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T·H·E QuickAnswer

The independent monthly guide to Q&A expertise

Create a Documents Catalog

With the rushed pace of today's business, how fast and accurately you can answer a client's questions makes a lasting impression. Here's a technique you can use to store all your documents in a database, so you can quickly find the one you need the moment that client calls.

By Jeff Nitka

DOS

F you're like me, you probably use your PC to compose and store your documents. If you write a lot of documents, it can be a formidable task to find the document you need after days or weeks have passed. If you've set up your document subdirectories systematically and if you've carefully named and added descriptions to your Write documents, finding and them is easier. However, this is much easier said than done. A number of issues come into play when trying to establish a workable system for saving and organizing documents:

- If several people are creating and saving documents, document names are likely to reflect the individual styles of their authors.

- A scant 11 characters are allowed for naming documents (a maximum of eight characters to the left of the period, and a three-character filename extension). This limits the extent to which you can

assign recognizable and meaningful names to your document files.

- The subdirectories required to adequately categorize documents can become unwieldy as the number of documents increases.

- Q&A's ability to search for Write documents is severely limited when compared to its database searching capabilities.

- Although you can attach descriptions to your Write documents (by pressing F6 while in the List Manager), you can't search on these descriptions to find the document you need.

Fortunately, there are other ways to search and retrieve documents stored on disk. One technique

C O N T E N T S

README.1ST

This month you'll find an outstanding array of techniques to help you work smarter with Q&A.

First, **Jeff Nitka** shows you how to use a database as a kind of library card catalog for your letters, memos, and other Write documents. Find out how to store key information about your documents—along with copies of the documents themselves, if you like—so you'll be able to search for them as easily as any database record.

Speaking of searching, sometimes you need multiple search parameters to retrieve the information you need. Though this is a simple enough task for a Retrieve Spec, it's out-of-bounds in an XLookup command unless you know the workaround. In a second article, Jeff reveals his secrets for extending the reach of your XLookups.

Q&A for DOS doesn't provide tools for creating and printing sophisticated forms, but a third-party product does. Working hand-in-glove with your Q&A data, PerForm for DOS lets you print your data in snazzy forms containing graphics, shading, fancy fonts, and more. And, as **Mike Bell** shows, you can integrate the two programs to work as one.

Bill Halpern helps you build a nifty "desktop" calculator to compare your prices with the competition's. His technique is instructive for creating other kinds of database calculators as well, and for situations when you need to input your data in a spreadsheet-like form.

Finally, I'll show you how to maintain a running transaction history in a customer database. This way, when you need an up-to-date chronology of billings and payments, you won't have to run a report or rummage through the transaction file. The information you're looking for will be right there in the customer's record.

During the past several months, I've alluded to the possibility of a Q&A upgrade. All indications are that next month I'll be able to bring you big and *definite* news. If you've been dreaming of more powerful data manipulation tools and expanded relational-like features, stay tuned.

Tom Marcellus
Editor

Q&A User Group Bash Set for Mid-September

Plan now to attend the National Q&A User Group's 5th Annual Bash, September 15–17, 1995, just outside Washington D.C. Hobnob with fellow Q&A enthusiasts, meet and hear top Q&A developers, and attend solution-oriented seminars and workshops. Bring your nagging Q&A questions and brilliant solutions. Spend three relaxed and informative days with a fun-loving user group. Registration is $45 for *The Quick Answer* subscribers (includes user group membership). Call 301-963-6377 for a fax-back flier containing the details.

MARBLE
PUBLICATIONS

Documents Catalog

Continued from page 1

involves setting up a database to store information much like a library card catalog. In a typical card catalog, each card shows the author's name, the title, and where the publication can be found. The database (call it CATALOG) that I'll use to illustrate the technique is similar, except that each record in the database stores an entire document along with its related information, not just the document's location. Figure 1 shows what CATALOG's simple form design looks like. The Date Written field is formatted for dates, while the Customer, Person Addressed, Subject, Written By, and Letter fields are formatted for text. You can add any other fields that might help you better identify and find your documents.

Using CATALOG

To use the CATALOG application, you compose your document in Write in the usual way. Once you've printed and saved it, make a note of its filename and the subdirectory where it's stored. (If you save the document to your default documents subdirectory, then you have to note only its filename.)

When you've saved the document and noted it's filename, you catalog it by adding a new record to the CATALOG database. You can set default field values

What About Q&A for Windows?

Unlike Q&A for DOS 4.0, Q&A for Windows doesn't include commands for inserting a Write for Windows document into a database field. However, you can easily do so by taking advantage of Windows' Clipboard.
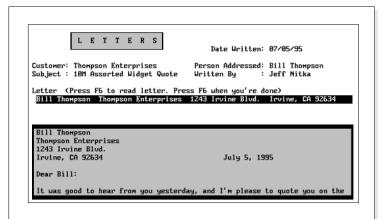
With the document onscreen in Q&A Write, select the text by highlighting it, then pull down the Edit menu and select Copy to copy it to the Clipboard. Switch back to your current database record (or start a new record), click on the Letter field, pull down the Edit menu, and select Paste to insert the document into the field. If necessary, the field expands to accept the document. You can then save the record in the usual way.

With your documents stored in this manner, you can search and retrieve them as easily as you can in Q&A for DOS, including searching on keywords, names, numbers, dates, or phrases in the Letter field. —*T.M.*

for the Date Written and Written By fields or use the Restrict Spec to create a list of persons who write documents that wind up in CATALOG.

Next, you need to insert the letter into the expandable Letter field. To do this, perform the following steps, recording them in a macro to automate the process. Open the CATALOG database in Add Data mode, and Q&A will display a blank data entry form. Here are the steps to record in the macro:

1. Press Shift-F2, select Define Macro, and type the macro identifier (or press Enter if you want to assign a name to this macro with no macro identifier).

2. With the recorder running, move the cursor to the Letter field, and press F6 to expand it. Press F8 for the Options menu, select Document, then select Insert a Document. Q&A will prompt for the filename.

