COMPUTER CORNER

A look at data base management

LES SPINDLE*

FILE CABINETS HAVE NOT YET EXACTLY gone the way of the dinosaur, but their use as office tools has certainly been curtailed by the microcomputer. In the early days of business microcomputing, considerable programming skill was needed to achieve a truly interactive filing system. Programs for payroll, inventory, employee, payables/receivables, and general ledger were all great aids in keeping track of office records, but each was essentially an entity unto itself. If the payroll file required access to data from the employee file, followed by subsequent calculations, for instance, several extra steps and time-consuming data-entry procedures were required.

A recent development has improved that situation substantially. System designers have engineered an advanced software tool to integrate miscellaneous file-manipulation activities into one software program: the data-base management system (DBMS).

A DBMS software program goes a considerable distance beyond the mere cataloging of various information categories—it actually manages and processes data interactively among the various separate files. With the instantaneous acquisition of required data—and simultaneous updating of one file by another—the DBMS approach represents a big advancement over the use of isolated file programs.

The accompanying figure shows just how much of an improvement it is. In the older file-handling setups, payroll, accountings, and inventory files interacted among themselves to keep data current, but couldn't automatically interface with one another's transactions. In the DBMS configuration (see Fig. 1), all data records are centralized in one main data base that is processed by the DBMS programs, then interfaced with the various accounting programs in use to perform all of the individual functions required of each program.

After purchase of a commercial DBMS program, the software is set up to meet your specific needs. First, it must be decided which categories the system should include, how the main category is to be taken down into sub-

units, and how the data is to be sorted. Once the system is established, most DBMS programs are highly tutorial in nature, prompting the user with instructions, preventing accidental data erasure and helping with debugging.

The essential setting up of a file is quite simple. A record, or major category, is established. Then fields, which are sub-divisions within a record, are defined. The fields and records work together to access any necessary data
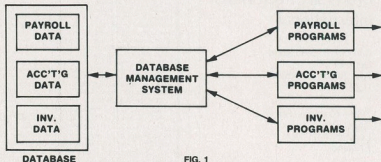

FIG. 1

TABLE 1
SOME DBMS PACKAGE OPTIONS

Manufacturer	Name of package	Compatible system(s)	Price (or range)*
Bottom Shelf Box 49104 Atlanta, GA 30359	Data Manager	TRS-80	$75
Compco 8705 N. Port Washington Rd. Milwaukee, WI 53217	Datastar	any CP/M-based (2.2)	$350
Condor Computer Corp. 3938 Research Park St. Ann Arbor, MI 48107	Series 20/DBMS	any CP/M-based (2.2)	n/a
High Technology, Inc. Box 14665 Oklahoma City, OK 73113	Data Base Management System	Apple II Plus	$100
Microdata Base Systems Box 248 Lafayette, IN 47902	Data Base Management System	Apple II, North Star Horizon, TRS-80, any 2.2 CP/M or OASIS-based	$420
Personal Software 1330 Bordeaux Dr. Sunnyvale, CA 94086	CCA Data Management System	Apple II, TRS-80	$75
Softwarehouse, Inc. 695 E. Tenth N. Logan, UT 84321	Databank	any CP/M 2.2-based	$200

n/a - information not available; check with dealer
*prices are subject to change

*Managing Editor, Interface Age magazine.

according to the requested user information.

A sort function can also be set up in several different ways, based on your requirements. For instance, you may want an alphabetical listing by name. By keying in the command for a particular "sort" routine, you can have an instant printout of the necessary data, sorted to your specifications.

There are a number of DBMS programs, of varying quality, on the market. To illustrate how a typical system is set up, let's take a look at one of the better offerings—*dBASE II*, from Ashton-Tate, 3600 Wilshire Blvd., Suite 1050, Los Angeles, CA 90010. That is

one of the most flexible and versatile DBMS microcomputer programs to be found.

To use *dBASE II*, the following configuration is necessary: an 8080, 8085, or Z80-based CPU, 48K bytes minimum RAM, at least one hard or floppy disk operating under CP/M, and a 24-line by 80-column CRT terminal. A text printer isn't required, but comes in handy when setting up command files.

Up to 65,535 records will fit on each data-base file, with 1,000 characters maximum on each record. Up to 32 fields are allowable per record—with up to 254 characters per field.

A versatile assortment of commands

is designed with simple verbs as call words, making the program easy to use even for a novice. The CREATE command creates and copies existing files, creates report form files (for outputting records in standard formats), and links files together for exchange of information. With that system, report copies can also be saved for later use, and index files can be created.

The APPEND command allows appending data to the end of a file or inserting data to an existing file.

An EDIT mode allows altering of records and fields, and deletion of records.

The DISPLAY and LIST commands allow access to the records or fields on the format used in the set-ups.

Several positioning commands control the manner in which the record pointer is positioned in the field; those commands will locate the pointer at the beginning, at some specified position, or at a position either forwards or backwards from the given position.

File-manipulation commands (SELECT, SORT, etc.) allow for file interaction. Files can be appended to one another (even files other than *dBASE II*), or they can be reorganized or interchanged, if desired.

Finally, the memory-variable commands (ACCEPT, WAIT, GET, etc.) allow pending or incomplete information to be sorted for later use in updating the records.

One feature that makes that program a particular standout among DBMS packages is its ability to function almost as a complete programming language. The various commands can be linked together for more complex manipulations, allowing versatility in adapting the program to your individual needs.

Command programs can be devised by the system developer. Those programs can be stored as command files. Upon creation of a menu, the programs are easily accessible by a simple key stroke.

Beyond that, the program is compatible with ASCII files, and can interface with other programs that you might be using on your system. Existing data bases can be easily added to the DBMS file without manually re-entering the data.

As sophisticated and innovative DBMS packages such as *dBASE II* continue to enter the market, the prospects for efficient operation get continually brighter. The DBMS concept has significantly enhanced data-processing techniques where information must be interactive as well as easily retrieved. Table 1 lists a cross section of some of the DBMS packages on the market, with compatible systems indicated.   **R-E**

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