some kind of customer identification number in the ID field, the little macro shown below (when invoked by the program above) will capture it, save the record, exit the customer database, open the transaction database in Add Data mode and paste the ID number into the matching ID field there:

```
<begdef><nokey><name>"trans"<vidoff><f11>  
<capsf10>atrans2<enter><f12><enter><enddef>
```

If you look closely at the relationship between the program that triggers the macro and the macro itself, you might start scratching your head because it looks like the *@Macro* and *Goto ID* commands are in the wrong sequence. But Q&A actually invokes the *Goto* first and *then* invokes the macro.

You can see that the first thing the macro does is press F11 to copy the customer’s ID number to Q&A 5.0’s internal clipboard, followed by a Shift-F10 to save the record. It then chooses Add Data from the File menu, types **trans2** (the name of the transaction database) on the filename line, presses Enter, then pastes the ID number into the ID field, the first field of the new transaction record.

This is all the programming that’s required for the customer database.

The transaction database

Now the transaction database’s programming takes over. In the transaction database, the Date and Trans No. fields are auto-filled by Initial values (File / Design / Customize / Set Initial Values). The Trans No field is simply an @Number.

Here’s the program in the first field (**ID**) of the transaction database:

```
> Customer DB = "Customer DB";  
Same Customer = "Same Customer";  
  
If @Add and ID <> "" Then  
{  
Received from =  
@XLu("Cust2", ID, "ID", "Company");  
If Received from = "" Then  
Received from =  
@XLu("Cust2", ID, "ID", "FName") + " " +  
@XLu("Cust2", ID, "ID", "LName");  
Goto Amount  
}
```

You have two button fields in the transaction database—**Customer DB** and **Same Customer**. (Design them into the form the same way you designed the Trans button field in the customer database.) The first button takes you back to the Customer database’s Retrieve Spec (so you can find and display the next customer’s record), and the second one returns you to the same customer’s record, in case you need to have another look at it.

Concludes on page 11

Use Macros to Help You Program Your Databases

ALEC MULVEY



WHenever you find yourself doing the same thing repetitively in Q&A for DOS, you should ask yourself: “Could a macro save me time here?”

This applies to programming as well as anything else. Though you can’t get Q&A to do the programming for you, there are tools that can make repetition when programming (or re-programming) a lot easier by helping you:

- Avoid repeatedly typing (or editing) parts of programs.
- Avoid those all-too-easy typos.

Word processing functions

When you’re programming in Q&A, you are basically word processing. You’re using a scrollable eight-line text editor that can contain a 32K (maximum) single-page document. You don’t have the benefit of any of the aids that a proper programming editor offers, such as automatic indenting, use of colours to pair opening and closing parentheses, the ability to insert commands and functions from a canned list, or the like. What you *do* have is most of Q&A’s word processor facilities, which include:

- Inserting a document (Q&A or text).
- Move, copy, delete text within that field’s program.
- Move or copy text to an external file.
- Search and Replace.
- F11/F12 Clipboard Copy & Paste keys (Q&A 5.0 only).

This list might not seem to offer very much, but when coupled with Q&A’s built-in word processing features, you’ll be surprised how much you can do automatically. It helps to be familiar with some Q&A Write shortcuts:

- F3—Delete block
- F4—Delete Word
- Shift-F4—Delete Line
- Ctrl-F4—Delete to end of line
- Ctrl-F5—Copy block to File

Further tips that I would suggest are some general programming ones like these:

- Don’t use field ID numbers for on-field-exit programs.

- Use field names rather than field ID numbers.
- Name fields logically, using the line number (for line-items) as the suffix.

Why? I’ll explain. You don’t need logical field numbers or LFN’s (#100, #110 and so forth) nearly as much as I see “in the field.” I often see databases programmed by others where *every* field is numbered—even those with no programming and not even referred to by programming! This is unnecessary. You only need LFNs for programming a field containing a general Calc program statement that needs to be triggered with every data change, like this one:

```
#100: If @Modified Then #100 = @Date
```

Fields containing on-field-exit or on-field-entry programming (those with a “>” or “<” symbol at the beginning of the program) do not need LFNs.

Fields referred to by programming in other field do not need LFNs either—as long as they are referred to by field names.