3. Press Alt-F2 to pause the macro, so you can select the document to be inserted.

4. Type in the path and filename of the document you want to insert in the current CATALOG record. For example, if the document is saved as DOCUMENT.001 in the QA4 directory, just type DOCUMENT.001. If it's saved in a non-default subdirectory named PRICES, type PRICES\DOCUMENT.001.

5. Press Alt-F2 to resume the macro, press Enter to insert the document, then press F6 to close the expanded field. The document is now in the database. Press Shift-F2 to end recording and save the macro.

Figure 1. A sample CATALOG record. Here the Letter field is expanded, showing the top portion of the inserted document. You can scroll through the document using the mouse or arrow keys.

If you haven't already done so, enter the information in the other fields. These fields will help you find and display the document you've just inserted. To make record retrieval easier and more consistent, don't leave any fields blank. When you've filled in all the fields, save the record and exit by pressing Shift-F10, or save the record and add another one by pressing F10.

Retrieving documents

You can now retrieve and sort any number of documents according to whatever parameters you need. You can retrieve documents by company name or addressee, by topic, by date range, or by writer.

One particularly powerful and handy feature is that you can search the database on the Letter field for any document that contains a keyword or key phrase. For example, at the Retrieve Spec, you can type *..content..* in the Letter field and press F10. Q&A will retrieve all the records that contain the word *content* in the Letter field.

If you designed the Letter field to be 15 lines, you'll be able to read approximately the first third of the first page without having to expand the field. To see the rest of the document, you can press F6 to expand the field, so you can scroll down through the document. If you need a hard copy, you can print the document without leaving the record. See the sidebar, "Printing a Document Stored in a Database Field."

Other issues

There are a couple of possible drawbacks to this application. The most notable is that you're duplicating data every time you copy a document into the database and leave the original document on disk. Unless your hard disk has lots of room, this undesirable situation can be remedied by deleting the original document once you've added it to CATALOG, although it will take extra work should you later need to reprint the letter. If your experience is anything like mine, you'll rarely, if ever, need to reprint a document once it has been mailed or faxed. What you'll need is a quick way to display the

Printing a Document Stored in a Database Field

One of the potential inconveniences associated with storing documents in a database is that although the text and paragraph formatting is maintained, you lose any enhancements, such as fonts, boldface, and headers. This won't be an issue unless you normally add enhancements to your documents or you need to reprint the enhanced original that you've deleted from the hard disk.

To print a document stored in a database record, retrieve the record, then move to the field that contains the document. Press F6 to expand the field, then press F2 and F10 to print. Make sure you expand the field before printing; otherwise, Q&A will print the entire record. —*T.M.*

document to verify what you told the client or answer a question.

Another minor point is that a Q&A database field can store only up to 32K, making it unable to handle lengthy documents. On the other hand, my experience is that most documents, unless they're technical, legal, or medical, contain far less than 32K, which works out to 15 or so pages of text.

Using the application as a card catalog

You can avoid duplicating the document in the database by using the database to catalog only the paths and filenames of your documents. In other words, instead of placing your documents in the database, simply store their locations on disk, along with whatever other pertinent information might help you quickly identify and retrieve them. This way, you can use the database as you would a real library card catalog. Once you've searched the database by whatever criteria is appropriate and have determined the document's name and location, it's a simple matter to switch to Write, and type in the path and filename to display it. With this approach, you avoid duplication of data on your hard disk, though you'll need several additional steps to find and display the document.

I've developed both versions of the application for several clients, most of whom have found the first approach more to their liking. I prefer the first approach as well. It makes retrieving and reviewing documents much easier and faster, and I've had no regrets after deleting the original documents once they've been mailed or faxed.

[For more tips and tricks on using databases to store and manipulate documents, see "Create and Use a Memo Database" in the November 1993 issue and "Streamline Cost Quotations with a Powerful, Automated System" in the April 1994 issue. Copies of these back issues are available from Marble Publications.—Ed.]

Jeff Nitka is pursuing a mathematics and computer science degree at Rutgers University in New Jersey and works part time as a software developer. Epoch Software, 908-874-3989.

@HELP

Fix Mysterious Corruption

DOS | WIN

One of my Q&A databases is experiencing corruption. An uninterruptable power supply (UPS) is connected to the computer, so power fluctuations aren't the problem. The symptoms occur at least once a day. Someone enters a record and saves it with Shift-F10. The person then tries to print a label for that record, and Q&A claims the record doesn't exist. The Retrieve Spec for the label is Max1 in the Record Number field, and that field is auto-filled during data entry with @Number. But if the person types the Record Number in the Retrieve Spec, Q&A finds it. What's going on?

Denny Tretiak, Nipawin, Saskatchewan

This could be a problem with the index for the Record Number field. To rebuild the index, go to the Main menu and select File / Design a File / Customize a File. Enter the name of the database, then choose Speed Up Searches. The Record Number field probably contains an S. If so, remove the S and press F10. (If not, just press F10.) Again, choose Speed Up Searches. This time, type the letter S in the Record Number field, press F10, and Q&A will reindex the field. If you have thousands of records, it can take a few minutes. Don't interrupt the process for any reason. The MAX1 Retrieve Spec should then work for all records.

Check for Overdue Accounts

DOS | WIN

I process and track orders using a multifile Q&A application that includes an invoice, customer, and inventory file. I also use an accounts receivable database (ACCREC.DTF). When a collector calls a client about unpaid invoices, a new record is added to ACCREC, which contains a Date Invoice Paid field. If this field is blank, it means the debt is still outstanding. I'd like to add a feature to my application. When a new invoice is being created, I want Q&A to check the ACCREC file for a record from that customer where the Date Invoice Paid field is still blank. If one is found, a message should appear saying "This client has overdue Invoices—please get manager approval before shipping this order." Can I do this?

Larry Seale, Tulsa, Oklahoma

You can. Add an Unpaid Cust Num field to ACCREC. You can place the field on of the back pages of the

form, or in an out-of-the-way place. Then, add the following programming to the ACCREC Program Spec:

```
Cust Num: >If Date Invoice Paid = ""
              Then Unpaid Cust Num = Cust Num

Date Invoice Paid: >If Date Invoice Paid = ""
              Then Unpaid Cust Num = Cust Num
              Else Unpaid Cust Num = ""
```

No programming is required in the Unpaid Cust Num field.

