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Provided by
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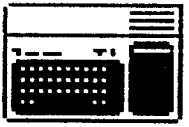

USING THE

NAVARONE

DATA BASE MANAGEMENT

SYSTEM

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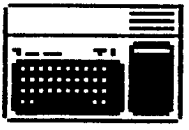

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QUICK START-File setup:

The next few pages provide a step-by-step method for getting DBMS up and running (using a sample data base) without having to read through the entire DBMS manual.

1 - Have a newly formatted disk ready to use for data storage.

2 - Insert the DBMS module into the 99/4A's cartridge port.

3 - Power up your system in the normal fashion.

4 - Insert the DBMS program disk into drive 1.

5 - Press the number 2 key to display the 4A's menu of options.

6 - Press option 3, DBM SETUP.

7 - Press <ENTER> when prompted for SETUP file name.

8 - Press <ENTER> when you see the cursor flashing in the middle of the top screen line, then hit the spacebar once.

9 - Type in the field name SUBJECT: and then press <ENTER> twice.

10 - Hit the spacebar once and then press Fctn 2 (INSERT) 30 times to create the data input block for the SUBJECT field. A solid red line should creep across the screen. Use Fctn 1 to delete spaces from the red line if you go too far.

11 - Press <ENTER> twice and then the spacebar once. Type in the word TYPE :. Note the three spaces between the end of the word and the colon.

12 - Use Fctn 2 again to insert a 22 character long data input block for the TYPE: field, starting on the same line, immediately after the colon.

13 - Press <ENTER> three times.

14 - Press the spacebar once. Type in the word SOURCE1:.

15 - Use Fctn 2 to create a 22 character long data input block for the SOURCE1: field.

16 - Press <ENTER> and hit the spacebar once then type in the word DATE :. Three spaces between the word and the colon again.

17 - Use Fctn 2 to insert a 5 character long data input block for the DATE : field.

QUICK START-File setup (cont'd):

18 - Move the cursor nine spaces to the right of the end of the red data input block for the DATE : field and then type in the word PAGE:.

19 - Use Fctn 2 to insert a 3 character long data input block.

20 - Press <ENTER> twice and repeat steps 14-19 so that you end up with a screen layout like the one illustrated below.

```
 ---------------------------------
¦ Subject:                        ¦
¦                                 ¦
¦ XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX ¦
¦                                 ¦
¦ Type    :XXXXXXXXXXXXXXXXXXXXX ¦
¦                                 ¦
¦                                 ¦
¦ Source1:XXXXXXXXXXXXXXXXXXXXXX ¦
¦ Date    :XXXXX          Page:XXX¦
¦                                 ¦
¦ Source2:XXXXXXXXXXXXXXXXXXXXXX ¦
¦ Date    :XXXXX          Page:XXX¦
¦                                 ¦
¦ Source3:XXXXXXXXXXXXXXXXXXXXXX ¦
¦ Date    :XXXXX          Page:XXX¦
¦                                 ¦
¦ Source4:XXXXXXXXXXXXXXXXXXXXXX ¦
¦ Date    :XXXXX          Page:XXX¦
 ---------------------------------
```

21 - Move the cursor to the left edge of the red colored data input block for the SUBJECT: field and then press Fctn 6 (PROC'D).

22 - Press <ENTER> once and then type in an UPPER case Y at the prompt asking "Is this a key field?".

23 - Press Fctn 6 to return to the layout screen, then press Fctn 9 (BACK).

24 - **INSERT THE NEWLY FORMATTED DATA DISK INTO DSK1.**

25 - Press Y at the "AUTO-SEQUENCE?" prompt.

26 - Type in DSK1.INDEX for the Data File name, then press <ENTER>.

27 - Type in DSK1.INDEXSETUP for the SETUP file name. Press <ENTER>.

28 - Press Fctn = (QUIT) and then Y at the prompt asking if you really want to quit.

QUICK START-Data entry:

1 - Insert the data disk in DSK1 and then select 2 DBM ENTRY from the DBMS menu.

