RESEARCH IN
WORD PROCESSING
NEWSLETTER

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Database Management for Teachers and Researchers — Part I

Many faculty in writing programs already recognize the computer as a valuable tool for word processing, textual and statistical analysis, and drill and practice. However, there are many other important academic applications for which the machine is well-suited. One such application is database management, or **DBM.**

Essentially, DBM may be defined as the storing, retrieving, and outputting of words and/or numbers which teachers may have reason to reference more than once. Everything from bibliographic data with extended annotations to test questions and answers may be cross-referenced, sorted, and printed using DBM software and a microcomputer (of course, database capabilities also are found on mini- and mainframe computation systems—the latter being where DBM first began). This month begins a series of articles in which we'll explore some academic applications of DBM programs and discuss the applicability of specific software packages to the needs of teachers and researchers.

Before we begin, however, let's take a look at the two basic types of DBM systems—**file managers** and **relational database managers**—and how each handles information. Computerized **file managers** are much like those good old metal filing cabinets in your (and my) office. Ideally, your files' drawers are full of manila folders which have been labeled and put in some type of logical order—chronological, alphabetical, topical. When you want information about, say, pronouns and antecedents, you may open the "P" file drawer and search for your "Pronoun" or "Parts of Speech" file folder. When you find it, you extract the information you need (maybe a transparency or lecture notes which happen to be quite lucid), use the information for your class, and then return the material to the same folder from which it came. (Before too many of you write in asking, "Who's *he* talking about, anyway?", remember that I am stating an ideal situation to make a point.)

To a computer which has DBM software, these manila folders are called **records**. The information contained in a record occupies physical space on the computer's storage media just as the handwritten or typewritten words on a piece of paper occupy physical space on the page. The specific amount of physical space your information takes up in a DBM record is called a **field**. Like your own notes, DBM information fields may vary in length from a few cryptic jottings to an almost limitless number of words (we'll talk more about this topic in future installments).

Now we'll turn to a practical example to further explain DBM. Traditionally, bibliographic citations are formatted alphabetically—last name, first name, and so forth. When working with a DBM system, you first establish names for your informational fields, after which you begin typing your bibliographic information. *NOTE: You are not required to follow any prescribed format when designing these names.* Your computer's CRT screen may look something like this when you're done inputting your fields:

```
AUTHOR    :
TITLE     :
DATE      :
PUBLISHER :
REMARKS   :
```

If you have a penchant for out-of-the-ordinary bibliographic display formats, it could just as easily have been created to look like this:

```
TITLE     :
REMARKS   :
PUBLISHER :
DATE      :
AUTHOR    :
```

Whether you format your field displays in these or in some other format, *what you see on the CRT screen in no way affects how the printed output can be made to look on paper.*

Note at this point that you only need to type in these informational field names **once**, since they become a permanent part of the specific database file (permanent, that is, in the sense that you don't have to reenter the field prompts each time you turn on the computer to work with the database). After entering your first citation, the computer program asks you for the next and all further citations you may wish to enter into your database at that particular time.

The record structure we just created contains five fields: AUTHOR, TITLE, DATE, PUBLISHER, and REMARKS. Many DBM programs can handle dozens of specific informational fields per record. When first deciding the specific information that you want to include in your database, it is a good idea to try to formulate a plan around a theme or genre—American Literature, Rhetoric, Semiotics, Science, etc. You *could* combine many thematically diverse citations in the same database; however, that isn't the most efficient way to do it (you, like the computer, can find information faster when similar subject or topic references in file folders aren't spread all around the filing cabinets—or, in the case of the computer, the floppy disk).

