Databases Can Answer Many Important Questions

by Morris D. Carey, Jr.

> Starting this year, State-of-the-Art Contractor will be shared by two, alternating columnists: Morris Carey, Jr. and Craig Savage. Morris will continue to cover the world of IBM and its compatibles. Craig, another California contractor and publisher of the *Macintosh Construction Forum*, will represent the Apple side. — *The Editors*.

Wouldn't you like to know which advertising method generated the most sales, or which zip code had the best estimate-to-sales ratio (closing rate), or which worker or salesperson is most efficient?

Storing the routine information we collect daily in a database can answer those questions and more.

My brother and I have been using database management software in our company for almost eight years. Database management programs basically permit you to:

- Create an on-screen form, like a piece of paper with lots of divisions for organizing the collected information.
- Enter the information, or data, into the form and, when necessary, change or remove it.
- Join the data with information from other files and sort it selectively.
- List sorted data on-screen, send it to a separate file, to another program, or to a printer.

dBase IV, Version 1.1, from Ashton-Tate, is such a program. dBase is a relational database program. This means it allows the user to create input forms that make use of a common chunk of data to link information from different files, and create a new, unique file. Such a file could then be used to create other informational relationships that each file by itself might not be capable of providing.

For instance, you have a file of vendors listed by job, and a different file of employees also listed by job. In a relational database program such as dBase, the data from the two files can be melded to show which combination of subs and workmen make the most profitable project by job, or other common denominators.

It's not uncommon to see contractors using a spreadsheet program for data management. I prefer a database management program instead because the data input and output can be controlled more effectively and easily with it. Although you can lock "cells" (the individual boxes in which you store information) to prevent accidental data entry into a calculated field, general data entry control at the cell level is virtually nonexistent in a spreadsheet program. But it is a standard feature of good database management software.

Although it has been the standard, *dBase* has always been an extremely difficult program to understand and learn with no menus or on-line help. But that's all changed. The program is now menu-driven, has "context-sensitive" help, and no longer requires an engineer to operate it. Context-sensitive help means when you press the help key, the screen that can address the problem marked by the cursor will automatically pop on the monitor.

In addition, dBase has a label-making feature and a form letter feature that makes it especially useful for creating contracts. You can use dBase to make your customer list, and then use it again to print a contract from the customer list once the sale is made. You can then use the original contract data to create contracts for subs. Neat, huh?

dBase is widely available, but be careful to ask for the latest release (1.1), particularly in dealing with mail-order houses. The previous version (1.0) contains 800 known bugs; don't let yourself be tempted even if you see it at bargain prices.

Contractors Unite

Much of the data I have in my dBase files was first keyed into software programs I use for other parts of my business. In some cases, I was able to transfer that data electronically, but often it had to be freshly entered by hand. That is a frustrating waste of time and brings up one of the most serious computing problems: the inability to take data we've put in one company's software and transfer it to a program written by another company.

For example, you can use your contract price for a job, generated by an estimating program, in several places — your job-cost accounting software, accounts receivable software, and the program that prints your contracts and lien release forms.

Or you could extract job type, job amount, and job location from your estimating system, send them to your spreadsheet or database management program, and determine average values for certain job types by zip code. The variations are as endless as the data available and your particular needs. However, currently you can't get there from here because you can't carry your data from one program to the other.

Essentially, your estimating system may not "talk" to your accounting system, and the program you use to print your contract may not accept data from either. The frequent result: you have to enter the same data three or four times. This is a problem that has been addressed more effectively by Apple Corporation than by IBM, but neither are where they need to be.

Large businesses have the luxury of purchasing mainframes or minicomputers that are operated by a data management professional. The data manager writes custom programs that "bridge" these problems, or manages programmers who do. Restricting the number of times data is keyboarded reduces errors by an unbelievable degree. Most large companies do it just once — single entry data. That's how Mastercharge manages billions of data entries and still comes out right. Well, most of the time.

In the microcomputer world, we have the luxury of purchasing software that is powerful and versatile. In fact, microcomputer software is far more sophisticated than most of the stuff used on mainframes.

However, the software available to micro users is written by as many different folks as there are United States cities. That's the problem. You see, the author of the accounting software you use probably doesn't realize that, although you like his accounting package, you much prefer someone else's estimating module. He was careful to make sure that his accounting and estimating programs interfaced, but that's not true of his accounting package and your estimating choice. And that means you will have to re-enter all the data.

I have seen major improvements in this interface problem over the last several years, especially in integrated software that is made for construction accounting. Many authors are becoming more sensitive to the interface problem, but it's still largely ignored by others.

To turn things around, all software users need to be vocal. The next time you go shopping for software, ask for a program that outputs your data in a "comma-delimited ASCII" format (a nearly universal protocol at this level) that lists data input and output routine information in the operator's manual. If you already own a program, call your technical support person or sales rep and give them a pitch for this capability.

Some programs are capable of outputting your data in ASCII format, but not in a comma-delimited structure. Straight ASCII output is fine for many word processors, but it is not formatted for use by a database-management program. However, delimited ASCII files are used universally by word processors that have mail merge capabilities.

Together we can be an extremely powerful force in sending a message to programmers across the country. By prompting software developers to standardize their input/output routines, we as end users will be able to eliminate yet another couple of late-night hours a month and an irritating source of error.

Readers Write

Frank Turk of Frank Turk General Contractor, Mayfield Heights, Ohio, writes: "We are a small remodeling and alteration contractor. I have taken some courses in computing and would like to start a basic cost-estimating and management system. I would like to know which basic packages and software to buy."

First, Frank, you might want to check out DesCon '91, a computer show for architects, contractors, and engineers that will be held in Washington, D.C., May 7-10, 1991. You can see all of the latest toys and get a glimpse of the future all at once. For information on free admission to the 1,500-booth exhibition, call 800/451-1196.

Second, word processors are versatile and easy to learn, and will improve your business image. Look into *Word Perfect*, *Microsoft Word*, and *WordStar*. They are nationally distributed and are available almost anywhere software is sold.

Third, Lotus Corp. makes a spreadsheet program called *1-2-3*. It too, is a standard, and can perform tasks that you are doing on columnar pads in one-tenth the time — and more accurately as well.

Finally, you may want to contact the sales departments at the following companies to investigate their programs on estimating and accounting:

- Timberline Software, Beaverton, Ore.
- Construction Management Software (CMS), San Diego, Calif.
- Master Builder, Rhonert Park, Calif.
- National Computer Estimating, Tucson, Ariz. ∎

Morris D. Carey is a partner with Carey Bros. Construction, a remodeling firm based in Pittsburg, Calif. In addition, he has reviewed hundreds of construction-related computer products and conducts computer seminars. If you have a question about computing in construction, address it to State-of-the-Art Contractor, JLC, RR#2, Box 146, Richmond, VT 05477.