2 - Type in DSK1.INDEXSETUP at the SETUP file name prompt.

3 - Press Y when a message appears telling you that the "File does not exist. Do you wish to create it?".

4 - Press Fctn 5 (BEGIN) when the custom layout screen appears. That screen will have a black border and the SUBJECT field's data input block highlighted in red.

5 - Type in the desired data in each field, pressing <ENTER> to move to the next field or Fctn E to move to a previous field if any editing is needed.

6 - Press Fctn 6 (PROC'D) to write the record to disk.

7 - Press Fctn 5 (BEGIN) to add another record or Fctn = (QUIT) to exit.

QUICK START-Data editing:

1 - Insert the data disk in DSK1 and then select 2 DBM ENTRY from the DBMS menu.

2 - Type in DSK1.INDEXSETUP at the SETUP file name prompt.

3 - After the "Cross Referencing" message is displayed the custom layout screen appears. Type in the SUBJECT field data that you wish to use to locate the record to be edited. Press <ENTER>.

4 - If a "NO SUCH KEY" error message appears it means that the data as it was just keyed in does not match any entry in the file. If the record appears on the screen, skip to step 6.

5 - You may try keying the data in again, making sure no errors in text are made, or you may access the offending record sequentially by pressing Fctn 8 (REDO) and then Fctn 9 (BACK) a sufficient number of times to make the record appear. The alternate Fctn 8 / Fctn 9 keypresses access data in sequential order.

6 - When the record appears on screen simply make any desired changes by typing the new data in over any existing data and then press Fctn 6 (PROC'd) to continue when you are done. The black bordered screen is redisplayed. When Fctn = (QUIT) is pressed the changes are saved to disk.

QUICK START-Report definition:

To define a report for our sample data base you will need to insert the DBMS disk into DSK1 and then select option 4, DBM REPORTS, from the menu.

The report generator program first prompts you for the SETUP file name. If you want to take existing fields from the record layout screen and cut and paste them to the report format, then enter the DSK1.INDEXSETUP file name. If you would like to create a custom report format from scratch then just press <ENTER> at the SETUP file prompt. I will tell you up front that it is much easier to use the existing SETUP file.

The cut and paste method loads the SETUP file (INDEXSETUP) and displays it on screen. To cut and paste you would simply press Fctn 7 (AID) to invoke the format editor and then move the cursor to the beginning of a field (the red bar area, not the field name) to be moved. Pressing Control or Fctn M will "grab" the field and then allow you to use the arrow keys to move it around the screen into the desired position. Once there, a keypress of any un-Controlled or un-Functioned key will drop the field at the position of the cursor. How's that for simplicity? Let's try it for our sample data base.

1 - Insert the DBMS program disk into DSK1 and then press any key to bring up the DBMS menu. Press 4 for DBM REPORTS.

2 - At the SETUP file prompt type in DSK1.INDEXSETUP and then press <ENTER>.

3 - Press Fctn 7 (AID) when the custom field layout screen appears.

4 - Use the arrow keys to move the cursor to row 1, column 8. Type in the word Subject: and then move the cursor to the first space in the red data input block for the Subject: field from the custom field layout.

5 - Press Fctn M. The cursor changes to a more or less oval shape. You have just "cut" the data input block.

6 - Use the arrow keys to move the data input block upwards to row 1, column 16. Press <ENTER>. You have just "pasted" the data input block into the new position. Note that the cursor has now changed back to its normal shape.

7 - Use the arrow keys to move down to the S in the word Subject: in the custom field layout screen area. Spacebar over the eight characters that make up that field name.

QUICK START-Report definition (cont'd):

8 - Move the cursor to row 1, column 47 and enter the word TYPE:.

9 - Move to the TYPE: field data input block in the custom field layout screen area and press Fctn M to grab it. Carry it upwards to row 1 and then move to the right until the cursor is positioned over column 52. Press <ENTER>.