Make the Unpaid Cust Num field Speedy, so it can be used as the key field in an XLookup. Also, execute this programming on all your existing overdue records. When you add a record, the program copies the Cust Num to the Unpaid Cust Num field. When you enter a date in the Date Invoice Paid field, the program blanks the Unpaid Cust Num field. All you have left to do is program the proper check in the Invoice file. I'll assume you'll want to perform this check as soon as the Cust Num is entered in the invoice:

```
Cust Num: >If @XLookup("ACCREC", Cust Num,
    "Unpaid Cust Num", "Unpaid Cust Num") <> ""
    Then @Msg("This client has overdue Invoices.
    Get manager approval to ship order.")
```

The XLookup searches for this customer's number in the Unpaid Cust Num field. The Cust Num of a customer who has had overdue invoices but has paid them will no longer be in the Unpaid Cust Num field; whereas, the program will find customers who have one or more unpaid invoices and display the message.

Delete Q&A Write Files

WIN

I use Q&A Write for Windows and Q&A for DOS. I like the way I can delete files without leaving Q&A for DOS. Is there a way to delete document files without leaving Q&A Write for Windows; that is, without having to use Windows' File Manager?

Linda Croft, Tennessee

No. Q&A Write for Windows doesn't have a similar capability. Actually, Q&A for DOS's ability to delete files while viewing them in a list is more than DOS can do. In Windows, this job belongs to File Manager, so Q&A Write for Windows would only be duplicating this functionality. You can, of course, go to File Manager without quitting Q&A Write—it's one of the joys of using Windows. Simply minimize Q&A Write, open File Manager, delete the file, then maximize Q&A Write.

Update Imported Records

DOS | WIN

We've eliminated manual data entry by importing

data from ASCII files. The Q&A file receiving the data contains a lot of programming we need to execute on each imported record. I can't find a way to run the programming statements during the import. I've tried to Mass Update the records following the import, but nothing happens. And I don't want to go through all 2000 records one at a time, pressing F8 on each one. Do I have any options?

Dick Parker

Q&A can't execute programming during an import, so your best bet is to use Mass Update. After importing the records, go to Mass Update for this file. If you want to update all the records, leave the Retrieve Spec blank. Otherwise, enter the restriction that selects the records just imported. Press F10. At the Update Spec, press F8 to set your Calculation Options, set each of the options to Yes, then press F10 to begin the Mass Update. Q&A will display a record count indicating its progress through the file. Because the three Calculation Options tell Q&A to execute the programming in the Program Spec, the process does the same thing as pressing F8 on each record.

Create a Default Return Address WIN

Whenever I create an envelope in Q&A Write for Windows, I click in the upper left corner of the envelope and type my return address. It's beginning to get tiring. Is there a way to have Q&A add my return address automatically?

Bryan Cox, Minnesota

Yes. You can set the return address as a Preference. To do this, pull down the File menu and select Preferences. From the submenu, select Envelope. The Envelope Preferences dialog box contains a box named Return Address for Envelopes. Type your return address there and click OK to save the settings. The next time you create an envelope, Q&A will enter the return address for you. This won't effect envelopes already created for existing documents.

Dave Reid is a Symantec senior support analyst providing second-level assistance to the technical support representatives. He's also the coauthor of The Q&A 4.0 Wiley Command Reference, published by John Wiley and Sons, and works as an independent Q&A consultant. PO Box 12083, Eugene, OR 97440.

QUICKTIP

Maintain Accurate History Records

Q&A's Mass Update features let you update all or a group of records in the database at one time. One often cited example is applying a uniform price increase to all the items (or a subset of them) in an inventory database. For example, to raise your prices by 7 percent, your update program would multiply the current price field by 1.07. Easy enough. But if you use a sales transaction database that retrieves prices from the inventory database, you could be setting yourself up for trouble unless you take an additional step in your transaction database.

The problem is this: Suppose a customer calls and asks you to verify the prices on an order from last year, or your accountant needs your gross sales figures from two years ago. If your programming in the transaction database just looks up the prices in the inventory database in the usual way, as in the following typical program, anytime you change the transaction record, the program will change its prices to the current price, rather than leaving the prices at which the items or services were actually sold:

```
#10: XLookup("Inventry", Part#, "Part#", "Price", Price)
```

You want to make sure your records maintain the information current at the time the record was created. You can do this by adding a simple If/Then condition to your program. Just change the above program to this:

```
#10: If Price="" Then
  XLookup("Inventry", Part#, "Part#", "Price", Price)
```

The If/Then qualifier ensures that Q&A looks up the price only when the Price field is blank, such as when you've added a new sales order or deliberately blanked the Price field in order to retrieve the current price. The second part of the statement (Then) is executed only if the first part (If) is true. You'll find other situations where this kind of If/Then logic is useful, such as with customer credit card numbers, expiration dates, quantities on hand, dates, sales reps, shipping addresses, and so forth. By incorporating If/Then logic in your programming in this manner, your records, recent or historical, will always reflect the data current at the time they were created.

William Halpern

Review:

Print Your Data in Professional-Looking Forms

You can print your Q&A data in sophisticated forms with graphic elements, shading, fancy fonts, lines, and boxes. You don't need Windows, your users don't have to learn anything new, and you can control printing without leaving Q&A.

By Michael Bell

I'M an attorney, and for years I've been printing my Q&A database information in sophisticated forms, such as the Department of Housing and Urban Development's HUD1-A form shown in Figure 1. It's so easy that I feel guilty for not having shared my secret with you sooner.

The secret is integrating Q&A with PerForm 2.1, a powerful forms creation package from Delrina, maker of the popular WinFax Pro. Though PerForm 2.1 runs under DOS, its Windows-like graphical interface makes it a snap to design just about any form you could imagine, right down to the smallest detail. And because you can place fields on your forms, you can fill them with information from your Q&A database.