Now, let's create four records for a database which has as its controlling organizational theme—and title—"Existentialism":

Record #1

```
AUTHOR    : Adams, Shirley
TITLE     : Inside Camus
DATE      : 1968
PUBLISHER : New York: Abbey
REMARKS   : angst, warfare
```

Record #2

```
AUTHOR    : Roberts, Marcus
TITLE     : Where Am I?
DATE      : 1982
PUBLISHER : Leeds: Zygote
REMARKS   : humor, despair
```

Record #3		*Record #4*	
AUTHOR	: Billings, Rudolph	AUTHOR	: Adams, Shirley
TITLE	: Existentialism III	TITLE	: The Question
DATE	: 1974	DATE	: 1982
PUBLISHER	: Paris: JPS Press	PUBLISHER	: Leeds: Zygote
REMARKS	: humor, futurism	REMARKS	: humor, angst

The individual records do not have to be typed in alphabetically: you can add to, change information within, or delete them whenever you desire. Some DBM software programs also allow you to add or delete fields **globally** (i.e., change the structure of all current and future informational field prompts) whenever you wish.

Now that we've created our database, let's see what we can do with the information contained in it. File manager DBM systems allow you to search through your databases *one at a time*—extracting, sorting, and printing specific field information you need in the format you want. Imagine having to look through your manila file folders to find, for instance, all books and articles that contain references to or examples of "humor." In a DBM program, you would first ask the computer to find any reference to "humor" in the "REMARKS" field of every record. Almost instantaneously, you would see Record #2, the first of three records possessing the word "humor" in the "REMARKS" field, flash upon your CRT screen. Records #3 and #4 would also be ready for you to sort alphabetically, delete, print out, etc.

To summarize, file managers enable you to locate and process all database records by field names—for instance, a listing of all publications sorted alphabetically by "AUTHOR" or by "TITLE"—or by information contained within a specific field or fields. Some file-management DBM systems also allow for simultaneous multiple field searches: for example, all "AUTHOR" entries named "Adams" who have "humor" in their respective "REMARKS" fields.

The second type of DBM configuration, the **relational database manager,** can do everything that a file-management system does—plus much more. Remember that file managers read one record at a time (often called a "sequential scan"), searching through each field within a record before coming up with the data you requested. Relational DBM programs *simultaneously interact with multiple database files.* Why is this important? Well, for one thing, speed of information retrieval is increased significantly when using a relational DBM. But more important is your ability to cross-reference, or search for and retrieve, very specific information without needing to have the records in one database file.

Looking once again for references to "humor," you probably could find them in your American Literature, English Literature, Autobiography, and even Existentialism databases. To search through each one, even with a computer, is time-consuming. A relational database manager affords you the luxury of searching for a field reference ("humor") in multiple databases in one fell swoop—as long as you have your databases on one disk. The specific number of databases, and fields within their respective records, that may be simultaneously "queried" depends on the DBM software itself.

You can begin to see the importance of analyzing your database needs before purchasing that "bargain-sale special" at your local computer store. The applications of DBM software systems to the academic community are extensive. In our next installment, we'll explore **field-length restrictions** in DBM programs and how they can make or break a DBM's chances with teachers and researchers.

[ED. NOTE: We encourage input from readers as we continue our discussion of database applications for the academic community.]

Bibliography Update

Alexander, John and Fred Swartz. "The Dynamics of Computer-Assisted Writing Sample Measurements at Ferris State College." Annual Meeting of the Michigan Council of Teachers of English. Lansing, MI: October 29-31, 1982. [ED 233 344], 17pp.

Alten, Judith Walthers von. "Translators Gain Fluency: Multilingual Word Processors Point to Universal Communication." *Infoworld.* 6:33 (August 13, 1984), pp. 35-37.

Buckley, William F. "Learning to Touch Type." *Computers and Electronics.* 22:8 (August 1984), pp. 24, 26, 84.

Caruso, Denise. "Timothy Leary: 'Everyone in the New Age Will Be an Author.' " *Infoworld.* 6:30 (July 23, 1984), p. 46.

Daiute, Colette A. "Word Processing: Can It Make Even Good Writers Better?" *Electronic Learning.* (March-April 1982), pp. 29-31.

Edelsky, Carole. "The Content of Language Arts Software: A Criticism." *Computers, Language, and Reading Arts.* 1:4 (Spring 1984), pp. 8-11, 52.