10 - Now move to row 3, column 8 and type in the word SOURCE1: and then move to row 3, column 44 and type in SOURCE2:.

11 - Move to row 4, column 8 and type in DATE:. Then to row 4, column 30 and type in PAGE:. On the same row move to column 44, type in DATE: and then type in PAGE: beginning at column 66 on row 4.

12 - Move the cursor down to the custom field layout screen area and then cut and paste the SOURCE1 and DATE and PAGE data input blocks for SOURCE1: so that they are positioned immediately after the colon for the appropriate field.

13 - When you are done with the cut and paste move back down to the custom field layout screen area and use the spacebar to erase SOURCE1 and its DATE and PAGE field names and then SOURCE2 and its DATE and PAGE field names.

14 - SOURCE3 and SOURCE4 go on row 6. SOURCE1 is positioned at column 8, SOURCE4 at column 44. The DATE and PAGE fields for each are positioned underneath the appropriate SOURCE(s) in row 7.

15 - Press Fctn 9 (BACK) and then type in DSK1.INDEXRPT1. Press <ENTER>. The custom report format is saved to disk for use now or at any later date.

QUICK START-Sorting files:

1 - Insert the DBMS program disk into drive 1 and then press any key from the color bar screen.

2 - Press 5 to access DBM SORT. When the SORT program is loaded insert the data file disk into drive 1.

3 - At the first prompt (ENTER SOURCE FILE) type in DSK1.INDEX and then press <ENTER>.

4 - Type in DSK1.INDEXSORT to name the output file that is created by the sort routine.

5 - Type in 1 for the position of the SORT SELECTION FIELD and then Press <ENTER>.

6 - When the prompt "STRING" scrolls up press <ENTER> again.

7 - Press <ENTER> to ignore the E for EQUALS or N for NOT-EQUALS prompt.

8 - Enter 1 at the SORT KEY: 1 prompt.

9 - Press <ENTER> again and then type in 30 at the LENGTH prompt.

10 - Press <ENTER> and then type in A for an Ascending sort at the DIRECTION prompt.

11 - Press <ENTER> and then <ENTER> again when prompted for the SORT KEY: 2 input. The sort process will then begin.

12 - When the sort is completed press Fctn = to quit.

13 - Insert the program disk into DSK1. and then select 3 DBM SETUP.

14 - When the SETUP file name prompt appears, insert the data file disk and then Type in DSK1.INDEXSETUP.

15 - When the custom layout screen appears press Fctn 9 (BACK) and then press Y for auto-sequencing.

16 - Name the new SETUP file DSK1.INDEXS1.

17 - Type in DSK1.INDEXSORT at the data file prompt.

18 - Press Fctn = (QUIT) to quit and then Y to confirm.

To use the sorted file enter DSK1.INDEXS1 each time you are prompted for the SETUP file name.

INTRODUCTION:

Navarone Industries introduced the Data Base Management System (DBMS) in 1984. Since its introduction DBMS has gone through a major update from V1.0 to V2.0, which is the version that you should be operating with.

DBMS has always been plagued with documentation problems that have led many owners to turn away from the program because of the inadequate instructions. Although Navarone tried to provide a workable set of instructions, once by issuing a re-written manual and another time by including user-written instructions as an addendum to their own manual, documentation has never been written that clearly explains the power of the program for all users. That is unfortunate, because in some ways, DBMS is still an advanced data base management program and it contains some features that no other 99/4A application in its class can claim. Through the tutorial type approach used in the manual you are reading, I hope to provide the missing link to understanding DBMS for those who have had problems with this program in the past.

The DBMS is, as the Navarone advertisement states;

> "A customized transaction, filing and reporting system for the small business."

The system consists of a series of programs on disk that run under a proprietary Navarone module that must be inserted in the 4A's cartridge port for the system to work. A TI-99/4A console, 32K memory and a disk drive are also required.

