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The Smart Way to Link Q&A Data to MS Word

ERIKA YOXALL

When you need the power of a Windows word processor to design and print your merge letters, here's how you can turn the process of getting your Q&A data over there and running your merges into a couple of mouse clicks.

ONE of the things that is very right about the computer world these days is the continued use of a standard file format called ASCII. Whatever internal format a program uses, it can usually be counted on to also read and write plain text or ASCII files.

Here at Hammer Data Systems, we employ this standard format all the time to use Q&A data in Microsoft Office applications. We export Q&A data to an ASCII file, then import it into Excel, Word, Access, and so forth. This way, we can take advantage of the pretty Windows output tools, like fancy mail merge documents and reports, while still doing most of the work (data entry, validation and manipulation) in our familiar and easy-to-use Q&A.

The only problem is that porting your Q&A in ASCII format to another application can be a very clumsy process. For example, to print a Word merge letter this way you have to start Q&A, export your data to an ASCII file, launch Word, open your merge document, locate the text file you exported and link the data. Only then can you finally print your merge letter.

What if you could have all this happen by double-clicking an icon on your desktop? Thanks to John Dow's DTFDATA, you can. (See the "Resources" sidebar.)

Whether or not Q&A is running, DTFDATA can extract records and fields from any Q&A database and generate an ASCII output file containing the data. Word has the ability to link to and use information contained in ASCII files (sometimes called "text" or "csv"—comma separated values—files). Word documents also have the ability to run their own programming code.

You can put these pieces together and wind up with a Word document

Resources

To find out more about DTFDATA or to purchase it, visit John Dow's Web site at www.johndow.com.

For a list of back issues containing examples of DTFDATA uses, go to our *Quick Answer* search page at www.quickanswer.com/query2.htm and search on the Keyword *DTFDATA*. For other ways to use your Q&A data in Microsoft Word (including tips on creating Word merge documents and merging to forms such as invoices), search on the Keywords *Word*; *MS Word*.

A simple Q&A 5.0 address database, along with the two Word documents featured in this article, are included in the September download file for Online Edition subscribers.



Application in
ONLINE Edition

The Quick Answer

The Do-It-Yourself Guide to Q&A

September 1999

Volume 10, Number 9

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that automatically generates its own data source that is actually live Q&A data.

All you need is any version of Q&A, Microsoft Word 97, Windows 95 or higher, and DTFDATA. The technique is probably adaptable to Word 95. However, Word 95 uses the WordBasic programming language instead of Word 97's Visual Basic for Applications (VBA). Though the languages are similar, the syntax differs in some cases. So if you have Word 95, you're on your own.

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Do you save your Retrieve Specs? I do—all the time; especially one I name "Temp."

Imagine you're about to run a selective mail merge or Mass Update, or move some records out of an original database to an archive database. Make it easier on yourself by first performing a "dress rehearsal" using a regular Search. Fine-tune your search criteria (repeatedly pressing F7 to return to the Retrieve Spec) until you're quite sure you have the parameters that identify the set of records you want to include. Then, press F7 one last time and save the Retrieve Spec (Shift-F8) to the name "Temp," overwriting the previous saved Retrieve of the same name. Now, if you Copy Selected Records, you can press Alt-F8 at the Retrieve Spec and use your saved "Temp" Spec. And when you Remove Selected

Records from the same database, you can again use your saved "Temp" Retrieve Spec. There's no risk of not getting the records you want.

The same technique can be used to save, for example, a Mass Update Spec, a Merge Spec or any other saveable Spec.

**Alec Mulvey,
Keyword Training**

Editor / Publisher
Tom Marcellus

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Control When Your Picklists PopUp



Application in
ONLINE Edition

The problem with Userselect and XUserselect picklists in Q&A 5.0 is deciding under what conditions to display them.

If you program a field to pop up a picklist only if the field is empty, then to update the field you must first delete the existing value then move back into or out of the field (depending on whether your program executes on-field-entry or on-field-exit.)

If, on the other hand, you program the field to display the picklist *unconditionally*, then just moving through the form can unnecessarily trigger it.

But you can have the best of both worlds by using a hotkey macro such as Ctrl-L (or your mouse's right button) to trigger the list when the field is filled.

In other words, you can have the picklist auto-display only if the field is empty (such as when adding new records). Thereafter (if you need to update the field), you can display the list by pressing your hotkey.

Start by adding these programs to the Picklist field:

Navigation Spec:

```
< If PicklistField = "" Then {
    Userselect("Green,Brown,Red,Blue", PicklistField);
    CNext }
Else @Msg("Press Ctrl-L for list");
REM "Remove the CNext if you like"
```

Program Spec:

```
> If @Right(PicklistField,1) = "^" Then
Userselect("Red,Green,Blue,Brown", PicklistField);
```

```
If
@Right(PicklistField,1)
= "^" Then
PicklistField =
@Left(PicklistField,
@Len(PicklistField) -
1)
```

Next, add one of these macros to your macro file:

```
<begdef><nokey><name>
"right<sp>button"
<vidoff><f6><end>^
<f6><tab><enddef>
```

```
<begdef><ctrl1><name>"^
<caps,>ctrl1<caps.>"^
<vidoff><f6><end>^
<f6><tab><enddef>
```

Now, the picklist will pop up automatically when you enter the empty field. If you need to update the field later, simply move to it and press Ctrl-L (or click your right mouse button) to pop up the list. The macro tacks a caret ("^") onto the end of the value and tabs out of the field, triggering the picklist. When you've made your selection, the program continues, removing the caret.

Be aware that the macro will add the caret to the end of the value in any field in which it's executed.

