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Have a Window on Your World with Userselect



CLIFF SOBIN

When you need a quick view of certain fields from another database, try the Userselect command—with a twist—to display them *on-the-fly* in a pop-up window.

HAVE you ever been working in one database and needed to see the contents of several fields in a linked record in another database? By using @XLookup, @Userselect and a simple @Macro command, you can create—dare I say it?—a “window” of information on another world!

Our law office uses Q&A in part as a contact manager. We keep contact information such as addresses and telephone numbers in a database named Person.dtf. There’s only one record for each client and each record has a unique person number. Information on each client’s case is stored in a separate Case.dtf database. A client with more than one case would, of course, have multiple Case.dtf records. Each record in Case has a unique case number and contains the person number that identifies that client’s unique record in Person.dtf. So, as you can see, a one-to-many relationship exists with the person number being the link between the unique Person.dtf record and the potentially multiple Case.dtf records.

An unusual lookup technique needed

Because all information relating to a case is stored in Case.dtf, our staff spends most of its time in this database. However, we often need to see the telephone numbers or address for the client while working in Case.dtf. Our Person.dtf database includes the following fields (shown with Program Spec Field numbers) that we want to be able to view—on demand—while working in a given Case.dtf record:

Telephone(H): #50
Telephone(A): #65
Telephone(W): #80
Telephone(F): #95
Telephone(P): #110
Telephone(V): #125
Email(E): #128
Street1: #130
Street2: #140
City: #150
State: #160
Zip: #170

Options tried and abandoned

Previously, Case.dtf was programmed on-record-entry to @XLookup Telephone(H) from the linked Person.dtf record and place it in a telephone number field in the Case.dtf record. If we wanted to see other telephone numbers, we could use an @Userselect list in conjunction with an @XLookup to get another telephone number and pop it into the telephone number field. This proved unwieldy, since we had to make multiple selections to view more than one telephone number. Other alternatives, such as the following, were available:

- We could use a macro to switch to the Person.dtf record. This option



Application in
ONLINE Edition

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The Do-It-Yourself Guide to Q&A

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Volume 10, Number 11

- 1 A Window with Userselect
Cliff Sobin
- 2 Tip—Y2K Dates and Reports
- 4 Tip—Backup Your Form Design, Too
- 5 Using Linked Lists, Part 1
Erika Yoxall
- 6 @Help
Edited by Bill Halpern & Gordon Meigs
 - Remote Access Servers and Q&A
 - Print Preview Makes Q&A Disappear
 - Q&A Win Temporary Report Changes
 - Q&A DOS to Win Merge Docs
 - Large Hard Drives and Lesspace
- 8 @Instr or @Rest?
Tom Marcellus
- 9 Tip—Align Fields for Clipboard Copy
- 10 DTFWIN Rises to New Heights

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proved slow and, of course, prevented us from continuing to view the Case.dtf record. (Moreover, somebody else could access the Case.dtf record before we were able to return to it.)

- We could perform @XLookups on all the desired Person.dtf fields simultaneously, pulling the data from them into individual fields in the Case.dtf record for display. Unfortunately, this ate up too much screen real estate in Case.dtf, and

Continues on page 3

Quick Tip

Y2K Date Formats and Reports 'Too Wide' DOS

After changing your database's global date format from a two-digit-year to a full four-digit year, you might have some reports that Q&A now tells you are "too wide" to print with your existing settings. If so, you have some options. You might be able to reduce the widths of some of the other columns in the report, reduce the report's margins and/or font size, increase the page width, or change from portrait to landscape printing. But an easier solution might be to make the report look *exactly* as it always has simply by using a date-formatting code in each date column at the Column/Sort spec. For example, the code **F(D8)** specifies date format #8, or the **dd/mm/yy** (two-digit year) format. You can find the list of available date formats on page 4-51 of the

Q&A for DOS *User Guide*. Note that this is a *display-only* formatting code that affects only the report column in which it is used. The code will *not* change the way Q&A stores, sorts, or calculates dates or otherwise affect your database's date format.

Alec Mulvey

Time's running out!

The *Quick Answer's* **Q&A Year 2000 Pack** includes everything you need to ensure your computers, databases, reports, saved specs, other Q&A-related files—and *Q&A itself*—are 100% ready for the 21st Century. The **Pack** includes a 30-page printed guide and two diskettes. For more information, visit our **Q&A Year 2000 Pack** Web page at www.quickanswer.com/y2k.htm

Letters

Line Draw Characters Cause Acrobat PDF Conversion Failure

Our title company merge prints (in Q&A Write) insurance binders for our lender clients, merging the information from our Q&A for DOS databases. These binder documents can be lengthy (up to 10 pages with 60+ merge fields) and take a lot of time to print, organize and mail or fax to our clients.

Our biggest clients use Acrobat Reader and can accept electronic documents in Acrobat's PDF format sent to them by email attachment. So I was glad to see the article, "Make Your Q&A for DOS Documents Portable," in the June 1999 issue.