No matter what type of hardware configuration you have, DBMS must have access to DSK1 to load all program modules from the system disk. You may take advantage of the DSK1 emulator available with the Myarc Hard and Floppy Disk Controller and you may also use your Horizon Ram Disk for program access if you set it to be recognized as DSK1.

SPECIFICATIONS:

Maximum records per file	HARD DISK -32,000 SS/SD floppy-358 DS/SD floppy-718 DS/DD floppy-1438
Maximum fields per record	25
Maximum record size	255 bytes
Sort keys	6
Math functions	numeric field totaling in Report module.
Subfile selection	YES, by = and <> operators.
Single disk sort file size	HARD DISK -32,000 SS/SD floppy-163 DS/SD floppy-343 DS/DD floppy-705

FILE TYPES:

The Navarone system creates three different types of files in support of any data base that you design;

	FILE TYPE	FILE FORMAT
o	Setup file	PROGRAM IMAGE
o	Data/sort file	DISPLAY/FIXED
o	Report file	DISPLAY/VARIABLE

- **Setup files** save the information that you define when you create the screen layout for your data file's record format. It includes the layout, the key field information, the name of the data file the input (SETUP) screen will accept data for and any help window data that is included for each field. It is saved on disk in PROGRAM image format for fast loading into memory when called.

- All original **data files** and all **sorted files** are saved in FIXED format to allow relative acccess to data. The length of the file is decided by you when the setup screen is designed. The file's length will be the cumulative total of all data input blocks contained in the record structure. Data input blocks are the red bars that appear on your screen when you press Fctn 2 to design an input block length. More detail on data input blocks is included in the FILE SETUP section.

- **Report** files, or more correctly, report definition files, are saved in VARIABLE format for optimum use of disk space. These files contain the information that tell DBMS all about how you want a report laid out and what type of printer codes you have included for special printing requirements. You may design any number of reports for the same data file as long as you save each report file under a different name.

When DBMS sorts a data file it leaves the original file intact, sorts by the key field(s) you specify for the sort and then it creates a second file with the identical record structure as the original one. There are advantages and some disadvantages to this type of sort method. The most noteable disadvantage comes when you have only one SS/SD disk drive.

- **Sorted files** cannot be used immediately after they have been created by the DBM SORT program. You must first enter the DBM SETUP program, load the SETUP file that contains the original screen layout and other information about the source file that the sorted file came from. Press Fctn 9 (BACK) and then press Y for auto-sequencing. Then type in another SETUP file name and then the sorted file name to save the information currently in memory for the SORTED file. You will end up with a new SETUP file for the SORTED file that will allow the new data to be used in any of the DBMS programs.

FILE SETUP:

Insert the DBMS module into the cartridge port and then turn your system on the way that you normally would. Insert the DBMS program disk into DSK1 and press any key. A menu of options appears that lists TI Basic and then four DBMS options;

1 FOR TI BASIC

2 FOR DBM ENTRY

3 FOR DBM SETUP

4 FOR DBM REPORTS

5 FOR DBM SORTS

Select 3 for DBM SETUP. The disk drive will light up and a copyright screen will appear. Press <ENTER>. You will be prompted for the name of the SETUP file. Ignore this and press <ENTER> again. You would only type in a DSK#.FILENAME at this point if you had an existing SETUP file designed that you wished to load and then alter in some way.

After you press <ENTER> at the SETUP file prompt the cursor appears in the middle of the top line on a blank, light blue screen with a cyan border. To begin defining a data file press <ENTER> once again and the cursor will drop down to the left edge of the next screen line.

The SETUP program that you are now in is a full-screen text type editor of 32 columns by 22 rows. You may move the cursor around on the screen (with the Fctn D,E,S and X keys and the space bar) to position the field names and data input blocks for each field anywhere you wish. Only one input screen is supported but it may contain up to 25 fields that have a maximum combined length (size) of 255 bytes. Field names are typed in as you would type text on the screen in a word processor. Data input blocks for each field name are inserted by moving the cursor to the point where the input block is to begin. Then, you must press Fctn 2 to insert an input field character space. So if you want to have an input block that is ten characters long, press Fctn 2 ten times or hold the Fctn 2 keys down until the auto-repeat feature displays a red-line on the screen that is ten characters long.