Emmett, Arielle. "The Two Sides of a Word Processor: Front End and Back End Distinctions Give Structure to an Increasingly Complex Set of Software Capabilities We Have Come To Know As Word Processing." *Personal Computing.* 8:7 (July 1984), pp. 131-145.

Gould, J.D. "Composing Letters with Computer-based Text Editors." *Human Factors.* 23:5 (1981), pp. 593-606.

Hagen, Dolores. "Word Processing Works with All Ages." *Closing the Gap.* 3:1 (April/May 1984), pp. 11-12.

Hocking, Joan. "The Impact of Microcomputers on Composition Students." Annual Meeting of the Conference on College Composition and Communication. Detroit, MI: March 17-19, 1983. [ED 229 791], 9pp.

Humes, Ann. "An Instructional Model of the Composing Situation." [ED 192 379]. Los Angeles, CA: Southwest Regional Laboratory Technical Note (June 1980).

Krasnoff, Barbara et al. "The Word on Word Processors." *PC Magazine.* 3:17 (September 4, 1984), pp. 112-119, 151-152, 159-182.

Levin, J.A. *Microcomputer-based Environments for Writing: A Writer's Assistant.* San Diego, CA: Laboratory of Comparative Human Cognition, University of California, San Diego, 1981.

O'Connor, Rory J. "Outline Processors Catch On." *Infoworld.* 6:27 (July 2, 1984), pp. 30-31.

Rosenthal, Steve. "Prose with Style: An Overview of Writer's Workbench." *Unix Review.* 2:5 (August 1984), pp. 46-56.

Selfe, Cynthia L. and Billie J. Wahlstrom. "Beyond Bandaids and Bactine: Computer-Assisted Instruction and Revision." [ED 232 182], 13pp.

Sigurd, Bengt, "Commentator: A Computer Model of Verbal Production." *Linguistics.* 20 (1982), pp. 611-632.

Sivin, Jay P. et al. "EPIE Reports: Some Notes on Word Processing in the Classroom." *Computers, Language, and Reading Arts.* 1:4 (Spring 1984), pp. 53-55.

Winograd, Terry. "Computer Software for Working with Language." *Scientific American.* 251:3 (September 1984), pp. 130-145.

Creative Word Processing in the Classroom

Creative Word Processing in the Classroom is a newsletter focusing on word processing in the K-12 classroom. Besides its project-based editorial emphasis, the newsletter also describes funding patterns of private foundations and government agencies (California state funding is given special attention). Articles are color-coded to match interests of teachers, administrators, and librarians. Subscriptions are $9.00 yearly for the fall, winter, and spring editions. Contact *Creative Word Processing in the Classroom*, 2210 Wilshire Blvd., Suite 375, Santa Monica, CA 90403.

CCCC Committee Evaluates Word-Processing Programs

The CCCC's Committee on Computers and Composition is asking computer-oriented faculty in academic writing programs to submit short, written evaluations of word-processing software and other programs used in teaching writing. Evaluations will follow a Committee-modified version of formatting recommended in the "NCTE Guidelines for Review and Evaluation of English Language Arts Software." It is hoped that evaluators will provide 150 copies for distribution at the 1985 CCCC convention in Minneapolis. The Committee also invites other software-wise faculty to spend some time at its convention-floor booth, describing their experiences and answering questions. Contact Audrey J. Roth, 8620 S.W. 118 Street, Miami, FL 33156.

October Conference in Chicago

A K-12 conference on "Computers & Reading/Learning Difficulties," to be held in Chicago on October 26-27, 1984, will feature sessions and commercial presentations involving language arts, including the use of word processing in programs. The conference is being sponsored by the *Computers, Reading and Language Arts* journal. Contact Educational Computer Conferences, 1070 Crows Nest Way, Richmond, CA 94803.

Assembly on Computers in English at NCTE Convention

NCTE's 74th Annual Convention in Detroit this year will begin to form an "Assembly on Computers in English."