“Automated” programming is simpler if an array of fields (such as a series of line-items) have the same field names going down the “rows,” differing only in the line number, like this:

```
StockRef1 Des1 Location1 Qty1 Price1 ExtPrice1
StockRef2 Des2 Location2 Qty2 Price2 ExtPrice2
StockRef3 etc..
```

Note that even if you assign these fields appropriate labels (which you often won’t, as field arrays like these usually consist of label-less fields), Q&A will *not* name them as you would wish. In the above example, based on the un-numbered label “StockRef,” Q&A would name the first field StockRef, and the second one StockRef1, so you have to rename them all at the Field Names Spec.

Along with the automation opportunities I’m about to describe, another benefit of naming such groups of fields in this consistent manner is that you can perform mathematical calculations on them with the utmost simplicity:

```
Total : #200 = @Sum(ExtPrice1..ExtPrice6)
```

(This is an example of where a general programming statement is required—so the total always shows the

correct figure.) The example assumes there are six line-item rows, numbered 1 to 6. If you need to add another one or two, you can work out for yourself how you'd revise the programming!

To further illustrate, let me take the situation where you have a database with several line-items (products sold, for example. See Figure 1) and you need to add some programming.

The first thing to do is to add the correct field names. At the Field Names Spec, type the first row of field names correctly. (See Figure 2.)

You now need to fill in the others consistently. With just four rows (in this example) it might be just as quick to type them. But I'll show you a way to automate this that will be quicker for more rows—and also more accurate.

1. Put the cursor in the first field, where it already says *Stock1*.
2. Press Shift-F2 for the macro menu, then select *D - Define Macro*.
3. You are asked to "Type the macro Identifier." This is the shortcut key. I like to use the same shortcut key over and over again. A good one to use is the key with the odd-looking apostrophe on it, above the Tab key. It's a key you wouldn't normally use and allows for a "one-key-press" macro without the need for the Shift key. Q&A warns that "This key is already used by Q&A," but you can ignore this.
4. Press the down arrow key to move to the row below.
5. If necessary, press F6 to expand the field.
6. Press F4, or Shift-F4, as necessary, to clear Q&A's own field "name."
7. Type the Field name, but no number. (The name in the field above is your cue.)
8. Press Shift-F2 to terminate the macro.
9. At the macro options dialog, you can either leave the macro "Name" as it is or, if you prefer, name it. If you name it, call it something like "deleteme" or "temp"—you'll be over-writing it in a minute! Press F10.
10. When asked to save the macro to file you can do so, but, again, it's not worth it, so just press Esc. This leaves the saved macro file different from the macro file in memory, but heck—who cares?—this is a macro with a life span of literally a minute or two.

You should now have the cursor in the field after "Stock." Continue this way:

1. Type the next number, in this case, 2.
2. Press the macro shortcut key.
3. Type the next number.
4. Repeat until you reach the bottom.

With practice, you can press the macro key with one hand, and run along the number keys at the top of the keyboard with the other in less time than it's taken me to type this sentence. Repeat by creating a new macro for each line-item column.

Again, the saving is not just in time. It's awfully easy to make a mistake if you type them all manually, especially if the fields need expanding so you can't see their names at a glance.

Another way of doing this, if you're using Q&A 5.0, is as follows:

1. Type the field name—without the number prefix—into the first field.
2. Press F11 to copy it to the clipboard.
3. Press Down arrow then F12 to paste it into each row below.

You now have the same field name in each field. To add the numeric suffix, record a macro, starting at the top of the column, that:

1. Presses Down arrow to move to the "cell" below.
2. Presses F6 to expand the field.
3. Presses End to go to the end.

You can then run the macro and type just the number. That takes care of the field names. Now what about the programming? We need programming in two fields:

- On leaving the Stock Ref field, to lookup the Description, Location and Unit Price from the Product.dtf database.
- A general Calc statement to calculate the Extended price.

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SAMPLE SALES INVOICE DATABASE					
Stock Ref.	Description	Location	Qty	Unit Price	Ext Price
ABC123	Roadster 22"	E45		\$325.80	
Total					

Figure 1. Portion of a sample record in a sales database.