How to Reach Us

Phone	800-780-5474 / 949-722-9127
Fax	949-722-9127
Email	mailto:mailbox@quickanswer.com
Web	http://www.quickanswer.com
Mail	Marble Publications The Quick Answer 1927A Harbor Blvd. Costa Mesa, CA 92627

Merge in Word... cont'd from page 1

You also need a Q&A database that contains the fields you want to merge into your Word document, three easy-to-create text files (a Word header file, a QAX file, and a batch file), and two Word documents (your merge document and a code document). I'll cover each of these in turn, starting with the database. If you follow my examples and plug in your own paths and filenames, you'll have a working application you can start using right away.

The Q&A database

You can use any version Q&A database for this. The only requirement is that it must contain all the fields you want to use in your merge document. Write down the names of the fields that you will want to use in your Word merge document and the order in which you want them. DTFDATA is easier to use if the names of the database fields you're planning to extract don't contain spaces or non-alphanumeric characters. If possible, use the Set Field Names Spec to edit your field names so they include alphanumeric characters only.

The Header file

The Header file adds the field names to the ASCII file created by DTFDATA. This is necessary because Word expects the first line of an ASCII data source file to contain the field names that correspond to the data. Using Q&A Write, type a document that consists of the field names you wrote down earlier, enclosed in quotes and separated by commas.

For example, if you're using the following fields in your merge document:

```
Salutation
First_Name
Last_Name
Address
City
State
Zip
```

Your Header file will look like this:

```
"Salutation","First_Name","Last_Name","Address","City",
"State","Zip"
```

Don't press Enter at any point while typing the whole Header file line, including at the end of the list. Just let the line wrap wherever it will. And be sure you press Ctrl-F8 to save the file as an ASCII file. Name the file *header.txt*.

The QAX file

The QAX file is the file that DTFDATA uses to find out what information you want to extract from your Q&A database and in what order. The programming in the Word code document will actually generate the QAX file

at runtime, but you should create and test it in advance. Using Q&A Write, create a QAX file. Make sure that your field list is in the same order as your Header file.

```
N=0
Select=
Format=Comma
Salutation
First_Name
Last_Name
Address
City
State
Zip
```

- The *N=0* tells DTFDATA not to limit the number of records in the output file.
- *Select=* is the first part of the statement that tells DTFDATA the Q&A database field or fields on which to search. (It's DTFDATA's counterpart to Q&A's Retrieve Spec.) For example, *Select = State = "OH"* would tell DTFDATA to include only the Ohio records. (See DTFDATA's documentation for details on how to construct a proper Select statement, particularly if you need to select on multiple fields or if your selection field names contain spaces or non-alphanumeric characters.)
- *Format* – the output file format – must equal *Comma* to generate a comma-delimited file with quotes around the values.
- The lines after the Format command are the names of the fields from which DTFDATA will extract the data. Make sure you press Ctrl-F8 to save this file to ASCII format. Name the file *wordmrge.qax*.

At this point, run DTFDATA from a command line using *wordmrge.qax* and an output filename. The three parameters for DTFDATA in this case are (1) the path and name of the Q&A database, (2) the path and name of the QAX file, and (3) the path and file where you want DTFDATA to output the data:

```
dtfdata database.dtf specfile.qax output.txt
```

Make sure that DTFDATA is returning the expected fields from the expected records. If not, adjust *wordmrge.qax* until it works. The latest version of DTFDATA is relatively new, so be sure that you're getting the expected results.

The batch file

The Batch file will be called by Word to create the ASCII file data source for the merge document. It looks like this:

```
del D:\Hammer\VBATest\wordmrge.txt
del D:\Hammer\VBATest\qadata.txt
D:\Hammer\VBATest\dtfdata.exe
D:\Hammer\VBATest\WORDMRGE.DTF
D:\Hammer\VBATest\wordmrge.qax
```

```
D:\Hammer\VBATest\qadata.txt
copy/Y D:\Hammer\VBATest\header.txt+
D:\Hammer\VBATest\qadata.txt
D:\Hammer\VBATest\wordmrge.txt
```

- Lines 1 and 2 delete previously created files.
- The third through sixth lines are actually one line—line 3—a single command that calls DTFDATA, supplies the database and QAX filenames, and specifies the output file named qadata.txt.
- Line 4 (a single command shown here on the seventh through ninth lines) combines the Header file and the extracted data into a file called wordmrge.txt, which will be used as the data source for the Word merge document. Note the /Y switch on the DOS Copy command. This prevents the system from prompting you if wordmrge.txt already exists.

Change the paths and filenames to those appropriate for your system and application. You must use full pathnames for all files. Word does not necessarily know where it is when shelling out to a command line.

Run the batch file to make sure it works.

Wordmrge.txt should contain your header followed by your extracted data with no blank lines in between.

The Word merge document

Start Word and create a new document. Use the Mail Merge Helper located on the Tools menu to create your merge document. When prompted for a data source, navigate to and open wordmrge.txt. Save your merge document as VBATest.doc.