To make PerForm even easier to use, you can pass your merge printing instructions to it from a DOS batch file. This way, you can launch PerForm from Q&A with instructions on what to print, then be returned to Q&A when printing is finished. Q&A and PerForm work together smoothly, even for the most complex form printing tasks.

PerForm Features

PerForm 2.1 includes these three modules:

- PerForm—the graphical mouse-driven interface you use to create forms from scratch or customize the predesigned forms that come with the package.

- PerFill—the data entry module you use to type the data to merge with your form. You won't need this module if you're using your Q&A data.

- Output—the printing module that merges your Q&A data and prints the form. PerForm creates .GEM output files so that lengthy and complex forms can require up to 2M of printer memory.

Figure 1. An 8.5 x 14-inch HUD1-A form created in PerForm 2.1 for DOS, then auto-filled with data from a Q&A for DOS database.

Inside PerForm

PerForm comes with more than 100 ready-to-use fillable forms, including bills of lading, invoices, purchase orders, credit and employment applications, government forms, health and dental insurance claim forms, work orders, time sheets, quote forms, and more. Additional pre-designed form packages are available separately.

PerForm imports graphic images—company logos, for instance—in popular formats like .TIF, .PCX, .GEM, and MacPaint. Though PerForm runs under DOS (it even runs on an XT), you work with your forms in a true WYSIWYG graphical environment. The program is fast, flexible, and its output quality is superior. Full installation, which isn't required to merge print an existing PerForm form with Q&A data, takes only 3.5M of disk space.

Creating forms and fields

PerForm makes it easy to create attractive forms with fillable fields. You position and size your fields and graphical elements by clicking and dragging them onto the form. To assign attributes to a field, you double-click on it. You can then designate it as a fixed or fillable field; assign a field name and type to it (text, number, money, date, and so forth); choose the justification you want; then apply your font, enhancement, or other appearance attribute. Though you do this a field at a time, PerForm lets you assign attributes to groups of fields. A handy *comb* feature lets you quickly create duplicate boxes for invoice line-items and the like.

PerForm's *tab order* (the order in which the form's fields are filled) defaults to the order in which you added the fields to the form, but you can easily change it to accommodate the same order the data will flow in from your Q&A export file.

Create the Q&A export procedure

To get the most from PerForm, you'll want to create a push button procedure that does all the work, including creating the export file containing your Q&A data, launching PerForm, merge printing the selected form(s), and returning you to Q&A.

If you're exporting all the fields from your database and the tabbing order of your PerForm form matches the order of the fields in the database, you won't need to fill out a Merge Spec.

Otherwise, select File / Export / Standard ASCII, and enter the database and export file names. Press F10 to bypass the Retrieve Spec, and at the Merge Spec, number the fields in the order you want them in the export file. (Press F1 from the Merge Spec for

online help.) The export order must match the tabbing order in the PerForm form you're using. When you've filled out the Merge Spec, press Shift-F8, assign a description to it, and save it.

Create the batch file

To pass your merge printing instructions to PerForm, you'll need a DOS batch file you can install as an alternate program on Q&A's Main menu. The batch file I use to print my HUD1-A form looks like this:

```
FPRINT $O C:\FORMS\OFFICE\FAX1.FRM $DELIMITED
C:\QAFILES\TOFORM.TXT C:\QAFILES\TOFORM.FIL
```

The first part of this batch file invokes PerForm's FPRINT program and specifies the form (.FRM) to be printed. Be sure to include the full path name. The $O switch specifies that the form and data file are to be merged. (You can optionally print empty forms for filling out manually).

The $DELIMITED parameter tells PerForm that the data file is a delimited ASCII file. PerForm's default import format is comma delimited ASCII with quotes around values and a carriage return between records. This happens to be Q&A's default export format, so no additional file manipulation is required to merge your Q&A data with PerForm forms.

The paths and filenames are specified next—the ASCII (.TXT) export file generated by Q&A, followed by the fill (.FIL) file that PerForm creates from the .TXT file to merge with the form (.FRM) file.

Before you create your batch file in Write, be sure your page width for imported documents is wide enough to allow the entire batch file command to fit on one line. To access the Define Page for Imported Documents screen, choose Write / Utilities / Set Global Options / Change Import Defaults. Be sure to save the batch file to ASCII format by pressing Ctrl-F8.

Installing the batch file on the Main menu

To install the batch file as an alternate program on Q&A's Main menu, select Utilities / Set Alternate Programs. On an available Alternate Program line, type the path and name of your batch file, such as C:\QA4\FORM.BAT. On the Menu Selection line, type in the text you want to appear on the Main menu, such as *1 - Forms.* Press F10 to save your changes, and Q&A will add your new selection to the Main menu.

Record the macro

Finally, record the macro that automates the export and merge printing process. Have the macro pause for you to fill out the Retrieve Spec portion of the

export procedure, so you can choose the record(s) you want merged with the form. You can create batch files and macros that merge single databases with single forms files, single databases with multiple forms, multiple databases with single forms, and multiple databases with multiple forms.

You can set PerForm's Output module so it prints immediately when invoked, or pauses for manual input. When preparing to merge print a form, if PerForm finds an existing .FIL file by the same name, it pauses for you to tell it whether to overwrite the file, append the new data to it, or cancel the procedure. To avoid this interruption, my Q&A macro deletes the existing .FIL file before invoking PerForm. Here's the macro I use to automate the form printing process. Its final action runs the 1 - Forms selection on the Main menu that invokes the batch file:

```
<begdef><nokey><name>"print<sp>form"<vidon><esc><esc>
<esc><esc><esc>wg<capsf4>c:\qafiles\<enter>toform.fil
<f3>y<esc><esc><esc><esc>fues<capsf4>c:\qafiles\
topform<enter>toform.txt<enter>y<wait><enter><f10><f10>
<esc><esc><esc><esc>1<enddef>
```

You can structure your macro in whatever way works best for you, and change PerForm's defaults to accommodate your needs. For example, if you're merging several databases with multiple forms, you can add pauses to the macro to select each database in turn, along with their related saved Merge Specs.

If you use forms in your business and want your Q&A data in the best-looking forms you can get, you can't go wrong with PerForm 2.1 for DOS.