Those interested should come to the organizational meeting on Saturday, November 17, 1984, from 5:15 to 6:15 p.m. Contact Audrey J. Roth, 8620 S.W. 118 Street, Miami, FL 33156.

Clarkson to Hold Conference in October

Clarkson University's Center for Liberal Studies will host a conference to explore "Microcomputers and the Learning Process" on October 11-13, 1984. Sessions include "CAI—The Teaching of Writing" and "The Microcomputer in Language and Linguistics" among the broader institutional field. Contact Frances Weller Bailey, Conference Coordinator, Center for Liberal Studies, Clarkson University, Potsdam, NY 13676.

A Computerized *Oxford English Dictionary*

Long used with exercises to stimulate language awareness in composition classes, the *OED* will be put into machine-readable form, thanks to a $10,000,000 project by Oxford University Press—the publisher's largest effort since it began the dictionary a century ago. At least 120 operators will take approximately 18 months to key-in every one of the 60,000,000 words in English since 1150 A.D.

It is expected that systematic large-scale sortings and searches will quantify more precisely the evolution of the language, perhaps yielding new insights into semantic changes over a protracted period of time. Already possessing a considerable library of machine-readable copies of the "Great Books," Oxford University continues to develop new tools for humanities research.

Once the computerized *OED* becomes widely available, many believe that previous research on its use in writing programs—easily accumulated by means of a token search of on-line databases—will be reinforced by the computer's power to search and manipulate large databases. Literary scholarship is also mvoing quickly to harness the new tool, which promises to add statistical weight to theories that, until now, have relied on more limited human processing.

New questions are being asked about how language has been used by writers. What can we ask the computer about an individual writer or period, considering that the larger machines can now speed through 1,000,000 "mental" operations each second? The attempt to design and test new algorithms for programs is already providing a new sense of boundaries and options in the research process, as well as new quantitative information about how language works. Improved text-analysis programs will also allow stricter monitoring of student papers in writing programs, ultimately producing meaningful charts and graphs for both the individual-in-progress and institutional trends over longer periods.

SOFTWARE REVIEW - *TextPlus*

The newsletter does evaluations of word-processing software to help you discover programs that might fulfill your and your students' writing or research needs. This month, we evaluate *TextPlus*, a combination word-processing/file-management program published by Owl Software Corporation.

When reviewing a word-processing package, we are not endorsing any product. Rather, we are describing the software's strengths and weaknesses and examining how these features (or lack of them) might affect students and teachers in academic writing situations.

PROGRAM:	*TextPlus*
PUBLISHER:	Owl Software Corporation
ADDRESS:	6927 Atoll Avenue North Hollywood, CA 91605
LIST PRICE:	$240.00
WILL RUN ON:	IBM-PC, XT, and compatibles
MEMORY (RAM) NEEDED:	128k (64k version available)
DISK DRIVES NEEDED:	one (two recommended)
SPELLING DICTIONARY:	not included with program
CORRECTION METHOD:	n/a
ON-DISK TUTORIAL:	yes (good)
QUALITY OF MANUAL:	fair (good information, bad format)
EASE OF LEARNING:	fairly difficult
EASE OF USE:	moderately easy

COMPOSITION

FEATURES	**YES-NO**	**COMMENT**
Help screens (video tutorials you can call on during editing)	yes	you may ask for help at anytime during an editing session by pressing the "F8" key (on the IBM PC) while in the Initial Function Key command mode (see Figure 2)
Automatic headers (titles), footers, and page numbers	yes	the program allows for centered information by using a two-letter (**HE** = for headers, **BI** = for footers, **PAGENUM** = for page numbering) code
Full-screen cursor control (ability to move to any spot on the screen to edit)	yes	
Automatic word wrap (no "Return" or "Enter" required at the end of each typed line)	yes	you have the option to toggle this switch off or on by using the AD = embedded command (see Figure 1)
Adjustable left- and right-margin settings (e.g., for indenting extended single-spaced quotations)	yes	*TextPlus* makes extensive use of embedded commands to accomplish many formatting tasks: see Figure 1 for a list of the more important functions
Single and double spacing	yes	
Automatic text adjusting	no	to readjust (reformat) your text on the screen so that it looks more like your final printed output, you must enter F8, the FRMT function key, which is available in the Alternate Function Key command set (see Figure 2)