SAMPLE SALES INVOICE DATABASE					
Stock Ref.	Description	Location	Qty	Unit Price	Ext Price
Stock1	Desc1	Locat	Qty1	Unit1	Ext1
F0001	F0002	F0003	F0004	F0005	F0006
F0007	F0008	F0009	F0010	F0011	F0012
F0013	F0014	F0015	F0016	F0017	F0018
Total					Total

Figure 2. Field names for the first row have been entered.



Retrieving Records Dated the Following, Previous or Current Month

We use Q&A 5.0 and run a report each month that shows which of our customers' memberships expire in the following month so that we can send them renewal notices. We change the Retrieve Spec each month to include the following month's records, but we'd rather have a pre-defined Spec that our people can use without having to make such changes. How can we do this?

—Sheila

By using a programmed Retrieve Spec (available in Q&A for DOS 4.0/5.0 or Q&A for Windows), you can write a straightforward expression that will always retrieve the following month's records simply by adding 1 to the current month. This works for all months except December, where adding 1 would give you an erroneous month 13. Moreover, in December, you also have to add 1 to the year. So a more elaborate solution is required. Add a Lookup Table to the database, like this:

Month (Key)	Next Month (Column 1)	Add to Year (Column 2)
1	2	0
2	3	0
3	4	0
4	5	0
5	6	0
6	7	0
7	8	0
8	9	0
9	10	0
10	11	0
11	12	0
12	1	1

This table, when used in conjunction with the following saved Retrieve Spec expression in the membership expiration date field (#1 in this case), will give you all the records with an expiration date in the month following that in which the retrieval is run:

```
#1: ={@Month(#1)=@Lu(@Month(@Date),1) and @Year(#1)=@Year(@Date)+@Lu(@Month(@Date),2)}
```

The expression tells Q&A to find the records where the month of the expiration date equals the month in the second column of the table and the year of the expiration date equals the year of the current date plus the value in the third column of the table. For example, in February 2001 the expiration date month would have to be March (month 3) and the year would have to be 2001 (2001+0), whereas in December, 2001 the month would be January (month 1) and the year would be 2002 (2001+1).

Here's an expression that will retrieve the records dated the *previous* month without requiring the Lookup Table:

```
{ @Left(Date, 7) = @Left(@Date - @Dom(@Date), 7) }
```

And here's one that will retrieve the records dated the *current* month without the Lookup Table:

```
{ @Month(Date) = @Month(@Date) and @Year(Date) = @Year(@Date) }
```

Unique Values when Importing Data

I have an "SU" (Speedy/Unique) field in my database. If I try to add a record that duplicates the value in this unique field, Q&A warns me that the value already exists in the database but allows me to keep it if I want to. Recently, I imported an ASCII data file into this database and some of the unique fields were duplicated without Q&A warning me. PFS File did not do this. Is there any way to import data into a database and have Q&A automatically exclude any records that contain duplicates of my "unique" fields?

—Paul

Wow! Back to the old PFS/Pro File days! Your problem is that Q&A is totally forgiving when it comes to importing data. If you tell it to import an ASCII file, it does so regardless of unique field settings. It will import non-date information into date fields and non-unique information into unique fields. The saving grace is that you can then use Q&A's *Remove Duplicate Records to ASCII* feature (in Q&A 4.0/5.0 for DOS) to delete any imported records that



Stumped?

Send your Q&A questions to @Help, The Quick Answer, Marble Publications, Inc., 1927A Harbor Blvd, Costa Mesa, CA 92627 or email to mailbox@quickanswer.com. Include your name, address, phone, and your

Q&A version number (and whether DOS or Windows) and a detailed description of the problem. We'll publish those questions we feel are of general reader interest; individual responses aren't possible.

contain duplicate values in the subject field. The only issue that might make this less desirable is that Q&A will remove the entire record—not just the duplicate field. You could optionally run a “duplicate records” report to find out which records had duplicate fields, then manually fix those records, if that’s what you want to do. (See “How to Create a Duplicate-Record Report” in the February 1997 issue and “Isolating and Marking Duplicate Records” in the April 2000 issue. See also “A Quick Check for Duplicate Records” in the August 1999 issue.) Q&A gives you lots of ways to use programming and Mass Update to check for fields that contain the same data and change them. It can even be done using a Retrieve Spec in combination with a Sort Spec and programming. But this type of solution is too advanced to detail here.