Using your technique, I merge-printed one of our large binder docs to FILE using the Postscript printer driver, then handed it off to Acrobat Distiller 3.0 for conversion to PDF. Distiller, however, reported errors in the Postscript file and refused to convert it to a PDF document.

Eventually, I uncovered the reason why—

some Line Draw in the original Write document. When I removed it, Distiller converted the merge documents to PDF perfectly.

—Mike Bell,
Montgomery Home
Title

Line Draw consists of the single and double graphic lines and boxes you can "draw" in a Q&A for DOS document by selecting Layout Page / Draw from the F8 Options menu, then using your regular cursor keys and numeric keypad cursor keys to draw the lines and boxes. The ASCII characters in Line Draw don't have equivalents in the ANSI character set used by Windows, so Acrobat Distiller doesn't recognize them and rightly refuses to process them. —Ed.

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Window...cont'd from page 1

multiple @XLookups can tend to slow things down too much.

- We could use multiple @XLookups to pull all the information into several one-character fields and then have programming in Case.dtf combine the information into one field that could then be viewed by pressing F6 or using an @Fedit command to expand the field. In addition to the speed issue, though, an expanded field is difficult to read and can take up too much screen in an area that might be awkward to design around. Furthermore, with all the phone numbers in one field, it would be difficult to perform an operation based on just one of them, such as permanently storing one number in a designated field or changing one of the telephone numbers in the Person.dtf record. A lot of keystrokes would be required for this option.

What I really wanted was to have all the telephone numbers along with the address from the linked Person.dtf record display on a single @Xuserselect-like list. You might say, "Wait a minute, @Xuserselect can display the contents of *one* selected field from all the records in the external database. How are you going to display *multiple* fields from only *one* designated record?" The solution, as it turns out, is simple and fast. I'll explain by working back from the end result.

Userselect with an Xuserselect-like twist

The @Userselect command lets you create a list from a comma-delimited ASCII file. Here's the syntax:

```
< #70 = @Userselect(@Insert("C:\qa5\work\qainsert\tel"))
```

In this program, "tel" is the ASCII filename. A sample "tel" file might look like this (shown here in multiple lines to conform to the column limits of this newsletter):

```
-Telephone Numbers-,Home 301-482-2463,
Alt 301-345-4444,Work 301-840-2705,
Fax 410-657-9799,Page 410-555-6767,
Voice 301-567-0987,E-Mail bbb@aol.com,
XXXXXXXXXXXXXXXXXXXXX-Client Address-,
X1- 25601 Kings Valley Rd.,X2-Apt. 1 ,
X3- Damascus,X4- MD,X5- 20872
```

The @Userselect "list" based on the sample "tel" file looks like this:

```
-Telephone Numbers-
Alt 301-345-4444
E-Mail bbb@aol.com
Fax 410-657-9799
Home 301-482-2463
Page 410-555-6767
Voice 301-567-0987
Work 301-840-2705
XXXXXXXXXXXXXXXXXXXX (optional divider)
X-Client Address-
X1- 25601 Kings Valley Rd.
```

```
X2- Apt. 1
X3- Damascus
X4- MD
X5- 20872
```

Each line of the above @Userselect "list" represents the contents of a different field in the linked Person.dtf record. @Userselect always displays its lines in alphabetical order, and you can see how I've accounted for that by using an alphabetical scheme of my own. In this case, I'm not using @Userselect as a selection list, but as a display medium—a window on the linked record in the external Person.dtf database.

Creating and storing the combo value

In order to get the desired information into the "tel" file, you first use on-record-exit programming in Person.dtf to merge, in one field—field #700, in this case—all the fields in which you're interested. The program combines the fields into a single data string, adding the prefixes such as "X1" as it creates the string. The program, as follows, executes when a new Person.dtf record is created or updated (See Figure 1):

```
#700 = @Str("-Telephone Numbers-"+",Home "+
+#50+",Alt "+#65+",Work "+#80+",Fax "+#95
+",Page "+#110+",Voice "+#125+",E-Mail "+#128
+",XXXXXXXXXXXXXXXXXXXX"+",X-Client Address-"
+",X1- "+#130+",X2- "+#140+",X3- "+#150
+",X4- "+#160+",X5- "+#170)
```

Then, using an on-field-entry program (< #65 in Case.dtf), where field #900 in Case.dtf is the Person Number, you use an @XLookup to retrieve the data string from field #700 in the linked Person.dtf record and drop it into field #65 in the Case.dtf record you're viewing. Here's the program that does it:

```
< #65 = @XLookup("Person",#900,"Person#","x#700");
@Macro("Telephone")
```

The "Telephone" macro simply saves the contents of field #65 to the ASCII file named "tel" (overwriting the