The Word code document

This is where it all comes together! Start Word and create a new document. Type something that lets you know that this is a utility document only. Press Alt-F11 to open the VBA editor. Press F7 to get a code window. Type or paste the following subroutine into the code window:

```
Private Sub Document_Open()
On Error GoTo ErrHandler
'Repopulate the merge file.

' Create the QAX file
Dim strSelect As String
Dim strResponse As String

' Allow on-the-fly filtering.
strSelect = "SELECT="
strResponse = InputBox("Enter a valid DTFDATA " & _
"selection statement. Leave the input box " & _
"blank and click OK to retrieve all " & _
"records. Do not include 'SELECT=' at the " & _
"beginning of your statement. " & _
"Example: FIRST_NAME=Tom")
strSelect = strSelect + strResponse

' Write the QAX file
Open "D:\Hammer\VBATest\wordmrge.qax" For _
Output As #1
Print #1, "N=0"
Print #1, strSelect
Print #1, "FORMAT=COMMA"
```

```
Print #1, "SALUTATION"
Print #1, "FIRST_NAME"
Print #1, "LAST_NAME"
Print #1, "ADDRESS"
Print #1, "CITY"
Print #1, "STATE"
Print #1, "ZIP"
Close #1

'Recreate merge file.
Shell "D:\Hammer\VBATest\wordmrge.bat", 1

'Wait for Shell to finish.
Do While Tasks.Exists("wordmrge")
Loop
Tasks("Finished - wordmrge").Close

'Open the merge document and
'close the code document.
Documents.Open _
FileName:="D:\Hammer\VBATest\VBATest.doc"
Documents("VBATestOpen.doc").Close _
SaveChanges:=wdDoNotSaveChanges

Err_Exit:
Exit Sub

ErrorHandler:
MsgBox "An error has occurred!" & vbCrLf & _
Err.Number & ":" & Err.Description
GoTo Err_Exit

End Sub
```

What the code does

Any text preceded by a single quote ('') is interpreted by Word as a comment.

This subroutine runs as soon as the document is opened. It prompts you for the selection criteria, writes the QAX file based on your input, extracts the appropriate information from Q&A, opens the merge document (VBATest.doc) and closes itself. The subroutine includes standard error handling.

If you don't need on-the-fly filtering of your Q&A database records, you can use this abbreviated subroutine in place of the one above:

```
Private Sub Document_Open()
On Error GoTo ErrHandler
'Repopulate the merge file.

'Recreate merge file.
Shell "D:\Hammer\VBATest\wordmrge.bat", 1

'Wait for Shell to finish.
Do While Tasks.Exists("wordmrge")
Loop
Tasks("Finished - wordmrge").Close

'Open the merge document and
'close the code document.
Documents.Open _
FileName:="D:\Hammer\VBATest\VBATest.doc"
Documents("VBATestOpen.doc").Close _
SaveChanges:=wdDoNotSaveChanges

Err_Exit:
Exit Sub

ErrorHandler:
MsgBox "An error has occurred!" & vbCrLf & _
Err.Number & ":" & Err.Description
GoTo Err_Exit

End Sub
```

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Enhancing Crosstab Reports

ALEC MULVEY

There are ways to use Q&A for DOS' powerful crosstab report format that might not be evident at first glance.



YOU'VE probably seen those tick-mark-in-the-column specification tables that appear in new car brochures. With the DL model you get alloy wheels; with the GL model you get alloy wheels and air conditioning—and so forth. Recently, I needed to produce a report like this—one that showed not which features different models of a car included, but whether certain records existed in a database. Let me explain.

The application involves a database of phrases such as *WARNING! SURFACE HOT!* An English language version of each phrase is needed, along with up to nine foreign-language variants. But not all phrases are needed in all languages. Each record contains a phrase code (SR Code) such as 16a, a language code (Lang Code) such as EN for English, and the text of the phrase (SR Text) in the particular language. The combined unique code—16a-EN in this case—made it easy to prevent duplicate records. But what about *missing* records? The client needed to list the phrase codes as rows and the languages as columns as a quick check to see which phrases had a record for each language.

I started with this simple cross-tab report spec:

```
SR Code: ROW
Lang Code: COL
SR Text: SUMMARY
```

Because the SUMMARY or SUM field is a text field, Q&A automatically counts the entries, so there was no need to specify a Calculation Code. These basic specs produced the report shown in Figure 1.

SR Code	Lang Code												Count
	DK	EN	FR	GE	IT	NL	PO	SP	SU	SW			
11a	1	1	1	1	1	1	1	1	1	1	1	1	10
11c	1	1	1	1	1	1	1	1	1	1	1	1	10
11n	1	0	1	1	0	1	0	0	0	0	1	1	5
81c	0	2	1	1	0	0	0	0	0	0	0	0	4
91e	1	1	1	1	0	1	0	0	0	0	1	1	6
91h	1	1	1	1	0	1	0	0	0	0	1	1	6
91k	1	1	1	1	0	1	0	0	0	0	1	1	6
91m	0	1	0	0	0	0	0	0	0	0	0	0	1
Count	24	33	24	25	17	25	17	17	17	17	25	224	

Figure 1. The basic cross-tab report output.

With very little effort, the report tells a lot. You can see that there are two English records for 81c, and no English record for 11n—both situations that need to be corrected. The report shows that there are 224 records in the database, how many for each language and each phrase, and any “missing” phrases (shown by a zero). Not bad for about 30 seconds work!

However, the report needed to be improved along these lines:

- English is the most important language, but it isn't the first language column.
- The codes aren't sorted in numerical order—11a comes before 4a. (The 4a entry isn't shown in Figure 1.)
- The ones-and-zeros format isn't the most appealing. I wanted to suppress the zeros so a missing phrase shows as a gap.
- I wanted rows with an incomplete set of phrases to really stand out.

I'll show you know how I achieved these enhancements, and hopefully you'll pick up some ideas you can use to enhance your own reports.

Adding enhancements

In a cross-tab report, one field is a row, another is a column, and the body of the report shows the results of analysing those fields relative to each other. Both rows and columns are sorted in order. Therefore, EN appears between the Danish and French columns. One simple way of making a cross-tab report element stand out is to enhance it at the Grouping Spec. This little-known feature of Q&A allows you to enhance a single column or row.

At the Cross-tab Spec, press F7 (Groups), and type %EN in the Language Code groupings. (See Figure 2.)