Page Defaults in Q&A for Windows

I need to adjust the margins when I print my forms (in Q&A for Windows) to my HP LaserJet 4M. My form is just a slight bit too long for 8.5” x 11” paper if I use the default top and bottom margins of .5” But I don’t want to redo the form; I just want to set the printer. I remember that I could do this in Q&A for DOS. How can I do it in Q&A for Windows?

—Ken

Good news and bad news. The good news is that you can adjust the margins. The bad news is that you can’t make them defaults. This is one of the shortcomings of Q&A for Windows. You will have to be content with selecting Page Setup from the File menu and setting the margins each time you run Q&A. When you exit Q&A, the printer margins will revert to .5” all around.

Transferring Files Between PCs by Email

I’ve come up with a method that I hope will save my bacon. I use Q&A on separate machines, at different locations, at different times. These locations are miles apart and I have no way to connect them at a reasonable cost. One of the locations is even inaccessible by phone line, though it does have cable modem access. Because I move around so much, I don’t want to keep the main database in a remote location and connect with PC Anywhere. It’s easy for me to keep track of the last time I worked on a database. I came up with a scheme whereby I just email, as attachments, a copy of the .dtf and .idx files to the other computers each time I finish working on the database. The email time and date stamp tells me which is the latest copy. The problem, though, is that I seem to be experiencing some corruption in my databases as they get larger. Is this a Q&A problem or is it because of the way I’m transferring the files?

—Ray

Yours is a novel approach. (Personally, I wouldn’t recommend it. But if it works for you) It also addresses an issue we run into all the time. People will email

damaged files to us and report that they have been getting a certain error code. We receive the files only to find that they’re significantly more damaged than when they were sent, and that we’re actually getting different error codes than those the sender reported. This had us stumped for a while, but the problem is not yours—or ours for that matter. It resides in the world of email. And it differs depending on which world of email you reside in.

In an effort to speed the transfer of communication across the Internet, email systems take it upon themselves to convert and compress your attachments and then reconstruct them at the receiving end. It’s almost like sending them through a Star Trek-like transporter. If the settings aren’t exact, the resulting file doesn’t always match the original one, especially if there’s some anomaly or corruption already in the original.

But, take heart—there’s an easy solution. Simply zip your files using a program like Winzip or PKZip. A zip file attachment is handled much more successfully and reliably by email software, and the received database, when unzipped, will be exactly as it was at its point of origin.

More on Q&A Slowdowns and Anti-Virus Software

As a continuation of last month’s column, here’s another tip from the gurus at the Symantec Anti-Virus Center (www.symantec.com). If you’ve tried all the suggestions in that column and Q&A is still running slowly, try this: Start Norton Anti-Virus and select *Options*. Go to *Bloodhound* under the Auto Protect Link and turn off *Enable heuristics*.

Q&A and Bar Code Scanning

We need to scan in our inventory using bar codes. Is there any way we can keep using Q&A? Is it compatible with bar code technology? What happens to bar codes in a Q&A database?

—Tom

The answer is best addressed by understanding what bar codes really are and what bar code readers do. Bar codes are nothing more than a graphic depiction of a set of plain ASCII characters in a format that can be read by a laser scanner. Most bar codes are just another way to write a series of alphanumeric characters such as 1234AB56CD99. The reader or scanner “sees” the graphic and converts the bars back into their ASCII characters. There are basically two types of bar code readers: one you attach directly to a computer which inputs its results into an application, and one that is a standalone unit, or portable data terminal (PDT) that reads the code and stores the information in its own memory for later upload to a PC application. In either case, the readers or scanners come with their own software that acts as an input mechanism to the PC.

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Creating Export Files On-the-Fly—Revisited

A.D. VELPER



TALK about gizmos that Q&A forgot—how does this one grab you: While viewing any record, you click on a field and Q&A copies selected data from the record to a separate file, building the file as you go!

Slick, huh? But why would you want an external file of data from certain records? Well, you could build, as you go, a list of addresses of customers whose orders you processed during the day. Then, at the end of the day, you could print a merge label for each one without having had to mark (then—*ugh!*—unmark) a field in their records.

With data from a selected batch of records in a separate file, you could easily import the thing into a Q&A database, or use it as a data source for a mail-merge in Bill Gates' bloated word processor.