Mike Bell, an attorney in Rockville, Maryland, is president of Marble Publications, Inc. and publisher of *The Quick Answer*. He's also creator of the Q&A for DOS Turbo Pack and president of the National Q&A User Group. Prodigy NEPY97A, CompuServe 73370,1575.

QUICKTIP

A Clipboard for Q&A for DOS

<div style="text-align:right">DOS</div>

If you run Q&A 4.0 for DOS in Windows 3.1, not only can you quickly switch between your programs by pressing Alt-Tab, you can take advantage of Windows' Clipboard to copy and paste text between Q&A and other applications. For example, you might want to quickly copy an address block, a programming statement, or other Q&A text to paste elsewhere.

With Q&A for DOS running full screen, press Alt-Spacebar to run it in a window and display the Window Control menu. (Alt-Enter switches to window mode but doesn't display the Window Control menu.) Figure 1 shows a Write document in a window with its Window Control menu displayed.

You can display the Window Control menu by clicking on its icon in the upper left corner of the Q&A for DOS window (or you can press Alt-Spacebar). To copy a block of text to the Clipboard, click on Edit, then click on Mark (or press E then K). Use your mouse to highlight the text you want to copy (or position the cursor, then hold down the Shift key while using the cursor keys to select the text) and press Enter. You can press Alt-Enter at any time to switch back to full screen mode.

The text you selected is now in the Clipboard. You can paste it into any Windows application by pressing Ctrl-V or by using the Paste command from the Edit menu, which is available in most Windows applications. Or, you can paste the text into another DOS application running in a window by using the Edit and Paste

commands on the Window Control menu as shown in Figure 1.

Q&A 4.0 for DOS comes with two Windows Program Information files (.PIF), QA1MB.PIF and QA640K.PIF, and a Windows icon file (QA.ICO). (You can see the Q&A for DOS icon just outside the upper right corner of the window in Figure 1.)

While running Q&A for DOS in a window, you can size and move the window, and select a larger or smaller font. To change font size, choose Fonts from the Window Control menu. Running Q&A 4.0 for DOS in Windows doesn't prevent you from running it in DOS in the usual way.
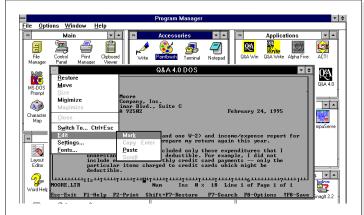
Tom Marcellus

Figure 1. A Q&A for DOS Write document in a window. (Windows' Program Manager is in the background.) You can mark, copy, and paste text between DOS apps running in Windows. Press Alt-Enter to return to full screen mode, or click outside the window to minimize Q&A.

Use Posting to Maintain Transaction Histories

Have fast access to a summary of customer transactions by posting them to a history field in the customer file.

By Tom Marcellus

DOS

I N the June 1995 *The Quick Answer* (page 8), Dave Reid described how to use an expanded field to store a history of changes to a patient's medical record. You can adapt this technique to post transactions to a history field in your customer record.

Figure 1 shows a simplified invoice form (without the line-items). We want to post Date, Invoice No, and Amount to the matching customer record (see Figure 2) so we'll have an up-to-date transaction summary for the customer without having to create and run an invoice report.

You'll need three fields, a little programming, and a Posting Spec. Here are the steps:

1. Add a text field named *Post to Trans History* to the invoice file (See Figure 1) to serve as the *source Post field*. Add a programming statement, such as the following, to execute when the Invoice No, Date, and Invoice Amount fields have been filled.

```
> Post to Trans History = @Str(Date) +
  " Invoice " + @Str(Invoice No) +
  " $" + @Str(Invoice Amount)
```

2. Add two text fields to the customer database, *Last Trans* and *Trans History*. (See Figure 2.) *Last Trans* serves as the *target Post field*, and *Trans History* stores each transaction as a line-item. Add a programming statement such as the following to the *Last Trans* field:

```
#100: If Last Trans <> "" Then
   {Trans History = Trans History + "
" + Last Trans; Clear(Last Trans)}
```

Be sure to press Enter after typing the double quote mark at the end of the second line. This ensures that each transaction in the *Trans History* field appears on a separate line.

3. Create and save a Posting Spec to post the last invoice (or the last group of unposted invoices) to the customer file. Fill out the Posting Box as follows:

```
Post the Value of field:   Post to Trans History
... into external field:   Last Trans
When the field: Acct No
... matches the external field Acct No in CUSTOMER.DTF
Operation: Replace
```

Before naming and saving the Spec, press F8 to display the Auto Program Recalc screen, and set Calculation Statements to Yes.

How the procedure works

When you enter an invoice, the programming creates a summary of the transaction by copying the Date, Invoice No, and Invoice Amount to the *Post to Trans History* field. Your Posting Spec then posts this value to the *Last Trans* field in the matching customer record, where the programming copies it to *Trans History*.

You can adapt this technique to add payments to the Trans History field as well. The customer's record can then show invoice billings as well as payments against those invoices, all in chronological order.

Tom Marcellus is editor of The Quick Answer *and author of* PC World Q&A Bible, *published by IDG Books.*

Figure 1. An invoice record for Mitchell and Company, account number MITCH46311. Note that the Post to Trans field contains the Date, Invoice No, and Invoice Amount.
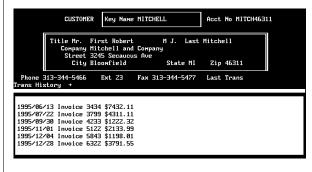

Figure 2. The customer record for Mitchell and Company after the transaction has been posted.

Using XLookups with Multiple Search Criteria

Ever try to retrieve information from an external file based on *two* matching fields? Q&A's family of XLookup commands won't let you do it, but you can work around the limitation.

By Jeff Nitka

DOS WIN

Q&A's Retrieve Spec lets you enter multiple parameters to search for the database records you need. For example, you can type *..Smith* in the Customer Name field, and *NJ* in the State field to find your customers in New Jersey that end in Smith. Multiple Retrieve Spec parameters help you refine and narrow your searches.