Continues on page 9

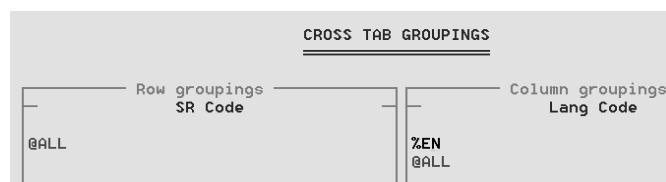


Figure 2. Enhancing the English column at the Grouping Spec

@Help

EDITED BY GORDON MEIGS
AND WILLIAM HALPERN



Calculating Profit Percentages in Reports

Is there a way to generate the overall percentages—indicated by asterisks in this sample—in a Q&A Report?

Ed McKenna, via fax

Product Code	Description	Unit Cost	Units Sold	Cost	Selling Price	%GP
1000	Blue Widgets	\$0.15	1400	\$210.00	\$1400.00	85
1000	Blue Widgets	\$0.15	20000	\$3000.00	\$10000.00	70
1000	Blue Widgets	\$0.15	500	\$75.00	\$625.00	88
Total:			21900	\$3285.00	\$12025.00	*73
2000	Red Widgets	\$0.25	100	\$25.00	\$200.00	88
2000	Red Widgets	\$0.25	500	\$125.00	\$501.75	75
2000	Red Widgets	\$0.25	1000	\$250.00	\$1250.00	80
Total:			1600	\$400.00	\$1951.75	*80
Total:			23500	\$3685.00	\$13976.75	*74

Yes, but not in the positions shown in your sample report. These "overall" figures aren't "totals" of the column above and must be calculated in Derived Columns. Moreover, to keep the report "tidy," we use additional Derived Columns to display the appropriate calculations only (a) when the item changes to a new item, and (b) at the overall Gross Profit for the entire report. Here's how.

After selecting Report / Design a Report, entering a report name ("Gross Profit Report"), and filling out the Retrieve Spec, fill the Column/Sort Spec as follows:

```
Prod Code: 10,AS,H(Product!Code),R
Description: 20
Unit Cost: 30
Units Sold: 40,ST,T,F(N0),H(Units!Sold)
Total Cost: 50,ST,T,H(Cost)
Total Selling Price: 60,ST,T,H(Selling!Price)
```

The rest of the report design is in Derived Columns, so press F8 and set up them up like this:

```
Heading: delayed item number
Formula No. 1 #10
Column/Sort Spec: 100,I
```

Heading: %GP
Formula No. 2 100*(#60-#50)/#60
Column/Sort Spec: 70,F(N0)

Heading: Overall!Item!%GP
Formula No. 3 (@total(#60,#10)-@total(#50,#10))/@total(#60,#10)
Column/Sort Spec: 80,I

Heading: delayed item unit count
Formula No. 4 @txt(#10=#100,
@tonumber(#99))+@tonumber(#40)
Column/Sort Spec: 99,I

Heading: accumulated item units
Formula No. 5 @txt(#10=#100,
@tonumber(#99))+@tonumber(#40)
Column/Sort Spec: 41,I

Heading: Item %GP
Formula No. 6
@txt(@total(#40,#10)=#41,100*#80)
Column/Sort Spec: 82,F(N0)

Heading: Overall Line Count
Formula No. 7 #15+1
Column/Sort Spec: 15,I

Heading: Overall!Sales!%GP
Formula No. 8 @txt(@count(#10)=#15,((@total(#60)-@total(#50))/@total(#60)))
Column/Sort Spec: 90,I

Heading: Overall!Sales!%GP
Formula No. 9 @txt(@count(#10)=#15,100*#90)
Column/Sort Spec: 91,F(N0),T

First, a little refresher on how Q&A for DOS generates reports.

In simple terms, Q&A processes each record in a report from the left-most column across to the right-most column. Thus, Q&A doesn't process column 100 until columns 10, 20, 30 and so on have been processed. That is, what's in column 100 is what's "left over" from processing the previous record. Therefore, when Q&A processes the first record, in looking at all columns up to, but not including column 100, the value of column 100 is empty, or nothing. After processing record one, and calculating column 100, the value of column 100 remains constant until the processing of record 2 reaches column 100.

This is the basis for derived column #1—a "copy" of column #10. For all columns in between #10 and #100, the value of #100 is what it was in the previous record.



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.

Accordingly, you can have Q&A compare the value in column #10 (from the current record) with #100 (from the previous record), and determine if they're the same. Since you're sorting on column 10, you can determine when you've changed from one value in column 10 to the next.

Following is an explanation for each derived column.

#1—A “delayed” copy of the item number, out there to the right in column #100

#2—The Gross Profit percent calculation for this line item. Nothing tricky here.

#3—The calculation for the Gross Profit for all sales of Item A (or B or C). That is, the total sales of the item (@Total of sales \$ (#60) on a break in the item number (#10), minus the @Total cost, divided by the @Total sales \$). If you don't make it invisible, it will appear on every line of the report. Make it invisible, and use another derived column to “turn it on” when you want Q&A to print it. (See Derived Column #6.)

#4—You can count the units of an item, line-by-line, by adding this record's number of units to the previous accumulated total, but you must do so only when this record's Item Number is the same as the last record. The @Text function does this: @Txt(n,m) says, “give me *n* copies of *m*.” The expression, #10=#100 is “*n*,” and it's either True (a value of 1), or False (a value of 0). Consequently, you get *m* when it's True or a blank (nothing) when it's False. Since @Text returns text values, you use the @Tonumber function to be sure Q&A is adding numbers and not concatenating strings of digits (for example, 100 + 500 = 100500). If the value of #10 has changed, then you get nothing of #99, to which you add this record's unit count. When #10 is the same as the previous record, then Q&A adds the current units to the previous accumulated total for this item.

#5—Similar to derived column #4, but done earlier (column 41 vs. column 99).

#6—Here you control where the Item GP% appears in the report. It appears only when the total of the item count equals the count you're accumulating in column 41 (derived column #5). For all previous lines of this item, the accumulated unit total doesn't equal the total units for the item, so nothing prints. The 100 * #80 converts a decimal value to a percent.