Or, you could use this gizmo to have Q&A build you a file of unique key values (record identifiers) that you could later dump into a Retrieve Spec.

Teaching a new dog old tricks

Back numbers of TQA have covered techniques to create a separate file on-the-fly from the records you view* by running the DOS *Echo* command from @Shell thisaway:

```
#10 = @Shell("Echo " + AllData + " > data.txt ")
#10 = @Shell("Echo " + AllData + " >> data.txt ")
```

The first command creates a file named "data.txt" from the contents of the **AllData** field. The second one *appends AllData* to whatever's already in data.txt.

But there's always been a *gotcha* with Echo—the contents of the **AllData** field can't exceed 120 characters.

An even gnarlier problem, come to find out, is that the @Shell/Echo combo doesn't work on some PCs! Just ask me. For a long time I used it to make address files for shipping labels I'd print in Dazzle, a terrific little label-making program. Then I got a new Win 98 box one day and the same commands just created *empty* files!

So I had to find a new way to get the same results. The method I use now takes Q&A 5.0's External Programs feature and a DOS batch file to do the trick. This method should work on any PC and—*cowabunga!*—it

doesn't crap out at 120-characters! Let's set up a "test bed" so you can try it yourself. The files I'll cover are in this month's file for Online Edition subscribers. If you don't have 'em, just whistle while you work like I do.

1. The test database

First, to use one of Alec Mulvey's pet expressions (one that's sure to attract attention at any social gathering on this side of the pond), knock-up a database named Export.dtf with these here fields:

```
Name:
Address:
City:
State:
Zip:
AllData:
```

Then, head on over to the Program Spec and type the following in Export.dtf's **AllData** field:

```
< Usl("Add to file,New file",AllData);

If AllData = "New file" Then
If Not @Askuser("Are you sure you wanna trash",
               "The existing export file",
               "and start a new one?")
Then { Clear(AllData); CPrev };

If AllData <> "" Then {
@Msg(@Shell("Export.bat " + @Left(AllData,3)));
AllData =
@Chr(34) + Name + @Chr(34) + "," +
@Chr(34) + Address + @Chr(34) + "," +
@Chr(34) + City + @Chr(34) + "," +
@Chr(34) + State + @Chr(34) + "," +
@Chr(34) + Zip + @Chr(34) + "
";
@Macro("Update Export File")
}
Else Cprev
```

This little gem kicks in when you click on the **AllData** field. A pop-up pick-list asks you to choose between *adding* the current record's data to the existing export file or starting a *new* file. (If you press Esc to kill the pick-list, nuthin' happens.) Your choice, *Add* or *New*—after an overwrite warning for *New*—gets passed to the Export.bat batch file as a parameter via the @Shell. (I nest @Shell in an @Msg function here to keep that pesky return value from cluttering things up.)

The program then assembles a comma-delimited string (of the Standard ASCII variety) consisting of the name and address fields, which it temporarily stashes

* See "Post On-the-Fly to a Text File" in the November 1997 issue, "Exporting Data to Windows Programs" in the December 1997 issue, "Generate Export Files On-the-Fly" in April 1999's @Helps, "Passing Field Values to a DOS Text File" in March 2000's @Helps, and "Generate Text Files On-the-Fly for a Word Merge" in April 2000's @Helps.

in the **AllData** field. When typing this program, be sure to press Enter at the end of the line that references the **Zip** field, then type the closing quote mark at the beginning of the next line. This adds an essential carriage return.

Now that the string has been strung, the program's @Macro command invokes the **Update Export File** macro.

2. The macro

Add the following macro to your usual macro file:

```
<begdef><nokey><name>"Update<sp>Export<sp>File"<vidoff>
<altf9>U<f6><f3><end><end><f10><f6><capstab><enddef>
```

This little number launches the **Update Export File** External Program selection (Alt-F9, U). Then, on return, it opens the Field Editor, deletes the **AllData** value, and moves the cursor to the previous field.

3. External Program selection

Add the following selection to your External Programs menu (Utilities / External Programs):

Menu option	Command line
Update Export	File Export.bat Export %g

If you already have an External Program that begins with "U," pick a different starting character for this new one and fix your macro accordingly. The "%g" parameter tells Q&A to create a temporary file containing the data in the **AllData** field and hand it off to the batch file. The "Export" parameter tells the batch file what to do with it.