Unfortunately, Q&A won't allow you to specify multiple key value parameters in XLookup programming statements designed to retrieve information from other databases. If you want to use XLookup to retrieve a value from another database, you're limited to only one value as the matching key value.

Going about it another way

Using a workaround, however, you can successfully include multiple key values in XLookup statements and @XLookup functions. This way, your external lookups can find the matching record in the other file based on two or more values in it. The technique isn't complicated. It involves adding a new field to the external lookup database (the database from which the Xlookup retrieves its information) and programming it to store a concatenated value that represents the fields crucial to the search.

For example, if you concatenate Account No 3455 and Part No H34XX in the lookup database, you get the new combined value 3455H34XX. Your XLookup can search for this concatenated value and, if found, return the information you need from that matching record. In effect, you're using multiple search parameters in a programming statement, which can help you more effectively restrict your searches.

The technique works equally well in Q&A for DOS and Q&A for Windows, though I'll focus on Q&A for DOS. I'll demonstrate using a common example where the prices a company charges for some or all of its products vary depending on the customer who is purchasing them. Customer A, because he or she is a high volume customer and lets you win at golf, might receive a lower price on certain items. Customer B, who gives you a piddling order and expects you to deliver it within the hour, pays the regular price, and so forth. Other uses for the technique include retrieving a customer's address when the customer has one account number but more than one shipping address or retrieving information on a particular lot number for a certain product code.

Database design

In this simplified example, the external lookup database stores records of items and prices by customer number. Here are the fields along with their formatting codes for the sample ITEMS database:

```
CustNo   :  T
Cust Name:  T
ItemNo   :  T
Price    :  M
```

Suppose you enter data in another database that stores information about customer orders. Such a database named ORDERS might include these fields:

```
CustNo          : T
Cust Name       : T
ItemNo          : T
Price           : M
Quantity Ordered: N
Extended Cost   : M
```

Let's assume you're adding a new record to this second database. You'd first enter the customer number in the CustNo field, and your XLookup program would retrieve the Cust Name from your customer name and address database. You enter the ItemNo next. On exiting the ItemNo field, your XLookup program retrieves the price of the ItemNo for the specific CustNo, and the Extended Cost is then calculated using the data now in the record.

Changing the information in a record is no problem. No matter which fields you edit, the programming maintains the integrity of the data in the record.

Redesigning the files

To incorporate the multiple Key value XLookup technique, choose Redesign a File and add a new CustNo-Item field to the ITEMS database. It now includes these fields:

```
       CustNo: T
    Cust Name: T
       ItemNo: T
        Price: M
 CustNo-Item: T
```

Save your redesign, go to the Program Spec for ITEMS, and enter the following field ID numbers and programming:

```
CustNo:      #1
ItemNo:      #2
CustNo-Item: #3: #3 = #1 + "*" + #2
Price:       #4
Cust Name:   #5
```

Before you save your new Program Spec, press F8, and enter the number 3 in the On Exit Field ID line. Press F10. This tells Q&A to execute the program in field #3 when you save the record and ensures that the CustNo-Item field always contains the concatenated CustNo and the ItemNo values separated by an asterisk. Press F10 to save the Program Spec.

Customize the file

To add more reliability to the database, you should further customize it. Go to the Customize File menu for ITEMS and choose Restrict Values. In the Restrict Spec, type an exclamation point (!) in both the CustNo and the ItemNo fields. This way, you won't be able to save a record if either the CustNo or ItemNo fields is blank. Next, go to the Speed-up Spec (also on the Customize menu) and type an S in the CustNo-Item field to make it Speedy (indexed).

It's now time to return to the primary ORDERS database to program it for your restricted lookups. The programming is as follows:

```
CustNo: >#1: Goto #3

Cust Name: #2

ItemNo: >#3: Goto #5

Price: #4: If #1 <> "" and #3 <> "" and #5 <> ""
    Then {
    XLookup("Items",#1+"*"+#3,"x#3","x#4",#4,
    "x#5",#2); #6 = #4 * #5
    }

Quantity Ordered: >#5: Chome

Extended Cost: #6
```

Press F10 to save the Program Spec. Now, go to the Restrict Spec and type an exclamation point in the CustNo, ItemNo, and Quantity Ordered fields to make them required. This ensures that your records

Caveat User

There's one drawback to this technique. Because XLookups check only the first 15 characters in the external key field to determine if there's a match, the number of fields you can reliably search on is limited. For example, if customer numbers are normally five characters, your item numbers are six characters, and you add the "*" that serves as the value separator, then you have only three characters remaining to further restrict the search. If the concatenated field value exceeds 15 characters, your XLookup won't be reliable past the 15th character.

always include the information required for the XLookup and that the Quantity Ordered field isn't left blank if the XLookup fails and you try to save the record anyway.

While you're at it, you should make the Cust Name, Price, and Extended Cost fields read-only since the information they contain is wholly dependent on the XLookups. (Read-only fields is on the Programming menu.) Finally, change the Calc mode in the database to automatic. To do this, open the database in Add Data mode, but before entering any data, press Shift-F8, select Automatic, then press Enter.

The technique in action

When you add a record to the ORDERS database, you first enter the customer number. Because your Restrict Spec requires a value in this field, Q&A won't let you continue until you've entered one. The same is true for the ItemNo and Quantity Ordered fields. Once you've filled these three fields, the program in field #4 (Price) executes, and the Price and Extended Cost appear in their respective fields. If you're finished with the record, you can press F10 to add a new one, or press Shift-F10 to save the record and exit. If you feel you've made a mistake in any field, simply return to the field and enter the new data. The program will recalculate the Price and Extended Cost fields automatically. The XLookup statement in field #4 (Price) searches the external ITEMS database for the concatenation of fields #1 and #3. Here's the matching search key , which is how the unique key value in the ITEMS records is structured:

```
#1 + "*" + #3
```

If the search fails?

If you receive a message indicating the XLookup has failed, one or more of the following errors has occurred:

- The CustNo value you entered is incorrect.

- The ItemNo value you entered is incorrect.

- Both the CustNo and ItemNo values are incorrect.