#7—This column simply numbers each record in the report. For the first record, column 15 is nothing, so 15 + 1 equals 1. For record 2, column 15 is already 1 (from the previous record), so it becomes 2.

#8—Here Q&A compares the total count of all records (@Count) with the count maintained in derived column. When they're equal (Q&A is processing the last record of the report), you print the overall Gross Profit for all records in the report. This is a lengthy calculation and barely fits on the Formula line (in Q&A 4.0), so there's no room left to convert the decimal value to its percent equivalent. To work around this, you make the column invisible, and use another derived column to calculate its percent equivalent.

#9—Here you multiply derived column #8 by 100 to convert a decimal value to its percent equivalent. In Q&A 5.0, this can be done in the previous derived column, because the Formula line will expand to more than the 80-column screen width.

When you print the report (it's a bit wide for portrait orientation, so landscape is probably better), you'll get the following format:

Overall Product Code	Description	unit cost	Units Sold	Cost	Selling Price	%GP	Item %GP	Sales %GP
1000	Blue Widgets	\$0.15	1400	\$210.00	\$1400.00	85		
1000	Blue Widgets	\$0.15	20000	\$3000.00	\$10000.00	70		
1000	Blue Widgets	\$0.15	500	\$75.00	\$625.00	88	73	
Total:			21900	\$3285.00	\$12025.00			
2000	Red Widgets	\$0.25	100	\$25.00	\$200.00	88		
2000	Red Widgets	\$0.25	500	\$125.00	\$501.75	75		
2000	Red Widgets	\$0.25	1000	\$250.00	\$1250.00	80	80	74
Total:			1600	\$400.00	\$1951.75			
Total:			23500	\$3685.00	\$13976.75			74

'Permanent' Database Sorting

Is there any way to save a database sort? We enter our information on a case number basis and for some reason the records aren't always in case number order. Likewise, if we transfer a record from one database to another, it doesn't fall into its expected numeric position. I've tried everything I know but when I leave the database and come back, everything is unsorted again. It doesn't make sense.

Howard Gilfillan via email

There is no such thing as a “permanent” database sort. You can't control where in the database Q&A (or any database manager) will place a new or updated record.

Database engines typically place records wherever available space exists in the database file. This could be anywhere. If there isn't enough space to insert the record between other records, the engine makes some wherever it can. If Q&A tried to store all the records in some predefined order every time you save or resaved one, it

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Processing Text File Records

TOM MARCELLUS



If your company isn't already doing so, one day it might receive orders for its products from its Web site, or at least gather information there from prospective customers who want to be on the company's mailing list or receive further information.

On a Web site, such data is gathered by what are called *HTML forms*. These forms, when filled in online and submitted by someone, can do various things, such as display a "Thank You" or confirmation page, save the supplied data in a special file, or even send your company an email message containing the form data.

Our online order form at www.quickanswer.com, for example, lets folks subscribe to *The Quick Answer* as well as order back issues and the various other Q&A-related products and publications we offer. When the customer submits the order, our Web server located far away immediately sends an email message to our office "mailbox" containing the order details. A typical email message like this looks like Figure 1.

```
*****
Name: Jeff Michelson
Company: Turnkey Systems, Inc.
Address: 13455 Oliver Pkwy
CSZ: Irvine, CA 92345
Phone: 949-453-5677
Fax: 949-453-6598
Email: jmichelso@turnkey.com
CardName: Mastercard
CardNumber: 5335-7010-3376-7709
ExpMo: 12
ExpYr: 00
NameOnCard: Jeffrey B. Michelson
Item: WinClip for Q&A 5.0
Amount: $49.00
Date: 8/27/99
Time: 1:56:46 PM
HTTP User Agent: MSIE 4.0; Windows 95
```

Figure 1. Example of an email message sent to us by our Web server after someone submits an order at our Web site.

As a backup, our server also accumulates submitted orders in a traditional comma-delimited Standard ASCII-type file. Though we could periodically download and import this file into a database, our order volume isn't great enough to warrant the trouble. Besides, it's easier for us to work with the email messages. They're in our inbox whenever we check our email, and their form-like format helps us quickly spot any missing information so we can call or send a return email message to the customer.

We check our email daily, and immediately copy the data from any incoming orders into our Q&A 5.0 orders database. Because of their format, though, the messages have to be carefully processed to ensure each data item in the message arrives in its corresponding database field. I thought it might be instructive for you to know how we do this.

Processing text files

Like other email programs, ours (Eudora Pro) lets you save the body of an email message separately to a text (ASCII) file. So, for each incoming order, we simply click on *File / Save As*, then double-click on our */Eudora/Orders* folder.

For the filename, Eudora proposes the Subject line of the email message, plus a ".txt" filename extension. Since we configured our Web order form to place the customer's name on the email Subject line, a customer named "Jeff Michelson" would get a default filename of *JeffMichelson.txt*. (Eudora closes up any spaces, and you can change the filename if you want.)

Now that the order details are saved to a uniquely-named text file, we can insert the file in a Q&A database record where we can pick it apart (parse it) and move the data items to their corresponding fields.

Figure 2 shows a typical post-parsed record.

Aside from the programming that parses the text file, the database is a simple affair. It's just one screen with fields for the data and four special fields—File, Txt, Pos, and Del—more about which later. The database's Lookup Table contains just one entry—*Path* in the Key column, and *E:\Eudora\Orders* (where the text files are stored) in the adjacent column 1.