4. The batch file

Create the following Export.bat (batch) file and save it with Ctrl-F8 to your main Q&A program files directory:

```
REM @Shell uses this section
if "%1"=="New" goto byebye
if "%1"=="Add" goto next
if "%1"=="Export" goto export
:next
REM Create Add.txt
echo > Add.txt
goto end
:byebye
del Add.txt
goto end

REM External Program uses this section
:export
if exist Add.txt goto add
REM Create Export.txt file
copy %2 Export.txt
goto end
:add
REM Append to Export.txt
copy %2 Export2.txt
copy Export.txt + Export2.txt Export.txt
del Export2.txt
del Add.txt
:end
```

This batch file is initially called by the @Shell, which passes to it the *Add* or *New* parameter depending on your selection from the pick-list. If the parameter is *New*, the

:byebye label deletes the Add.txt file and the batch file ends, returning to the **AllData** program. If the parameter is *Add*, a file named Add.txt is created. (Add.txt contains nuthin'. It's only mission is to act as a flag that you're *appending* to the export file.)

Export.bat is now run a second time courtesy of the @Macro("Update Export File"). The macro triggers the **Update Export File** External Program selection. Since the command line for this contains "Export" as its first parameter (%1), the batch file passes control to the **:export** label. If Add.txt exists, it means you opted to *append* the data from the current record to the export file (Export.txt). In this case, control skips to the **:add** label. Here, the %2 variable (the temporary %g file from Q&A) gets copied to Export2.txt, then Export2.txt gets combined with Export.txt, resulting in a new Export.txt file containing the data from both files. Export2.txt and Add.txt are then vaporized and you're back at your database record.

If Add.txt doesn't exist, it means that you decided to start a new export file. In this case, the batch file simply copies the %g file to Export.txt, overwriting it.

Notes & options

With these gadgets in place, while eyeballing a record (or after filling in the fields in a new record), you simply click on the **AllData** field and Q&A will ask you to select *Add to File* or *New File*.

If you do the *New File* thing, a file named Export.txt will be spawned containing just the data from the record you're on. If you choose *Add to File*, the data from the record will be tacked onto the existing Export.txt file.

You can continue to add addresses to Export.txt this way until you once again select *New File* to clear the thing and start over. Either way, you've got a neat little Standard ASCII file that you can import back into Q&A or use in any program that likes comma-delimited text files.

To add this gizmo to any database, simply create an **AllData** field in it and plug in the programming. (**AllData** can be a labelless field just a few characters wide.) You can use the same macro, batch file and External Programs selection. If you'll be using more than one database with this feature, though, you'll need a separate macro, batch file, External Programs selection and **AllData** program for each one. Otherwise, your Export.txt file could wind up looking like huevos rancheros.

Oh, and if you use this method to build a file of key values that you can later dump into a Retrieve Spec (to include those records, say, in a merge printing) just modify the programming to append the unique key value from the current record—followed by a semicolon—to the file and remove the carriage return at the end of the line.

One more thing. If you need a header line (of field names) in the export file for a Microsoft Word mail merge, just have your programming add it as the first line whenever you select *New file*.

A.D. Velper is still working on a voice-recognition module for hands-off Q&A data entry. Will he finish it before "Sesame" arrives?

At the Program Spec, enter the programming for the first field, then save it, test it and debug it until it's working exactly as you expect. Here's the programming in our sample database:

```
> Desc1 = @XLU( "PRODUCT", Stock1, "Stock Ref",  
"Description" ) ;  
Location1 = @XLU( "PRODUCT", Stock1, "Stock Ref",  
"Location" ) ;  
Unit1 = @XLU( "PRODUCT", Stock1, "Stock Ref", "Unit  
Price" )
```

Of course, you remembered to use F5 (copy) in Q&A 4.0, or F11 (clipboard) in Q&A 5.0 to copy the repetitive programming within this one field!