RESTRUCTURING A FILE:

DBMS allows you to add a new field on to the end of an existing record structure without damaging existing data. It is done in the SETUP program by loading the appropriate SETUP file and making the desired modifications, then saving them back to disk. Inserting a field anywhere else in the record will destroy all existing file data.

FILE SETUP (cont'd):

The sample data base that we will design named INDEX, which is a publications reference, has the following fields;

Fieldname	Length
SUBJECT	30
TYPE	22
SOURCE1	22
DATE	05
PAGE	03
SOURCE2	22
DATE	05
PAGE	03
SOURCE3	22
DATE	05
PAGE	03
SOURCE4	22
DATE	05
PAGE	03

See the **QUICK START-File setup** section for instructions on how to design the screen layout for this file.

KEY FIELDS:

Every record structure designed in a DBMS file must have at least one key field so that data can be accessed through the index file that the Navarone system creates for a data base. You may have as many as six key fields for a file, but the data in any key field must be unique, meaning that it can only occur once in the file. The sample data base being created in this tutorial, which uses SUBJECT as the key field, will have only one entry for each SUBJECT in the data base.

To design a key field move the cursor to the first position in the data input block (the red bar area) for the field to be designated as a key field. In this example, move the cursor to the first red space for the SUBJECT field. Press Fctn 6 (PROC'D). The screen will clear and display the field information screen. Within the outlined box on the upper half of the screen you will note that the position number displayed is 001 and the field length is listed as 30. Press <ENTER> until the cursor moves to the "Is this a key field? Y/N" prompt. Type in an upper case Y and then press <ENTER>. Press <ENTER> past the "Is this a numeric field?" prompt and the cursor moves to a dialog box at the base of the screen. This is where you may type in any HELP messages you want included for a particular field. These are very handy little windows that appear in the DBM ENTRY program when Fctn 7 (AID) is pressed. They are optional though, so you do not have to type anything in.

FILE SETUP (cont'd):

Press Fctn 6 (PROC'D) when you are done. The record layout screen is redisplayed. Insert the blank data disk into DSK1 that was formatted earlier. Next press Fctn 9 (BACK) and you will be asked if you wish to use the auto-sequence feature. Press Y. This will cause the program to look at your record's structure and automatically determine the length of each field so that DBMS will know where one field ends and the next one begins. You could have done the same thing yourself in the field information screen where key fields and help windows are designed, but there really is no need to when the program will do it for you. The auto-sequencing is much quicker and less prone to error than doing it manually.

After pressing Y type in DSK1.INDEX as the data file name and then press <ENTER>. Lastly, type in DSK1.INDEXSETUP as the SETUP file name for the INDEX data base. Once that is done, and the <ENTER> key is pressed, the disk drive lights up and your new data base structure is saved to disk. When the disk write is complete the record layout screen appears. Press Fctn = (QUIT) and then Y to confirm that you do want to exit the SETUP program.

UNIQUE KEY FIELDS:

You may wonder why the sample data base record structure contains four SOURCE: fields when one would normally seem to do the job. Normally, you would be correct. The problem arises out of the DBMS requirement that each record have a "unique" key field. This means that only one record with the same entry in the key field contents can exist in the same file. This works out okay if you are doing inventories or customer lists where you can assign a unique number or some other designator to each record. However, in the publications reference type file, there are bound to be multiple references to the same topic. For instance, the COMPANION word processor has been reviewed seven times in various 99/4A publications. With a DBMS file structure containing only one SOURCE: field, you would only be able to reference COMPANION once in the file. The only alternative would be to list each entry in the SUBJECT: field as COMPANION1, COMPANION2 etcetera, which is neither accurate nor practical, since you would never know how many entries existed in the file. With the file structured the way it is, you can reference any topic up to four times and have all of the references appear on a single screen.