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File:	JeffMi~1.txt	Place path to txt files in Lookup Table
Name:	Jeff Michelson	
Company:	Turnkey Systems, Inc.	
Address:	13455 Oliver Pkwy	
CSZ:	Irvine, CA 92345	
Phone:	949-453-5677	
Fax:	949-453-6598	
Email:	jmichelso@turnkey.com	
CardName:	Mastercard	
CardNumber:	5335-7010-3376-7709	
ExpMo:	12	
ExpYr:	00	
NameOnCard:	Jeffrey B. Michelson	
Item:	WinClip for Q&A 5.0	
Amount:	\$49.00	
Date:	8/27/99	
Time:	1:56:46 PM	
HTTP User Agent:	MSIE 4.0; Windows 95	
Txt:		
Pos:		
Del:		
		TJM 8/99
WEBORD.DTF	New Record 1 of 1	Total Records: 1 Page 1 of 1
Esc-Exit	F1-Help	F3-Delete form F7-Search F8-Calc F10-Continue

Figure 2. WEBORD.DTF with a typical post-processed record.

Crosstabs... cont'd from page 5

Then, press Shift-F6 to enhance the %EN and apply Bold, underline, or a different font. The @ALL must come after the enhanced column. This %[column] device is provided purely to be able to enhance the column (or row) created by a particular field entry in a cross-tab report.

To make English the leftmost language column, at the Cross-tab Spec, remove the COL from the Lang Code field, press F8 for Derived Fields Spec, and add this one:

```
Heading: Lang Code
Formula No. 1: @Select(Lang Code = "EN", "*" +
Lang Code, Lang Code)
Cross tab spec: COL
```

This puts the (derived) *EN column first. The @Select function works like an If-Then-Else statement, adding a "*" only if the Lang Code is English. (See Figure 3—and the Sidebar if you need more control over sorting order.)

SR Code	Lang Code												Count
	*EN	DK	FR	GE	IT	NL	PO	SP	SU	SW			
-----	---	---	---	---	---	---	---	---	---	---	---	---	=====
11a	1	1	1	1	1	1	1	1	1	1	1	10	
11c	1	1	1	1	1	1	1	1	1	1	1	10	
11n	1	0	1	1	0	1	0	0	0	1	1	5	
11p	1	0	0	0	0	0	0	0	0	0	0	1	

Figure 3. The English column now appears at the left.

Placing the SR Code rows in numerical order is achieved in a similar way. Because this code is a mixture of letters and numbers (alphanumeric), Q&A sorts it from left to right, so the 11's and 12's will come before the 5's and 6's. The solution, in this case, is to give the lower codes a leading zero just for the purpose of the report. This is done, as above, by using a Derived Field. At the Cross-tab Spec, remove ROW from SR Code and press F8 for Derived Fields. Enter the following for the second field. The result is shown in Figure 5.

```
Heading: SR Code
Formula No. 2: @Txt(@Num(SR Code) < 10, "0") +
SR Code
Cross tab spec: ROW
```

SR Code	Lang Code												Count
	*EN	DK	FR	GE	IT	NL	PO	SP	SU	SW			
-----	---	---	---	---	---	---	---	---	---	---	---	---	=====
04a	1	0	0	0	0	0	0	0	0	0	0	1	
04b	1	0	0	0	0	0	0	0	0	0	0	1	
05a	1	1	1	1	1	1	1	1	1	1	1	10	
05b	1	1	1	1	1	1	1	1	1	1	1	10	
05d	1	1	1	1	1	1	1	1	1	1	1	10	
06a	1	1	1	1	1	1	1	1	1	1	1	10	
91k	1	1	1	1	0	1	0	0	0	1	1	6	
91m	1	0	0	0	0	0	0	0	0	0	0	1	
Count	33	24	24	25	17	25	17	17	17	25	224		

Figure 5. Phrase codes sorted numerically.

Absolute Sorting Control for Crosstab Reports

To exercise complete control over language column order, you can enter the codes and sort order in the database's Lookup Table as shown in Figure 4.

Then, you can create this Derived Field:

```
Heading: Lang Code
Formula No. 2: @LU(Lang Text,2) + Lang Code
Cross tab spec: COL
```

Although this achieves the desired sort order, it prefixes the Lang Code with a number, which you might not find acceptable.

KEY	1	2
Lang Text	Lang Code	Sort order
English	EN	1
Danish	DK	8
Dutch	NL	6
French	FR	2
German	GE	3
Italian	IT	5
Portuguese	PO	9
Spanish	SP	4
Swedish	SW	7
Finnish	SU	9
Norwegian	NO	10

Figure 4. You can use the Lookup Table for custom column sorting.

Suppressing the zeroes

I haven't found a way to suppress zeros in cross-tab reports. But by printing the report to disk and processing it in Q&A Write (via a macro), I found I could achieve the effects I wanted.

To remove the zeros, I printed the report to disk to a simple filename such as C:\CODES.TXT. (The macro that prints the report overwrites the previous file of the same name.) When printing to disk, any headers and footers, fonts, and formatting such as aligning centre are removed. Accordingly, you're better off designing a plain report and inserting the resulting disk file into a ready-made document containing your headers and footers.

When this report is displayed in Write, it looks like Figure 1. The zeros can be removed by using Q&A's F7 Search/Replace box, as shown in Figure 6 on the following page.

The *Search for* line is backslash-space-zero-backslash-space-backslash. The *Replace with* line is



Figure 6. Use Q&A Write's Search/Replace to remove unwanted zeros.

backslash-space-backslash-space-backslash-space-backslash. The backslash tells Q&A to take the next character (in this case, a space) literally.

The printed report now looked much better—but I wasn't through! I reckoned that a dash or hyphen would look better than a gap. So I returned to the original document and replaced the zeros with a hyphen using these Search/Replace settings:

```
Search for: \ 0\ \
Replace with: \ -\ \
```

Gaining confidence (and fussiness), I then decided to replace the 1's (ones) in the report with checkmarks (ticks) using ASCII character 251. (Shown below as a "v.") To display this character, hold down the Alt key while pressing 251 on the numeric keypad:

```
Search for: \ 1\ \
Replace with: \ v\ \
```

And then I discovered another nice effect by using ASCII character 254 (a small black box). Voila—I had the report I wanted!