Once this is complete, with the cursor in the field with the programming at the Program Spec, do this:

1. Press F6 to expand the field.
2. Press Ctrl-F5 to copy the block to a file.
3. Press Ctrl-End to select it all, then press F10.
4. Enter a filename. Don't use "temp" as you might save several fields during the session. Select something simple like "prog1" or "xlu" or anything you like. Write the name down as you will need it—once, in a minute or two. Don't bother with filename extensions or where it's saved—this will have a currency of just a few minutes.

Move to the field below. Time to record your macro:

1. Press Shift-F2, then select D - Define Macro.
2. Use the same shortcut key as before (such as " ` "). Q&A warns that "this key is already defined," but you can ignore this.
3. Press F6 to expand the field.
4. Press F8 (Options) / Document / Insert a Document.
5. Type the filename you used to save the programming. ("Prog1" for example.)
6. Press F7 (Search/Replace).

You need to replace the "1" suffix. It's tempting to replace just the "1," but this can have severe repercussions if there are numbers elsewhere, such as logical field numbers (what follows field #99?). It's safer to replace each field name separately, so, do this:

1. Search For: Desc1.
2. Replace with: (leave blank for now.)
3. Tab to the other settings and set them as shown in Figure 3. Press Page Down to get the extra options. Always set all the parameters every time unless you are absolutely sure you have just done a similar

replacement. Always set the parameters absolutely by pressing the first letter (the "A" of Automatic and the "T" of "To End," for example): never by using the arrow keys. (The starting point may not be the same.)

4. Finish by typing the replacement text and leave the cursor ready to type the suffix.
5. Press Alt-F2 (Pause Macro).
6. Type the number 2.
7. Press Alt-F2 (Resume Macro).
8. Press F10 to perform the replacement. (Only 1 found.)
9. Press F7 again to bring up the Replace dialog.
10. Change "Desc1" To "Location1."
11. Tab to the "Replace with" field and *carefully* delete the "Desc" from "Desc2," leaving the number 2.
12. Press the Insert key and type "Location," so it reads "Location2."
13. Press F10.
14. Press F7 again and this time replace "Unit1" with "Unit2."
15. Finally replace "Stock1" with "Stock2." (Notice that you only have to enter the new suffix number once.)
16. Press F6 to close the field editor.
17. Press Down arrow to the field below.
18. Terminate the macro with Shift-F2, name it, press F10, and save it to the macro file or not, as you wish.

Once again you have a macro that just needs a single number to be entered for each field.

A similar macro can repeat the programming in this other field:

```
#10: If Qty1 > 0 Then Ext1 = Qty1 * Unit1 Else Clear(Ext1)
```

The macro (same name), will enter the saved programming as above, and replace "Qty1" with "Qty2," then "Ext1" with "Ext2." Of course, this field needs a logical field number— #10 in this case. With care, you should be able to get the macro to change this for you as well. Just take care to use the arrow keys in the "Replace

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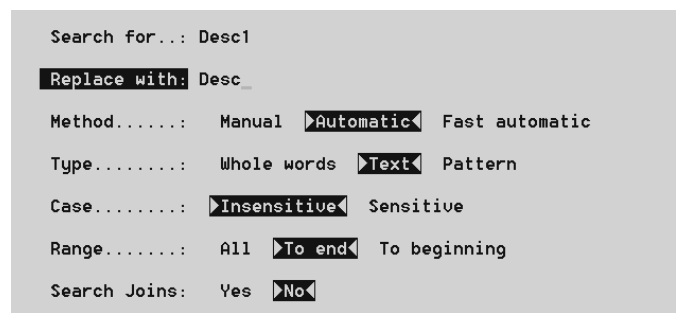


Figure 3. Search and Replace. The cursor is at the end of Desc.

The first two lines of the program fill the two button fields with their labels.

Next, the program checks to see if the current transaction record is in Add Data mode and the **ID** field is filled. If these check out okay, it then finds and retrieves the Company name from the matching customer record. If the Company field is empty, it looks up the customer's first and last name. Either way, the retrieved information is placed in the **Received From** field.

The cursor is then moved to the **Amount** field so you can enter the dollar amount of the transaction.

The optional program for the **Amount** field is this:

```
#100: If ID <> "" and Amount <> "" and For <> ""
Then XPost("CUST2", ID, "ID", Amount,
"OrdsToDate", "Add")
```

This is an On-Record-Exit program. (Press F8 while in the Program Spec, and type 100 in the On Exit Field ID line.) That is, when you've completed the transaction and click one of the two buttons to return to the customer database, this program will post the transaction amount to the cumulative transaction field (OrdsToDate) in the matching customer record. This tells you how much the customer has spent with you over time.