HELP WINDOWS:

Help windows are designed at the same time key fields are chosen, by simply typing in the desired information in the dialog box at the base of the key field design screen, in the DBM SETUP program. Access to help windows is available only in the DBM ENTRY program, by pressing Fctn 7 (AID). One help window is available for each field in a record.

DATA ENTRY:

With your data disk in DSK1 and the color bar screen showing on the monitor, press any key and then press 2 for DBM ENTRY. The Navarone copyright screen appears. Press <ENTER>. At the SETUP file prompt type in DSK1.INDEXSETUP and then press <ENTER> again. The disk drive will light up and then a message will be displayed on the screen that tells you the;

FILE DOES NOT EXIST

What doesn't exist (yet) is the data file name that you gave your data base (INDEX) during the SETUP processs. It is not the SETUP file that does not exist. When asked if you wish to create the file, press Y and the INDEX data base file will be opened. Once that occurs a;

CROSS REFERENCING

message is displayed momentarily, while the program indexes the existing data base. The data access/edit/entry screen appears. This screen is a black bordered screen with a light blue background, white text, a red key field input block and off-blue non-key field data input blocks.

To enter data press Fctn 5 (BEGIN). The black border disappears and a NEW RECORD message is displayed at the top of the screen. Your file's record layout is also displayed and the cursor appears in space number one of the input block for the SUBJECT field. Type in an entry for this field and then press <ENTER>. The cursor will then move to the TYPE field. Continue to enter data for each field as applicable until the record contains the desired information. When all data entry for the record is complete press Fctn 6 (PROC'D) to write the record to disk. The black bordered screen will appear again. Enter another four or five records in the sample data base now, and then come back to the next paragraph when you are done. I suggest that the records entered are done so out of alphabetical order (by SUBJECT) so that you can see the effect of a SORT that will be conducted later. Sample data may be keyed in from any book, magazine or other publication for practice purposes.

DATA ACCESS:

Once you have data entered into the file it may be accessed by the key field. This is done by typing search data into the SUBJECT field input block (the red bar on the black bordered screen) and then pressing <ENTER> or Fctn 6 (PROC'D). The data that you key in must be an exact match to one of the entries in the index file in memory or a "NO SUCH KEY" error message is displayed. If you don't know the exact wording of a record you may press Fctn 8 (REDO) to access records sequentially. Once the first record appears on screen and you wish to view the next one, press Fctn 9 (BACK) and then Fctn 8 (REDO) again. The next record in the file will appear.

DATA EDITING:

Any record accessed via the index file or the sequential access method may be edited by simply typing over the existing data with whatever new data you want to have in the offending record. When you exit the file the changes are automatically saved to disk when the file is closed.

DELETING RECORDS:

Any record accessed via the index file or the sequential access method may be deleted by simply pressing Fctn 4 (CLEAR) while the record is displayed on the screen.

SORTING DATA:

Insert the DBMS program disk into drive 1 and then press any key from the color bar screen. Press 5 to access DBM SORT. When the SORT program is loaded insert the data file disk into drive 1. At the first prompt (ENTER SOURCE FILE) type in DSK1.INDEX and then press <ENTER>. Then type in DSK1.INDEXSORT to name the output file that is created by the sort routine. Remember that an entirely new file is created by the sort, so if you wish to sort a data base that is 100 records in size, you must have 100 sectors free on the data disk to accept the new file. If you have multiple drives or a hard disk then you would simply path the output file to the desired disk but would still have to have the same number of free sectors available on the output disk.

Next, just type in 1 for the position of the SORT SELECTION FIELD. Press <ENTER>. When the prompt "STRING" scrolls up press <ENTER> again. Next, you are prompted to press E for EQUALS for N for NOT-EQUALS. Press <ENTER> to ignore the prompt. Enter 1 at the SORT KEY: 1 prompt. The first 1 that you entered told DBMS to sort the file by SUBJECT, which is the first (number 1) field in the file. The second number 1 tells it the position of the SUBJECT field in the 255 character string that makes up each record. Press <ENTER> again and then type in 30 at the LENGTH prompt. Press <ENTER> and then type in A for an Ascending sort at the DIRECTION prompt. Press <ENTER> and then <ENTER> again when prompted for the SORT KEY: 2 input. The sort process will then begin. When the sort is completed press Fctn = to quit.