The last enhancement was to emphasise the rows containing missing phrases. This is done after the earlier enhancements. It assumes that zeros have already been replaced with hyphens. A series of these searches and replacements is performed by a macro. This time, the *Search for* line contains this:

```
Search for: \ \ \-\-\ \ \
```

This finds occurrences of two spaces followed by a hyphen then two more spaces. (The report is designed for two spaces between columns.) The *Replace with* line is left blank in this case, and the Mode is *Manual*. The macro "presses" the following keys as each occurrence is found:

```
Home
Ctrl-Right Arrow
Shift-F6
Bold
Ctrl-Right Arrow
F10
Down Arrow
```

With this final enhancement, the finished report looks like the one shown in Figure 7.

What the macro does

The macro performs a manual search for a hyphen with two spaces on either side and stops at the first occurrence. The Home key moves to the start of the line and Ctrl-Right Arrow moves to the start of the Code. Shift-F6, B turns on the bold text enhancement, Ctrl-Right Arrow selects to the end of the code, and F10 applies the enhancement. Down Arrow takes the cursor to the next line, where the macro is then repeated.

Once you've recorded and saved the macro, you can run it repeatedly on the document until all the relevant codes are emboldened, or you can edit the macro file, copying the macro actions as many times as the maximum number of incomplete rows you expect. This macro can then be run automatically as part of the report generating/printing process to make everything totally automatic. (The macro can safely run on—it will simply re-embolden the codes.)

Alec Mulvey owns Keyword Training & Consultancy in Ascot, near London, England, and has been building Q&A applications and training clients for nine years. Keyword Training is the UK distributor for the International English edition of Q&A and John Dow's Utilities. Fax +44-1344-884-111, alec@keywordtraining.com, www.keywordtraining.com.

The download file for Online Edition subscribers includes the sample Q&A 5.0 database described in this article with the cross-tab report design, along with two Write documents that show the report before and after the enhancements have been applied.

SR Code	Lang Code												Count
	*EN	DK	FR	GB	IT	NL	PO	SP	SU	SW	====	====	
04a	■	-	-	-	-	-	-	-	-	-	-	-	1
04b	■	-	-	-	-	-	-	-	-	-	-	-	1
05a	■	-	-	-	-	-	-	-	-	-	-	-	10
05b	■	-	-	-	-	-	-	-	-	-	-	-	10
05d	■	-	-	-	-	-	-	-	-	-	-	-	10
06a	■	-	-	-	-	-	-	-	-	-	-	-	10
06c	■	-	-	-	-	-	-	-	-	-	-	-	10
06f	■	-	-	-	-	-	-	-	-	-	-	-	10
06g	■	-	-	-	-	-	-	-	-	-	-	-	10
06j	■	-	-	-	-	-	-	-	-	-	-	-	10
06k	■	-	-	-	-	-	-	-	-	-	-	-	10
11a	■	-	-	-	-	-	-	-	-	-	-	-	10
11c	■	-	-	-	-	-	-	-	-	-	-	-	10
11n	■	-	-	-	-	-	-	-	-	-	-	-	5
11p	■	-	-	-	-	-	-	-	-	-	-	-	1
12a	■	-	-	-	-	-	-	-	-	-	-	-	1
12b	■	■	■	■	■	■	■	■	■	■	■	■	6
12c	-	-	-	-	-	-	-	-	-	-	-	-	4
12d	-	-	-	-	-	-	-	-	-	-	-	-	1
12f	-	-	-	-	-	-	-	-	-	-	-	-	1
12r	■	■	■	■	■	■	■	■	■	■	■	■	10
12s	-	-	-	-	-	-	-	-	-	-	-	-	10
16b	■	-	-	-	-	-	-	-	-	-	-	-	10
16d	■	-	-	-	-	-	-	-	-	-	-	-	10
81a	■	-	-	-	-	-	-	-	-	-	-	-	10
81b	■	-	-	-	-	-	-	-	-	-	-	-	10
81c	2	-	-	-	-	-	-	-	-	-	-	-	11
91a	■	-	-	-	-	-	-	-	-	-	-	-	6
91b	■	-	-	-	-	-	-	-	-	-	-	-	6
91e	■	-	-	-	-	-	-	-	-	-	-	-	6
91h	■	-	-	-	-	-	-	-	-	-	-	-	6
91k	■	-	-	-	-	-	-	-	-	-	-	-	6
91m	■	-	-	-	-	-	-	-	-	-	-	-	1
Count	33	24	24	25	17	25	17	17	17	17	25	224	=====

Figure 7. The finished report.