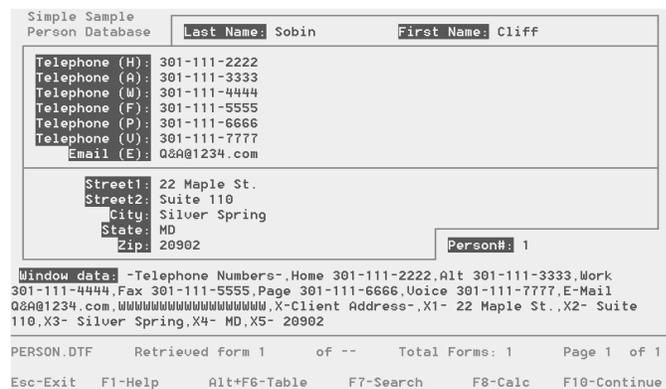


Figure 1. On-record-exit programming in the Person database generates the combination value for the Window Data field (field #700). Here, the field is shown in a multi-line format so you can see the entire value. In your own database, Window Data could be a one-character labelless field hidden anywhere on the form.

existing file of the same name), then moves to the next field (field #70) where the @Userselect command displays the file's contents. You must have a "tel" file that can be overwritten, and each user in a multi-user system must have his own "tel" file to write to. Here's the complete Telephone macro:

```
<f6><ctrlf5><end><end><end><end>  
<f10><capsf4>c:\qa5\work\qainsert\tel  
<enter><lft><enter><f10><enter>
```

For a technique that doesn't require the macro or ASCII file, see the sidebar.

Further ideas

This mini-"system" works extremely quickly and accurately. It can be used in most any application where you need the ability to view the contents of multiple fields from a single record in another database—such as viewing all sales to a particular customer or viewing appointments on a particular day. Using the @Left function, the prefix of your selection can form the basis for further programming, including performing updates in the linked record in the external database. This I like to do with a macro that performs the following actions:

1. "Presses" F11 from a Case.dtf field to copy a combination value consisting of the Case Number and Person Number.
2. Gets the linked Person.dtf record by pasting the value (F12) into the Retrieve Spec (deleting the Case Number so only the Person Number remains for the search).
3. Gets the selected Person.dtf record, then runs an @XLookup to pull in the changes from the linked Case.dtf record.

4. Saves and exits the record and "presses" F12 in the Case.dtf Retrieve Spec (this time deleting the Person Number), triggering the Person.dtf on-record-exit program and returning you to the linked Case.dtf record.

It's a kind of poor man's shell game, but the possibilities are endless when you can open your world in a window!

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Another Way to Do the Same Thing

Even with the world open in a window, sometimes we don't see all the possibilities. As Tom Marcellus pointed out, Q&A has the tools to further simplify this technique. By using a program like this:

```
Userselect(@XLookup(  
"Person", #900, "Person#", "X#700"))
```

you can have Q&A lookup the field in Person.dtf that combines the information fields (#700) and immediately display it in the Case record's Userselect window. This saves having to use the telephone macro to create the ASCII file as well as the @Insert command. Both techniques are demonstrated in the sample databases (Case.dtf and Person.dtf) included in the download file for Online Edition subscribers.



Backup Your Form Design Independently of Your Data

It isn't enough to backup just your Q&A databases every day. You need to backup your database *designs* at certain times, too. Here's why. Regardless of your regular backup routine, chances are you'll eventually overwrite previous backups. That's to be expected. But when a database's *design* becomes corrupted, it might not show up for weeks or months. If the database finally crashes one day (from accumulated corruption or whatever) and you need to import the records from the last backup into a freshly-created database design, you're liable to find that any copies you have of your database design are *also* corrupted. That's why it's important to

always save a copy of your database's design (*File / Copy / Copy Design Only*) whenever you revise your programming or add a report or other saved Spec. It's also a good idea to add one record to the "design-only" copy of the database that contains information about this copy and what changes are incorporated in this design from the previous one. Saving database designs (without all the records) takes practically no storage space. And should you experience a severe database crash one day, you'll save hours of sleuthing and tedious re-creating.

Cliff Sobin

How to Program and Use Linked Lists, Part 1

ERIKA YOXALL



This powerful programmer's tool can help simplify development of complex applications



Application in
ONLINE Edition

LINKED lists are a tried and true way of organizing information in such a way that it doesn't matter how large any part of your collection of information gets. Windows Explorer is based on a linked list of files, which Windows uses to build a graphical tree structure. Linked lists are normally used by programmers, but the concept can also be applied inside Q&A. In this three-part series, I will explain the different elements of linked lists, how they work, and why a Q&A developer/user might care.

What is a linked list?

The concept of a linked list is simple. A linked list is a list of items that know what they are and what order they go in. For example, the following list of items can know they are Colors and go in the order shown:

Red
Green
Blue

How can they know? Each of the items is actually stored the same way regardless of what kind of information it is. Each item has a unique identifier, a name, and four pointers: Parent, Child, Previous and Next. The structure listed above would actually be stored as follows:

Name	ID	Parent	Child	Previous	Next
Colors	1	Null	2	Null	Null
Red	2	1	Null	Null	3
Green	3	1	Null	2	4
Blue	4	1	Null	3	Null

They would appear in a tree like this:

Colors
 Red
 Green
 Blue

This means that you can get the whole tree from any point in it. You can select Green, and generate the entire Colors tree. One of my clients uses this method to generate commission hierarchies for his insurance underwriting business. He can select any agent and

generate the hierarchy that contains the agent in both directions using linked list structures.