View your text on the screen as it will appear on paper after printing	yes	*TextPlus* allows you to preview your document on the screen and stop the preview (to return to edit mode) if you should spot an error
Search for and/or replace words	yes	by activating the "F7" key, you may replace a word or phrase up to 40 characters in length
Move text from one location to another in a document	yes	you can both copy (or duplicate) and move (or cut/paste) blocks of words

LITERATURE

Superscripting (...the end."[12])	yes	for research papers requiring references

CREATIVE WRITING

Ability to space lines in less than full increments (quarter- and half-line spacing)	yes	important when the appearance of a document complements content (i.e., in concrete poetry)
Proportional spacing	yes	adjustments are made by inserting spaces between words (not true micro-justification, which uses 1/120" increments between characters to make a document look like it was printed professionally)
Right-justified text (text lines up on the right margin)	yes	

TECHNICAL WRITING

Subscripting (H_2O)	yes	
Graphics	no	enables you to create flowcharts, graphs, schematics, and other illustrations

PROFESSIONAL

Create your own "HELP" screens	no	with this feature, you can design your own on-disk grammar, rhetoric, and usage tutorials that your students may retrieve while composing or editing their papers

Text merging (also referred to as "boilerplating")	yes	with this feature, you can create, store, and recall frequently used citations
Background printing	yes	allows you to edit a document while printing another

AD = Y or N	when adjust is on (**AD** = **Y**, the default mode), words are automatically moved from one line to another to fill each line as fully as possible; **AD** = **N** means that you can treat your text lines onscreen as you would with a typewriter—ending each line with a "Return"
BT = x...x	text (x...x) is centered and printed at the bottom of each page
CE = x...x	text (x...x) is centered and printed on the next line
CF =	this command tells the computer that you are in single-sheet paper mode; the printer stops at the bottom of each page so that you can insert a new sheet
HE = x...x	text (x...x) is printed at the top of each page after the current page (the one on which the command is located)
JU = Y or N	when justification is on (**JU** = **Y**), all lines which do not end with a hard return—pressing the "Return" or "Enter" key—are printed with spaces between words to make the right margin flush; **JU** = **N** means that justification is off
LM = #	this changes the left margin so that printing begins on column # (0-79)
LS = #	line spacing can be changed anywhere in the document by changing the value of # to 1 (single), 2 (double), or 3 (triple)
NP = #	if the # is omitted, the printer begins on a new page; otherwise, the page advance occurs only if there are fewer than # lines left on the current page (this is for widow/orphan control)
TA = #	the printer head is tabbed to column #
TY = #	when using a dot-matrix printer, the # tells the printer which typestyle should be used (e.g., bold print is 9, compressed print is 12, expanded print is 4, italic print is 22)
UL = x...x	text (x...x) is printed underlined, with spaces left not underlined

FIGURE 1: TextPlus Embedded Commands

Initial Function Key Commands

F1 = BLKINS (Block Insert)
F2 = FKEY (Change Function Keys)
F3 = MOVE (Move [cut/paste] Text)
F4 = DEL (Delete)
F5 = ADD (Add Lines to End of Text)
F6 = SETL (Set [move to] Line)
F7 = SRCH (Search for Text)
F8 = HELP
F9 = SKIPW (Skip Word)
F10 = DW (Delete Word)

Alternate Function Key Commands (changed with F2)

F3 = SPL (Split File)
F5 = COPY (Copy [duplicate] Text)
F6 = MERG (Merge File with other)
F7 = REPL (Replace Text)
F8 = FRMT (Reformat Text)