The Paid By field in the transaction database contains this program:

```
< If @Add then
{
Userselect("Check,Chargecard", Paid by);
If Paid by = "Check" then
goto Check No
else goto For
}
```

This program pops-up a pick-list where you can select "Check" or "Chargecard." If the order was paid for by check, the cursor moves to the **Check No** field where you can type in the check number. (You could optionally add fields for credit card number and expiration date for orders paid by credit card.)

The **For** field's program pops-up a pick-list where you can select what was ordered:

```
< For =
@Userselect("Subscription,Back Issues,Disks,
Consulting,Advertising,Focus Series,Videos");
```

The **Customer DB** button field contains this program:

```
< @Macro("Customer DB")
```

Its corresponding macro looks like this:

```
<begdef><nokey><name>"Customer<sp>DB"<vidoff>
<capsf10>scust2<enter><dn><dn><enddef>
```

The **Same Customer** button field contains this program:

```
< @Macro("Same Customer"); Goto ID
```

And its corresponding macro looks like this:

```
<begdef><nokey><name>"Same<sp>Customer"<vidoff>
<f11><capsf10>scust2<enter><tab><f12><f10><enddef>
```

That's all there is to it. Now you can hot-link-it back and forth between the two databases without having to press a key.

You can go a step further by adding another button field to the customer database—one that *searches* the transaction database for records that match the customer's ID. You could label this one **View Trans**. The hot-link (macro) for **View Trans** would take you to the transaction database, paste the customer ID into the Retrieve Spec ID field, then add a 1AS to the Sort Spec's **Date** field before displaying the records, perhaps in Table View. This way, any customer's transaction history would be just a mouse click away.

Concluding notes

Once you've entered your transactions for the day, you have a great deal of information that you can put to good use. For example, you can run a *Deposit Ticket* report on the checks received to give to the bank with your deposit. (This report is included in the download file.) With fields for credit card information, you could run an export of the day's credit card transactions to import into your merchant card services software program for batch transmission and approval.

The transaction database also gives you a handy way to track orders received. A customer calls to say that he hasn't received the widget he ordered three weeks ago. A quick check of the transaction database will tell you if and when you actually processed his order.

Your transaction database can also provide useful financial information. You can have reports that, for any selected date range, show total income and/or income by type of product sold, to give just two examples.

Such reports would be problematic if not impossible to create if you were to store all of a customer's transactions in his or her customer database record. (It's also poor application design.)

Of course this simple transaction database doesn't take the place of a full-blown invoice or sales order database if your business requires these. But the transaction database *could be* an invoice or sales order database and made to work the same way when it comes to having links to the customer database. My mission here was just to show you how to design the links between two related databases to help you effortlessly pass data and navigate between them.

Tom Marcellus has been editor of *The Quick Answer* forever.

In the former case, you can usually program the scanner to input to any open application just as if you were typing the input at the keyboard. You can even program the scanner to input a Tab or Enter after each bar code is read. This is normally accomplished with the use of a piece of hardware known as a keyboard wedge and its accompanying software. So here you would just open Q&A, place the cursor in the field where you want to “dump” the data, then press the trigger on the scanner. With a combination of the scanner software and some programming in Q&A, you can fill your data field and move to the next record with the push of the button on the scanner. In the latter case, you'll have to download the resulting ASCII file to the PC, then import it into the Q&A database.

Either way, you'll find that Q&A and bar code scanners make a wonderful combination.

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with” area before you type anything. If you just start typing, you'll replace the previous entry. And remember that the default mode is always Overtypе—you need to press the Insert key to insert text.

When you try this for yourself, you'll probably find that you can create one macro to copy programming for all the fields for one line-item in one go. All it takes is using field names, a familiarity with Q&A's word processing functions, and macros.

Next month I'll show you a much more involved application of this using some lesser-known word processing features. The macro took me about 30 minutes to get right, but then saved me hours!

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The download file for Online Edition subscribers includes the two databases from this article, Sales.dtf and Product.dtf.

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