Linked lists in Q&A

Linked lists are cool, but they can also be complicated to use inside the constraints of flat-file programming, so I'll start with a very simple example of how to use this kind of structure in Q&A.

This example uses a linked list inside Q&A to generate a simple military-style chain of command. Each individual in the database reports to another individual in the database. By selecting any individual, Q&A can provide their chain of command up to the highest-ranking individual.

Since this is a simple example, the file containing the linked list information (Linklist.dtf) will require only three of the six items in the earlier table. **Name**, **ID** and the **Parent** pointer. You can also include any other information about the item that you may wish to display or store. My Linklist database includes the following fields:

ID - Speedy Unique, Initial Value = @Number
Name - Speedy
Rank
Parent - Speedy

All fields are formatted as Text.

Add some records to the database to experiment with. ID will be set automatically; Name and Rank can be anything you want. Parent is the ID of the person that the person you are currently entering reports to. To ensure that there is a valid Parent, I used the following programming statement:

```
< Parent:
If Parent = "" Then
Parent =
@XuserselectR(@Fn, "Name", "Id", "A", "Zzz")
```

This way, I can select a name, and the ID will automatically be filled in. If the person you are working on doesn't report to anyone, leave Parent blank or enter "None."

For best results, select Parents in such a way as to

Concludes on page 9



EDITED BY GORDON MEIGS
AND WILLIAM HALPERN



Remote Access Servers and Q&A

We are running a Terminal Server/RAS, and for some reason we're having difficulty running Q&A on this network. Specifically, we can't seem to access all of Q&A's functions in our databases. We've purchased Q&A for Windows 4.0, hoping that this will allow us to operate completely within the Windows network and the RAS. Do you have any suggestion for running Q&A this way.

Mick via the Internet

Even on a network, Q&A is a client-based program—all processing is done on the client (local) PC as opposed to the server. Q&A needs to have the bulk of the database file in the memory on the client PC in order to perform any operations that involve more than a single record. When searching for multiple records, sorting, or running a report, Q&A passes as much of the file as it can from the server to the requesting client PC.

With a normal network connection running at 10 or 100 megabits per second, such operations are transparent and fast. However, on an RAS (remote access server) system where you might be connected to the network via a 56K modem, the same operations are going to be excruciatingly slow. Using the DOS or Windows version of Q&A will make no difference. It's the way Q&A works that's at issue. And you can't change it. So RAS is not an acceptable route for a Q&A application.

A far better approach is to use remote access software such as PC Anywhere. As a remote user, you simply connect to a client PC on the real network and run Q&A from the client. Only screen updates are transferred over the remote connection.

Print Preview Makes Q&A Disappear

Print preview works fine and returns me to the document in full screen when I run Q&A in DOS. However, it doesn't work so well when running Q&A for DOS in Windows 95, where I'm returned from print preview to a tiny document screen. Is there a fix other than not running Q&A 5.0 in Windows?

Patrick McCarthy via the Internet

We don't know why this happens, but you're right. When returning to the document from print preview (only when running Q&A in a window rather than full screen), Windows will either minimize Q&A or "restore" it to the smallest size window. It's really no problem, though. Either click on the maximize button or the taskbar and you'll find that Q&A restores to its original size and position. If this is too much to put up with, running Q&A full-screen (not in DOS, but in a full screen in Windows) will alleviate the problem.

Q&A Windows Reports Temporary Changes

I recently migrated from Q&A DOS to Q&A 4.0 for Windows. When I ran *Report / Print a Report* in Q&A for DOS, I was able to make temporary changes. For example, I could modify the Retrieve Spec prior to printing to include only the records I needed. But now, when I run these old Q&A for DOS reports in Q&A for Windows, there seems to be no way to make temporary changes before printing. What am I doing wrong?

John via the Internet

You have the same "make temporary changes" capabilities in Q&A for Windows as you had in Q&A for DOS, but you have to do things in a slightly different order. Before running your report, retrieve the records you want to include via *Add/Edit* on the Select menu. Once you have the records onscreen, choose *Run Report* from the Select menu and choose one of your saved reports. You'll find that the report now includes only the records in the "found set."

Merge Docs in Q&A for Windows after Upgrading

I recently switched from Q&A 4.0 for DOS to Q&A 4.0 for Windows, basically to solve my printing problems. The transition went smoothly. Q&A opened my old databases and even my old Q&A for DOS Write documents. However, when I try to print one of these old merge documents, Q&A for Windows doesn't merge any records from the database and prints only the form with the merge field codes in it (for



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.

example, »Last name«). Doesn't the mail merge work the same way in Q&A for Windows as it does in Q&A for DOS?