Sorted files must be run through the SETUP program before they can be read by any of the other modules since they do not have a SETUP file of their own. To create the SETUP file, load the SETUP program from the DBMS system disk and then load the SETUP file for the original data base that the sorted file came from (INDEXSETUP in our sample data base). The program will then read the INDEXSETUP file and display the layout screen. Press Fctn 9 (BACK) then press Y for auto-sequencing. Name the NEW setup file INDEXS1. Name the data file DSK1.INDEXSORT. Press <ENTER> and the process is complete. Now, when you wish to use the sorted file for ENTRY or REPORTS etcetera, you simply type in DSK1.INDEXS1 to load the sorted file.

SUBFILES:

DBMS uses the DBM SORT program to create subfiles. A subfile is a smaller file drawn from an existing data base that is made up of records that share some common element of data. That common element is how the subfiles are created, by locating the element in each record if it exists, or by locating all records in which the element does not exist.

DBMS supports two relational operators for selection of subfiles; EQUAL TO and NOT EQUAL TO. That means that you can isolate records that contain a common element or that do not contain a common element.

In the SORT program, if you had intended to create a subfile rather than sorting the file, the only thing different that would have been required was an entry in the STRING prompt and the entry of an E or an N in the parameters prompt.

To create a subfile, you must enter a search parameter in the STRING variable that will be found in the field that is being sorted on if you are going to look for other records that are EQUAL TO the search parameter, or that will not be found if you are going to look for other records that are NOT EQUAL TO the search parameter. For example, assume that you wish to create a subfile of all records that contain the phrase REVIEW-HARDWARE in the TYPE field. TYPE is the second field in the file so you would enter 2 as the sort selection field and then 31 and 22 as the beginning field position and LENGTH of the sort field. You would enter the phrase REVIEW-HARDWARE in the STRING prompt and then an E at the E/N prompt to tell the sort program that it is to look for/sort only those records that are EQUAL to REVIEW-HARDWARE in the TYPE field.

During the sort, DBMS would examine all records in the file but would read-in, sort and then write-out only those records that met the criteria specified. The resulting file, which was DSK1.INDEXSORT in our example, would then need to be RUN through the SETUP program to generate a SETUP file as per the instructions in the SORTING DATA paragraphs above.

PRINTING REPORTS:

To print a report enter the report generator by pressing 4 from the DBMS menu. When prompted for the SETUP file name, which is the name of the report definition, enter DSK1.INDEXRPT1 and then press <ENTER>. Next, press Fctn 5 (BEGIN) and then type in DSK1.INDEX at the DATA FILE prompt. The default printer configuration of PIO. appears. Alter it to fit your printer if needed, press <ENTER> to accept it if it fits your system, or erase it and press <ENTER> if you wish to print the file to screen rather than to a printer. In this case we will actually generate a printed report, so after taking care of the printer name, press <ENTER> and answer the remaining prompts.

At the **Last line of page header** prompt enter 01. At the **Last line of record form** enter 02.

Press <ENTER> through the remaining prompts for suppression of detail and pauses between pages (unless you are not using continuous feed paper) and the report printing process will begin.

The LAST LINE... prompts are somewhat confusing to the new user. What they allow is control over header inclusion in the report and spacing between lines printed on the report. Thus, if you entered a zero at the ...PAGE HEADER prompt the field names would not appear in the report. If you entered 03 at the ...RECORD FORM prompt each record would have one blank space printed between it and the last record.