Text Files... .cont'd from page 8

The bulk of the programming is in the File field. Here it is followed by an explanation:

```
> If File = "" and @Add Then {

Txt =
@Shell("Dir " + @Lu("Path", 1) + "*.txt /b > " +
@Lu("Path", 1) + "orders.txt");

Txt = @Insert(@Lu("Path", 1) + "orders.txt");

Txt = @Replace(Txt, "
", ";");

File = @Userselect(Txt);

If File <> "" Then {

If @Len(File) > 12 Then
File = @Left(File, 6) + "~" + "1" + ".txt";

Txt = @Insert(@Lu("Path", 1) + File);

Txt = @Replace(Txt, "**", "");
Txt = @Replfir(Txt, "
", "");

Gosub Pos;

Name = @Mid(Txt, 18, Pos - 18); Gosub Del;
Company = @Mid(Txt, 18, Pos - 18); Gosub Del;
Address = @Mid(Txt, 18, Pos - 18); Gosub Del;
CSZ = @Mid(Txt, 18, Pos - 18); Gosub Del;
Phone = @Mid(Txt, 18, Pos - 18); Gosub Del;
Fax = @Mid(Txt, 18, Pos - 18); Gosub Del;
EMail = @Mid(Txt, 18, Pos - 18); Gosub Del;
CardName = @Mid(Txt, 18, Pos - 18); Gosub Del;
CardNumber = @Mid(Txt, 18, Pos - 18); Gosub Del;
ExpMo = @Mid(Txt, 18, Pos - 18); Gosub Del;
ExpYr = @Mid(Txt, 18, Pos - 18); Gosub Del;
NameOnCard = @Mid(Txt, 18, Pos - 18); Gosub Del;
Amount = @Mid(Txt, 18, Pos - 18); Gosub Del;
Date = @Mid(Txt, 18, Pos - 18); Gosub Del;
Time = @Mid(Txt, 18, Pos - 18); Gosub Del;

If @Askuser("File has been processed.", +
"Delete it now?", " ")
Then {
Txt = @Shell("Del " + @Lu("Path", 1) + File);
@Msg(File + " file deleted.");
}
Else If File = "" Then {
Clear(Txt); @Msg("No file selected");
}; Clear(Txt, Pos)
```

How the program works

With each order, we have our server supply the type of browser that submitted it. (This helps us design our site to accommodate a wider range of browsers.) The browser type fieldname is *HTTP User Agent*, which you can see in Figure 1. At 16 characters including the colon, this is the longest of the fieldnames, so all the actual data values start at column 18—an important number, as you'll see.

The program starts when you press Enter from the empty File field. Q&A shells out to DOS and runs a Dir

(directory) command that creates a list of all the *.txt file filenames in the /Eudora/Orders folder and saves it to a file named Orders.txt.

Q&A inserts this Orders.txt file in the Txt field. The carriage returns are replaced with semicolons, turning the list into a string value that's properly delimited for a picklist (Userselect list) of filenames.

When you select a filename, if it's longer than 12 characters (which it will be if you saved it to *customername.txt*), the program turns it into a valid DOS filename. (*Jeff Michelson* is converted to *JeffMi~1.txt*). Q&A can now insert this file in the Txt field (replacing the list).

With the order data file now in the record, the parsing begins.

First, the line of asterisks (See Figure 1) and the carriage return that follows them are deleted. Q&A then Gosubs to the Pos field, whose program is this:

```
< Pos = @Instr(Txt, "
"); RETURN
```

This little program finds and stores the position of the next carriage return in the file and returns to the main program. (You identify a carriage return in a Q&A program by typing a double quote mark, pressing enter, then typing another double quote mark.) At this point, the first line in Txt is the *Name*: field label followed by a bunch of spaces, then the person's name. We want only the actual name. Accordingly, @Mid grabs the line from the 18th character position through the *Pos - 18*th character position, and places it in the Name field.

Now a delete subroutine comes into play. Q&A Gosubs to the Del field, which contains this program:

```
< Txt = @Del(Txt, 1, Pos); Goto Pos
```

This program deletes the line with the person's name on it (so the Company line is moved up to the first line), then heads over to Pos to find out where the next carriage return is.

The process continues in this fashion (main program, Gosub to Del, Goto Pos, return to the main program) until the entire file in the Txt field has been parsed into the various corresponding fields. Finally, you're given the option of deleting the order file from the \Eudora\Orders folder. It's probably a good idea to do so. After all, you still have the original email message, and you don't want your picklist to get overly lengthy or accidentally re-process an already-processed order.

One day you might need to process "individually-wrapped" table-formatted text files like these. If you do, hopefully the techniques in this article will help get you moving in the right direction. In the meantime, feel free to send us an order at www.quickanswer.com just to experience the joy of knowing what we and Q&A will do with it once it arrives in our mailbox.

Tom Marcellus is editor of *The Quick Answer* and Chief Text File Processor

Merge in Word... .cont'd from page 4

Save the document as VBATestOpen.doc. Make sure you change paths and filenames to ones appropriate for your system and application.

Now, all you have to do is open VBATestOpen.doc in Word. It will automatically extract your data from your Q&A database and drop you in your merge document, ready to hit the Print button! To make the process even easier, you can create a new shortcut on your Windows desktop that starts Word and opens VBATestOpen.doc.

Erika Yoxall owns Hammer Data Systems in Garrettsburg, Ohio and hosts the Q&A User Group's Web site at www.qaug.com. 330-527-4018, hammer@apk.net.

@Help... .cont'd from page 7

would have to move all the remaining records out of the way, which would result in a serious drag on database performance.

Suppose you had a line of Chevies, followed by a line of Fords, then a line of Dodges all parked bumper to bumper along the curb. If another Ford came along, you'd have to move all the Chevies or Dodges to park the

new Ford with the other Fords. Easier just to park it where the Chevies start or the Dodges end, then, for faster searches, add the new Ford to an index to note its physical location in the line of cars. This is what the database .IDX file does – it tells Q&A in which records a particular indexed field value occurs (blue Ford convertible) so Q&A can go right to it.

That said, you *can* physically re-sort the database by copying the records over to a duplicate design using a Sort Spec (which you can save for reuse). But this won't "permanently" sort the database. As soon as you start adding and editing records again, Q&A will put them wherever it finds (or can make) available space.

When you run most any procedure on a database (including a Report, Mass Update, Copy Selected Records), you can press F-8 from the Retrieve Spec to get the Sort Spec. There you can name and save a Sort Spec by pressing Shift-F8, and load it by pressing Alt-F8.

For your situation, you might want to index the database on the Case Number field. To retrieve the records in ascending Case Number order, type 1AS in the Case Number field at the Sort Spec. With the field indexed (Speedy), the retrieval should be faster.

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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