- The external database doesn't contain a record that matches the CustNo and ItemNo values.

To check a failed XLookup, try reentering the data after you've made sure it's correct. If the XLookup is still unsuccessful, then check the external file to verify that a matching record actually exists.

I often incorporate this technique in my XLookups because the information I need to retrieve can depend on the data in more than one field. I've used this technique to determine if a purchase order for a customer already exists, if a lot number for a product has been reserved for a customer, if a

different price structure exists for a customer, if the customer has multiple shipping addresses, and so forth. Once you've added the concatenated field to the lookup database along with the programming, you'll welcome the increased data entry ease and reliability it brings.

Jeff Nitka is pursuing a mathematics and computer science degree at Rutgers University in New Jersey, and works part time as a software developer. Epoch Software, 908-874-3989.

QUICKTIP

Separate Date Components

When working with date values, it's important to remember that Q&A stores dates internally in the format *yyyy/mm/dd*, where *yyyy* is the year, *mm* is the month, and *dd* is the day. For example, Q&A stores January 1, 1995, as 1995/01/01.

The following programs show how to extract a date's components, assuming you have fields named Date, Day, Month, and Year:

```
Day   = @Right(Date, 2);
Month = @Mid(Date, 6, 2);
Year  = @Left(Date, 4);
```

If you're using the @Date (current date) function instead of a Date field, modify your program like this:

```
Day   = @Right(@Date, 2);
Month = @Mid(@Date, 6, 2);
Year  = @Left(@Date, 4);
```

If you want only the last two digits for the year, change this:

```
@Left(@Date, 4)
```

To this:

```
@Mid(@Date, 3, 2).
```

[You can also use Q&A's built-in date functions to parse a date value. Here's a program to separate the day, month, and year from the date in the Date field:

```
Day=@Dom(Date); Month=@Month(Date); Year=@Year(Date)
```

Use @Dom$ and @Month$ if you want Q&A to return the full name of the day or month, such as Tuesday or July.

Incidentally, Q&A stores dates in the yyyy/mm/dd format for a very good reason: so their chronological order matches their alphanumeric order for sorting and other date operations.—Ed.]

David Dvorin, Phoenix Solutions, Somerset, New Jersey

Amplification

Program Spec field ID numbers were inadvertently omitted from "Create and Print Invoices with Unlimited Line Items" in the May 1995 *The Quick Answer*. The field ID numbers are as follows:

```
ROLODEX.DTF            INVOICE.DTF
CustNo: #1             Transaction No: #1
Name: #2               Date: #2
Address1: #3           Cust Number: #3
Address2: #4           Customer PO#: #4
City/St/Zip: #5        Product Description: #5
                       Quantity Ordered: #6
HISTORY.DTF            Cost: #7
InvNo: #1              Extended Cost: #8
Date: #2               Line No: #9
Max: #3
Customer: #4
CustNo: #5
```

```
(HISTORY.DTF, continued)
Q1 through Q0: #10 through #19
Des1 through Des0: #20 through #29
C1 through C0: #30 through #39
Ex1 through Ex0: #40 through #49
PO#: #51
OrdDate: #52
Total: #50
```

In the eighth paragraph of the second column of page 5, ". . . in reverse transaction number order . . ." should read ". . . in reverse LINE NO order . . ." We apologize for any inconvenience the omission and error might have caused.

Create a Price Analysis Calculator

How does your price for a good or service stack up against the competition? What's the average market price? "What if" you raised your price a bit? Lowered it? This valuable information, and more, is instantly available with a handy "desktop" calculator you can assemble in half an hour.

By William Halpern

DOS WIN

To survive in the business world, you have to be competitive. A fair market selling price doesn't mean you're competitive. You might be pricing yourself out of the market or selling far below what the traffic will bear.

Performing a competitive price analysis on a range of products or services can be tiresome and tricky. You could benefit from a handy calculator that performs a market comparison and analysis for you and allows you to play "what if" with your pricing. Such a calculator should let you see at a glance where your prices stand with respect to the competition and how a fair market price might affect your bottom line. You can create a Q&A database, such as my SALECOMP.DTF, to perform the number crunching and display the comparative data. (See Figure 1.) Though the database shown here was created in Q&A for DOS, you can create it in Q&A for Windows as well.

SALECOMP lets you to enter your selling price for a given item, along with up to four competitor's prices and the dates those prices were valid. The database then calculates the multiplier or percentage of each competitor's price against your calculated selling price. If you've entered one or more competitive prices, it also calculates an overall average competitive price (the Mkt Avg Price field) along with the average market percentage related to your selling price.
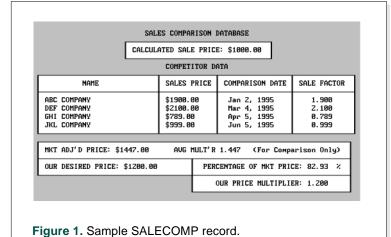
(You can add features to the database to calculate costs based on time, materials, labor, overhead, processing, and so forth).

While reviewing the data, you can plug in (in the Desired Price field) what you feel might be a good selling price for the item. SALECOMP then reveals where you stand in relation to the average market price (Percentage of Market Price) and your original calculated selling price (Our Price Multiplier). If the figures aren't appealing, you can change the desired price and the database recalculates the comparisons.

You can add another competitor's price or drop one from the list, and the database recalculates the comparisons. The only requirement is that for a competitive analysis, there must be an entry in the first line of the Competitor Data table.

With some minor modifications, SALECOMP can handle any number of competitive pricing comparisons, and no matter how many fields you add for comparison, the calculated averages will be based only on those you fill in. If you have no competitive data, the database sets the average multipliers and prices equal to 1 and your price, respectively.

You can use the various calculation results in other databases, such as a sales transaction database. You can change your desired price, add, change, or delete competitive data, and the database will continue to perform accurate comparisons.

Figure 1. Sample SALECOMP record.

Field naming

The heart of the database is the Competitor Data table. Because it must look and act like a spreadsheet, none of its 16 fields include labels. I used the following convention to assign names to these fields at the Field Names Spec:

- The four fields under the Name column are named *Name Line 1* through *Name Line 4*.