Ellen via the Internet

Mail merge (letters, mailing labels, and so on) works fine in Q&A for Windows. It's the conversion of the Q&A for DOS merge documents to Q&A for Windows merge documents that leaves something to be desired. When Q&A Write for Windows converts Q&A Write for DOS documents, it doesn't convert the links to the databases or the actual merge codes. It interprets the Q&A for DOS merge codes (*last name*, for example) as codes, then converts them to *what look like* Q&A for Windows merge code symbols (»last name«, for example), but they're just symbols—not linked to any database.

What you have to do with each converted merge document is reestablish the database link by selecting *Insert / Merge Field*, choosing the appropriate database, then inserting the merge fields where they belong in the document. (Don't forget to delete the old "merge fields" put there during by the conversion.)

Once you've done this, save (Save As) the document as a Q&A for Windows Write document to the same filename. Now, the new Q&A for Windows merge document will produce the same result as the old Q&A for DOS one.

Large Hard Drives and Lesspace

I am in a quandary! My MIS department won't let me partition our server's hard drive and I know that Q&A 5.0 won't run properly with the databases on a 17G drive. I think that I can solve the problem using that Lesspace utility, but I don't seem to be able to make it run correctly. What am I doing wrong and how can I tell if I have Lesspace installed and running it properly?

Niel via the Internet

We've been hearing the same tale of woe from a number of people. The solution is easy. Put a copy of lesspace.com (available on the Free Downloads page at www.quickanswer.com) in your Q&A program files directory and use any text editor to create the following batch file. (Change your paths as necessary):

```
@echo off
d:
cd\qa5
lesspace
qa.com
exit
```

Save this file as *startqa.bat* in your Q&A program files directory.

Next, create a Windows desktop shortcut to this batch file. Set its Command Line to:

```
D:\qa5\startqa.bat
```

And set the Working Directory to:

```
D:\qa5
```

Make sure the rest of this shortcut's properties are set per the many previous articles and tips about this in past issues of *The Quick Answer*.

To see the result of lesspace's "magic," start Q&A and press Ctrl-F3 at the Main menu. Line 10 of the resulting System Information Screen should read something like the following, indicating that Q&A now thinks it's running on a drive of approximately 500MB:

```
Disk space free (D:)...: 536,868,864 of 536,868,864 bytes
```

Bill Halpern and Gordon Meigs own Professional Computer Technology Associates in Newtown, Pennsylvania, 215-598-8440, www.pcta-usa.com, email pcta@comcat.com.

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Need an Index for Your Application Programming Tools Manual?

The Application Programming Tools Manual (APTM) that comes with Q&A 5.0 covers essential topics such as database programming (including descriptions and examples of all the built-in functions and programming commands), macros, and custom menus—yet this manual has no index!

However, there's a good quality third-party index for the APTM that you can print and store in the back of your copy of the manual. To download it, go to www.quickanswer.com, click on the **Free Downloads** (or **Freebies**) link on the Home page, and look for *Q&A 5.0 Application Programming Tools Manual (APTM) Index*. The download file (APTM.ZIP) includes an MS Word 7.0 version of the index (which you can reformat in Word to print as you like) as well as an Adobe Acrobat version.

What's Best—@Instr or @Rest?

Did you know Q&A comes with a built-in function that takes a *retrieval specification* as one of its parameters?

If you've never taken advantage of Q&A's @Rest function in your programming, it might be due to the inadequate description of it given on page 72 of the (Q&A 5.0) *Application Programming Tools Manual (APTM)*. There, it says that @Rest: "Returns a YES or NO value depending on if the expression matches the field value. If there is a match, a YES is returned; otherwise a NO is returned."

The example given in the APTM is this:

```
#10 = @Rest(#20, "Philip")
```

And the explanation is: "This returns a YES if field #30 is set equal to the word Philip, and NO if it contains anything else."

Accordingly, using @Rest in this fashion would, in many situations, be the functional equivalent of using @Instr in the following manner:

```
#10 = @Instr(#20, "Philip")
```

The only difference is that in this case @Rest would place a YES in field #10 if field #20 were set *exactly* to Philip, and @Instr would place a 1 in field #10 if field #20 merely *contained* Philip (otherwise, 0). In many Q&A programming operations—and in report derived column calculations, YES, TRUE, and 1 all mean the same thing, as do NO, FALSE, and 0.

The first clue to @Rest's power is in the *second* example in the APTM:

```
#10 = @Rest(#20, "{@Date - 7}")
```

This returns a YES if the date in field #20 is one week (7 days) old, and NO if it is any other date. That {*@Date - 7*} parameter looks suspiciously like a programmed retrieval expression, doesn't it?