FIGURE 2: TextPlus Function-Key Commands

OTHER FEATURES

TextPlus functions as a credible word processor, but its real strength is an ability to function both as a word processor and as a file manager. Some of the many uses of the software besides word processing are mass mailing, database management (see this issue for an overview of database managers), and card files (notecards, address lists, and other such functions). The database does have some field-length and file-length restrictions which should be addressed before you purchase it. Although *TextPlus* does not come equipped with its own spelling dictionary, programs such as *The Word Plus* [Oasis Systems, 2765 Reynard Way, San Diego, CA 92103], *The Random House Proofreader* [dist. by Digital Marketing Software, 2363 Boulevard Circle, Walnut Creek, CA 94595], and other spelling checker or text analysis programs which read plain ASCII (American Standard Code for Information Interchange) textfiles should work quite well.

OVERALL EVALUATION

TextPlus and certain dot-matrix printers (IBM, Epson, C. Itoh F10, NEC 8023A, Okidata 84, and IDS Prism with color) were made for each other. If you demand the letter quality of a daisywheel printer other than a NEC 3550, think twice before purchasing the program. You can configure the program's printer driver for most dot-matrix and daisywheel printers not automatically supported in the software's "INSTALL" program, but such an operation assumes you understand things such as "Escape" sequences and ASCII code (if you know what ASCII 13 and 10 mean when used together, then you're probably able to set up *TextPlus* for your specific printer). Everything else being equal, *TextPlus* is not one of your "easy-to-learn" word processors. Because of the number of advanced editing, data-handling, and text-formatting features resident within, it isn't well-suited for the introductory writing course or for writers who lack the time or desire to thoroughly investigate the program's power. Once you wade through the manual's thorough but confusingly written instructions, however, you can see that *TextPlus* is quite a full-functioned bargain.

PS: ASCII codes 13 and 10 are often used together to tell a printer that it should execute a carriage return [13] and a line feed [10], thus positioning the printhead on the first column of the next line on a page.

[ED. NOTE: The categories we include in our software reviews reflect course offerings found in academic settings. If you feel we should add other categories that address common writing initiatives, or if you would like to see more program features included under existing categories, let us know.]

Information Overload and the Library-Research Paper

Despite Henry David Thoreau's admonition to simplify our lives, we find ourselves increasingly enmeshed in complexities. The much-celebrated Information Age seems nearly upon us as massive databanks become more accessible. And won't library-research papers become even easier for information-rich students? After all, can't we make better decisions if more information is consulted?

Not necessarily, maintains Jeremy Rifkin in *Entropy: A New World View* (NY: Viking/Penguin, 1980). Like many others, Rifkin is worried that "the more information that is made available to us, the less well informed we become. Decisions become harder to make, and our world appears more confusing than ever." In fact, "as more and more information is beamed at us," he explains, "less and less of it can be absorbed, retained, and exploited. The rest accumulates as dissipated energy or waste."

Faculty who teach students to write library-research papers will not only have to keep abreast of new directions in electronic scholarship, but will also continue to help students organize, and evaluate the relative value of, published information. It is clear that we will need to develop better heuristics for steering students through the maze of computer-based sources rapidly becoming available.

Manuscript Submissions Welcome

The newsletter welcomes from our readers article submissions which pertain to word-processing applications in academic writing. Manuscripts should be OCR readable (Courier, Letter Gothic, or similar letter-quality typefaces) or may be submitted on disk using WordStar, Microsoft Word, EasyWriter II, or standard ASCII code in IBM-PC DOS (5¼" diskette; 1.1, 2.0, or 2.1) or CPT 8500 (8" disk) formats (direct uploading of articles via modem will be available soon). All manuscripts should include a short autobiographical sketch. The Editors reserve the right to edit articles, if necessary. If you want your manuscript returned, please enclose a stamped, self-addressed envelope with your submission. Address all correspondence to the Editors, *Research in Word Processing Newsletter*, Liberal Arts Department, South Dakota School of Mines and Technology, 500 E. St. Joe, Rapid City, SD 57701-3995.

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