- The four fields under the Sales Price column are named *Sale Price 1* through *Sale Price 4*.

- The four fields under the Sale Factor column are named *Sale Factor 1* through *Sale Factor 4*.

Programming

Programming for SALECOMP isn't as complex as you might think. Listing 1 shows the field names, the Program Spec field ID numbers assigned to them, along with the statements and any messages conditionally displayed.

Listing 1. Program Spec for SALECOMP.

```
Calculated Sale Price
#100

Name Line 1
#200

Sale Price 1
>#240: If #200<>"" and #240="" Then
   { @Msg("Unit Cost For This Vendor Must Be
      Entered");
   Goto #240 };
   If #200="" Then #280="" Else #280=#240/#100

Sale Factor 1
<#280: Cnext

Name Line 2
#210

Sale Price 2
>#250: If #210<>"" and #250="" Then
   { @Msg("Unit Cost For This Vendor Must Be
      Entered");
   Goto #250 };
   If #210="" Then #290="" Else #290=#250/#100

Sale Factor 2
<#290: Cnext

Name Line 3
#220

Sale Price 3
>#260: If #220<>"" and #260="" Then
   { @Msg("Unit Cost For This Vendor Must Be
      Entered");
   Goto #260 };
   If #220="" Then #300="" Else #300=#260/#100

Sale Factor 3
<#300: Cnext

Name Line 4
#230
```

```
Sale Price 4
>#270: If #230<>"" and #270="" Then
   { @Msg("Unit Cost For This Vendor Must Be
      Entered");
   Goto #270 };
   If #230="" Then #310="" Else #310=#270/#100

Sale Factor 4
<#310: Cnext

Mkt Avg Price
#350: If #280 <>"" Then
   { #360=@Avg(#280..#310);#350=#360*#100 };
   If #280="" Then  {#360="1.000"; #350=#360*#100};
   If #370="" Then #370=#350; If #380=""
      Then #380=#360

Avg Mult'r
#360

Our Desired Price
#370: #380=(#370/#350)*100;
   #390=#370/#100;
   If #280 ="" Then {#380="1.000";#390="1.000"}

Percentage Of Mkt Price
#380

Our Price Multiplier
#390
```

When you've completed and saved the Program Spec, set the programming to *Automatic Calculation*. This way, Q&A can perform its calculations and display the results as soon as you make a change to any field in the record. Open SALECOMP in Add Data mode. When the blank record appears, press Shift-F8, change calc mode to Automatic, make sure that *Main program before field exit?* is set to No, then press F10.

Your price analysis calculator is now ready for action, and you're on your way to an improved bottom line!

Bill Halpern is executive vice president of Professional Computer Technology Associates in Newtown, Pennsylvania, and author of Pinnacle Publishing's *The Quick Answer Focus* special report on *Macros and Custom Menus*. Bill has been designing and installing Q&A business applications for the past eight years, and teaches Q&A at two community colleges. 215-598-8440, CompuServe 71023,356.

QUICKTIP

Quick Delete During Data Entry

WIN

To quickly clear the contents of a field, press Shift-End, then Delete. Shift-End selects (highlights) the field value, so you can also use this command to copy it to the Clipboard in order to paste it elsewhere. For example, you can press Shift-End then Ctrl-C to copy a field to the Clipboard, then press Ctrl-V to paste it. For a multiline field, you can press Ctrl-Shift-End to select it. You can then delete or copy it to the Clipboard the same way.

If you're using a mouse, you can double-click on the field value to select it. If the value contains one or more spaces, though, you'll need to select it by dragging the mouse from one end of the value to the other.

You can also use the Cut, Copy, and Paste commands on the Edit menu to delete, copy to the Clipboard, and paste from the Clipboard.

Tom Marcellus

Add Comments to Your Macro Files

If you use Write to compose your Q&A macros (instead of recording them via the Macro menu), it can help to know that Q&A will treat any line beginning with an asterisk (*) as a comment. If you create complex macros, comments can provide a quick reminder of what your macros do. Here's what a commented Q&A macro might look like:

```
*Prints Monthly Expense Report.
*Prompts at Retrieve Spec for Month and Year.
*Prompts at header for Month and Year.
*Prints report to LPT1.
*Hot-key Alt-R. Created 2/15/95.
*————————————————————
<begdef>
<altr><name>"monthly<sp>expense<sp>report"<vidon>
rpexpenses<enter>monthly<sp>expense<sp>summary
<f10>y<tab><wait><enter><tab><lft><wait><enter>
<f10><f10><f8><dn><dn><dn><dn><end><sp><wait>
<enter><home><capsf6>2<end><f10><f10><esc>
<enddef>
*————————————————————
```

I created an extensive macro file (more than 30 printed pages) that included many complex tasks as well as a custom menu structure. I added comments to document each macro's purpose, assumptions, hot-key, and other important information.

At first, I was afraid the comments would make the macro file too large for Q&A's macro buffer.

However, I noticed that when I saved a macro file via the Macro menu, Q&A stripped out the comments. Assuming the save operation saves only what's in memory, the only other way comments could be ignored is when you load a macro file. Thus it seems that comments have no affect on macro buffer usage. Accordingly, if you use Write to create and edit your macros, add all the comments you need. You might find them invaluable.

[You can take advantage of Dave's technique and still record a macro interactively and save it via the Macro menu. Simply save it to a new filename when you're finished recording, then use the Insert Document command on the F8 Options menu to copy the macro from the new file to your commented macro file. Add your comments to the new macro, resave the file by pressing Ctrl-F8, and load it into memory using the Shift-F2 Get macros command.

You can also protect a macro file. This way, you can't save a macro to it—or record one while that file is in memory—because Q&A won't display the Macro menu. Protect a macro file using the File | Design File | Customize Application | Protect Macro File menu path. Type in the name of the macro file you want to protect, followed by a name for the backup copy. For example, if you're protecting QAMACRO.ASC, you can name the unprotected backup file QAMACRO.BAK.—Ed.]

David Dvorin, Phoenix Solutions, Somerset, New Jersey

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