@Rest's real power

You don't get the real story on @Rest (and why it can be preferable to @Instr) unless you press F1 in the Program Spec and read up on it under "Miscellaneous Functions":

@REST(x,m) — Returns true if the field referred to by x has a value that matches m. m can be any valid retrieve specification

The key phrase is: "*m can be any valid retrieve specification.*"

What this means is that for many situations, @Rest might be a better choice (if only because it's more intuitive) than @Instr. For example, if you wanted to carry out some action when field #20 contained "Philip" (in addition to anything else), you could say:

```
If @Rest(#20, "..Philip..") Then...
```

as opposed to using @Instr this way:

```
If @Instr(#20, "Philip") Then...
```

If you wanted to perform some programmed action if field #20 *began* with "Philip," you could say:

```
If @Rest(#20, "Philip..") Then...
```

as opposed to saying:

```
If @Instr(#20, "Philip") = 1 Then...
```

With the @Instr alternative, you have to specify the "1" to tell Q&A to execute the "Then" only if the value begins (starts at the first character position) with "Philip." You don't need this with @Rest because its second parameter's syntax is identical to a "begins with" retrieval specification.

However, when you need to know the *precise* position of a substring within a larger field value, you have to use @Instr. For example, suppose field #20 contained a combination value structured like this:

```
Green^Philip|Tuesday%656744
```

If you knew the day of the week was between the "|" and "%" placeholders, you could use @Instr this way to extract it for field #10:

```
#10 = @Mid(#20, @Instr(#20, "|") + 1, @Instr(#20, "%") - @Instr(#20, "|") - 1)
```

Whereas if you only needed to know if field #20 *contained* "Tuesday" (anywhere), you could use:

```
If @Rest(#20, "..Tuesday..") Then... Or  
If @Instr(#20, "Tuesday") > 0 Then...
```

Press F1 from any Retrieve Spec screen to see a list of valid retrieval codes. Ostensibly, you should be able to use any of them (plus any programmed retrieval expression enclosed in French braces) in an @Rest function to check the condition in a field before having your program perform some action(s) based on it.

Linked Lists. . .cont'd from page 5

make a long, unbroken chain. Some suggested values that give good results for example purposes are shown in the following table:

ID	NAME	RANK	PARENT
1001	Erika Yoxall	General	None
1002	Bill Halpern	General	None
1003	Mark Lasersohn	Colonel	1001
1004	Gordon Meigs	Colonel	1002
1005	Tom Jones	Captain	1004
1006	John Smith	Lieutenant	1005
1007	Harry Morgan	Private	1006

Once you have some records in Linklist.dtf, make another database (Chain.dtf) that you will program to work with the information you entered into Linklist.

Chain needs the following six fields:

Home – a one-character field in the upper left corner for the cursor to "rest" in

Name

Rank

ID

Parentloop

Chainofcommand – a multi-line field

All fields are formatted as Text.

Only the following two fields need programming:

```
< Name:
ID = @XuserselectR(
"Linklist", "Name", "Id", "A", "Zzz");
XLookup("Linklist", Id, "Id", "Name", Name,
"Parent", Parentloop, "Rank", Rank);
Chainofcommand = "";
Goto Parentloop

< Parentloop:
If Parentloop <> "" And Parentloop <> "None" Then
{
    #4 =
```

```
@Xlookup("Linklist",Parentloop,"Id","Rank") + " "
+ @Xlookup("Linklist",Parentloop,"Id","Name") + "
" + #4;
Parentloop =
@Xlookup("Linklist",Parentloop,"Id","Parent");
Goto Parentloop
}
Else Goto Home
```

The program in Name offers a list of names to choose from. When you select a name, it fills in the information from the selected person's record and goes to Parentloop to get the Chain of Command.

The program in Parentloop looks up the Name and Rank of the selected person's Parent, adds the information to the top of the Chainofcommand field, gets the ID of the next person in the chain, then loops. It continues running until it gets to a person with no Parent, signifying the end of the chain.

To see this in action, add a record to Chain. In the Name field, select one of the lower level names, like Harry Morgan. You should see Q&A build Harry's chain of command all the way up to his General.

Not only does a structure like this allow you to dynamically build a hierarchy with as many or as few items as needed, it also lets you change several hierarchies by changing a single record. If you change Tom Jones' Parent to 1003, the entire chain of command will adjust itself automatically.

Linked lists provide a flexible and uniform way to store types of information that are very different from each other. Next month, in Part 2 of this linked list series, we'll look at a more sophisticated example that will also use Child, Previous and Next.

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The Linklist.dtf and Chain.dtf databases referred to in this article are included in the download file for Online Edition subscribers.

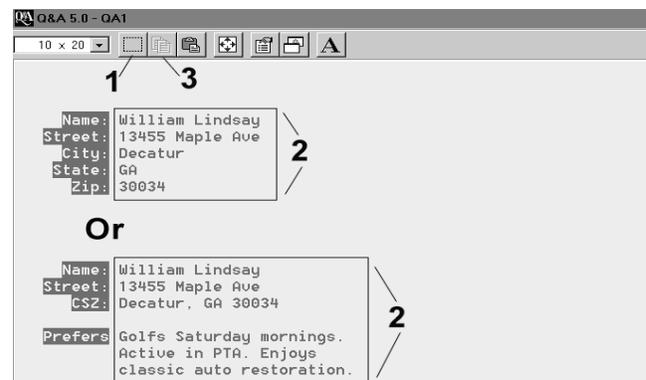
Quick Tip

Align Your Fields for Easy Clipboard Copying

Aligning your Q&A for DOS

database fields as shown on the right makes it easy to switch to window mode (Alt-Enter) and quickly copy them as a block to the Windows Clipboard. You can then paste the data elsewhere in Q&A or into a Windows program such as MS Word.

With Q&A in a Window, simply (1) click on the Highlight icon on the toolbar, (2) hold down the left mouse button and drag the mouse to highlight the fields, then (3) click the Copy icon on the Toolbar or press Enter. The data is now in the Clipboard.



Review

DTFWIN Rises to New Heights

ROBERT SCOTT

A subscriber who uses Q&A for Windows customized with DTFWIN reports on the latest updates to this evolving add-in.

IT'S been more than a year since I wrote about my experiences with John Dow's DTFWIN. (See "Q&A for Windows Add-On Revs Up Multi-Database Apps" in the September, 1998 issue.) Whenever I read a review, I always wonder how the product will hold up over a period of time. So what I'd like to do is share with you how my Q&A for Windows/DTFWIN applications have performed and improved during these intervening months.

When I began creating a list of all the Q&A for Windows features that DTFWIN now controls, enhances, or permits me to modify, I realized that DTFWIN does much more than I ever expected and includes features that I never dreamed it would have. For example, DTFWIN now allows me to make my own custom company icon appear when I start Q&A, and have my company name on the title bar at the top of the window.

Password entry made easy

When we start Q&A for Windows at our company, the user gets a password validation box. (See Figure 1.) DTFWIN verifies the User ID and password entered, remembers them, and automatically supplies them to any password-protected databases the user attempts to open. (We use John's DTFPASS in conjunction with DTFWIN to permit users to change their own passwords.) Once the password is validated, the database opens to the location I've established and with the features and controls I've specified in the program's custom setup files.

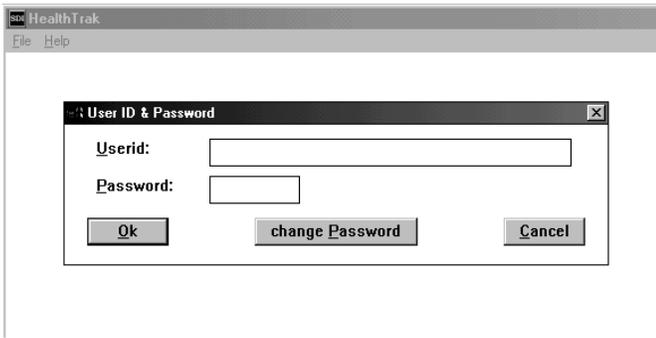


Figure 1. DTFWIN's custom login screen showing change password feature. Logged-in users have automatic access to all databases they're permitted to use without having to re-enter their User ID and password for each one. Note the custom company name on the title bar.

Customizable startup files and scripts

DTFWIN supplies two files for specifying custom application features and user requirements—the .INI (initialization) file contains generic parameters, and the .CFG (configuration) file can contain custom settings (such as paths and directories) specific to each workstation.

With the .INI file, I specify the size and positions on the screen where I would like Q&A to run. The .INI file also lets me define Q&A's menu bar and the actions connected to the various menu selections. (See Figure 2.) I can even specify that certain menu selections be grayed-out (inactive) unless the appropriate database is open. This is possible because DTFWIN now includes its own scripting language—and I can create scripts myself! These user-customizable scripts empower Q&A Windows with the capabilities previously available only in Q&A DOS using keystroke macros. Unlike macros, though, you don't record scripts as keystrokes. Instead, you type the script commands into a file using a text editor.

Unlike a Q&A for DOS macro, a script can include commands with some "intelligence." For example, the command to go to a particular field on a form works regardless of where that field is because DTFWIN doesn't "tab" to it but rather accesses it directly by name. (This helps eliminate problems associated with runaway macros, when things the macro expects to be there aren't.) Scripts can be executed a number of ways:



Figure 2. Portion of a DTFWIN .INI file. Here's where you can create a custom menu bar and customize your menu selections.

- Under the control of Q&A database programming.
- By selecting a menu choice.
- Automatically on start-up.
- When you click a button associated with a special field on a form.

Have multiple databases open

In my application, a user can select up to six different databases to open from the menu bar. Unlike Q&A for Windows out-of-the-box, DTFWIN lets you have several databases open at the same time. DTFWIN manages these multiple copies of Q&A for you, keeping track of which copy is running with what database opened. If you close a database, DTFWIN tells the corresponding copy of Q&A to close the database, then DTFWIN hides that copy of Q&A until you need it to open another database. When the user exits from DTFWIN, all open Q&A windows are automatically closed.

Custom menus

The menus from which my employees make their selections were created by me using DTFWIN's custom menu feature. This gives me, the system administrator, complete control over what's on the menus, how the selections are named, and what actions the selections perform. I also have the ability to select which of the built-in Q&A Windows menu choices I let a user access.

Once a user is in the database they want, other customizable DTFWIN features come into play. Since DTFWIN now has so many built-in features, as well as facilities that let me add even more features, I'll mention just a few of our favorites.

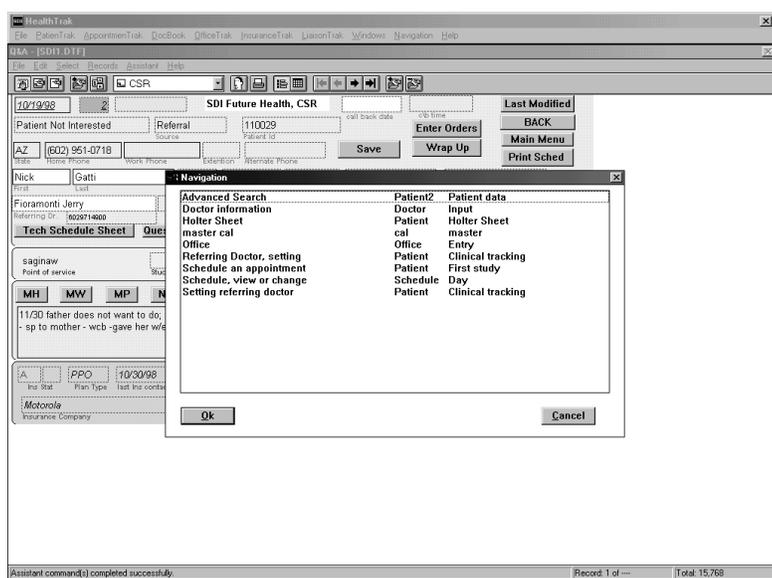


Figure 3. Powerful DTFWIN Navigator lets you design a pop-up list of navigation options and select your next action. This feature can switch you to a different form, open another database, or move you to the appropriate field in the current form.

Generic buttons

DTFWIN recognizes when the user clicks a button on a Q&A for Windows form, and can follow any custom commands specified for it in the .INI file. DTFWIN includes a couple of standard buttons that work the same in any form you place them on—*Back* and *Save*. The Back button sends the user to the previous form, while the Save button tells Q&A to save the current record to disk. The action of an optional third generic button, *Cancel*, is customizable.

List boxes

You can create different types of list boxes in DTFWIN, from simple pop-up pick-lists whose selections are read-in from text files, to more sophisticated list boxes created by Q&A programming logic and with data gathered from external databases. You can also associate a list box with a particular field, and activate it by pressing F12 or by clicking on a button adjacent to the field. The DTFWIN list box that gets its selections from a text file is similar to Q&A 5.0's @Userselect command but can contain multiple columns.

Launch a program

By pressing F12 or clicking a button next to a field, DTFWIN can launch the external program of your choice and pass to it the information in that particular field. (Similar to @Shell or External Programs in Q&A 5.0.) You can also run the program strictly under the control of the database programming without having the user take any action. We use this feature to open an image viewer that displays a scanned image file.

User customizable dialog boxes

DTFWIN gives you facilities for creating standard windows message boxes with buttons (OK, Cancel, and so forth) and with icons (Information, Error, and the like). These message boxes can return information from the user to Q&A, so your programming can tell which button the user clicked and what to do next. There's built-in support for data integrity logic, too. Suppose you employ Q&A programming logic to blank a mandatory database field until the specified conditions are satisfied. Q&A will pass control to that field when the user tries to save (or exit from) the record inappropriately and display a message that isn't very helpful. DTFWIN automatically sees that unhelpful message and passes control back to your programming so you can display a more appropriate message or take some other action. (This data integrity technique is described in detail in an article by John in the April 1999 issues of *The Quick Answer*.)

Print orientation

We print a variety of different forms throughout the day. Some need to be printed in Portrait orientation and others in Landscape. Rather than constantly going to Page Setup to change the settings back and fourth, DTFWIN gives us a menu that lets us select *Print current form Portrait mode* or *Print current form Landscape mode*. With the click of a button the job is done.

Posting

DTFWIN also helps us with some otherwise extremely difficult tasks. For example, we have employees around the country who send in daily information updates that need to be entered into a database. Previously, we had data entry people searching for records and then typing in the changes. Now, using an IVR (Interactive Voice Response)

system to collect the data, we have DTFWIN automatically post the information to the database. Using DTFWIN's built-in data manipulation capabilities, we can post from one database to one or more other databases, to multiple target fields as needed, and even to multiple fields in multiple records at the same time.

These are just a few of the many features that DTFWIN has brought to our Q&A for Windows applications. If you're using Q&A for Windows or have been contemplating adding it to your system, you owe it to yourself to check out the latest DTFWIN. You can demo it at John Dow's Web site at www.johntdow.com.

Robert Scott develops commercial Q&A for Windows/DTFWIN applications for his company. 805-495-7800, bob-scott@usa.net

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