PRINTER CONTROL:

DBMS provides limited control over your printer, based upon the capabilities of your printer, and your own ability to understand the workings of it. For example, by moving the cursor to row 1, column 7 in our sample INDEXRPT1 report, you you could type in Fctn or Ctrl period and then O (ooh, not zero) to get a compressed print report if you are using an Epson or Epson compatible printer. By moving the cursor to the end of the same line, one space past the last space for data in the TYPE field, you could press Fctn or Ctrl period and then R to get a report that printed all of the data in row 1 for each record in compressed print and the rest of each record in normal mode.

The key to using printer control codes in your reports is understanding the demands of your printer. You will need to read the printer manual closely and locate the chart or other section in the book that lists the commands required to obtain the desired font or mode. Frankly, DBMS does not provide much useful information in this area. The best that you can do is experiment. I can't provide you with much either, since the instructions required for printer control are very printer specific.

HORIZON RAM DISK:

The Horizon Ram Disk may be used both as a program disk and/or as a data file storage disk. If it is to be used as a program disk, you must configure it as DSK1. DBMS treats it exactly as it does a mechanical floppy.

HARD DISK USAGE:

DBMS supports the Myarc HFDC for both program access and data file storage. The programs found on the DBMS system disk must be copied to the DSK1 emulation subdirectory for system programs access. Data file storage capabilities may be created in any subdirectory on your hard disk, as long as the WDS1., subdirectory name and then the file name, when combined into one string of characters, do not exceed 15 spaces. For example;

WSD1.DBMS.FILES

is acceptable because it is 15 or fewer characters in length. However,;

WDS1.DBMS.FILENAME

would not work because it exceeds the 15 character combined path and filename limitation.

FUNCTION KEYS:

FCTN 1: Erases a data input block in DBM SETUP.

FCTN 2: Inserts a data input block space in DBM SETUP.

FCTN 4: Halts report printing in DBM REPORTS. Deletes the current record in DBM ENTRY.

FCTN 5: Begins entry of a new record in DBM ENTRY. Begins the printing process in DBM REPORTS.

FCTN 6: Accesses key field screen in DBM SETUP. Accesses the field length definition screen in DBM REPORTS.

FCTN 7: Displays help window at the base of the screen in DBM ENTRY. Accesses report editor in DBM REPORTS.

FCTN 8: Accesses the first sequential record in DBM ENTRY.

FCTN 9: Backs up to last screen in most DBMS modules.

FCTN =: Quits the current program.

EXTENDED BASIC DATA ACCESS:

Because DBMS data files are created in standard 99/4A Display/Fixed format, they may easily be accessed in an Extended Basic environment. This means that data can be manipulated outside of the DBMS environment so that features not provided by DBMS can be created for further manipulation of data. For example, the Extended Basic program listed below may be used to display the contents of the sample data base we have created.

```
1 !DBMS file access routine
100 CALL CLEAR :: R=2
110 OPEN #1:"DSK1.INDEX",INP
UT ,DISPLAY ,FIXED 172
120 LINPUT #1:B$ :: DISPLAY
AT(R,1):B$ :: R=R+4 :: IF R
>18 THEN R=2
130 IF EOF(1)THEN 160 ELSE 1
40
140 CALL HCHAR(23,2,80,1)::
DISPLAY AT(23,1):"ress any k
ey to resume scrol" :: CALL
HCHAR(23,31,108,1)
150 CALL KEY(0,K,S):: IF S=0
THEN 150 ELSE 120
160 CLOSE #1
```

Other programs may be created that can be used to merge two or more data files into a single file, create subfiles from a main file, convert data to TI-WRITER format and more.

```
1 !DBMS file merge utility
100 CALL CLEAR
110 DISPLAY AT(5,1):"First f
ile:": :"Merge file:": :"Sav
e file as:": :"Correct? (Y/N
):"
120 ACCEPT AT(5,12)BEEP SIZE
(15):IN1$
130 ACCEPT AT(7,12)BEEP SIZE
(15):IN2$
140 ACCEPT AT(9,14)BEEP SIZE
(15):ON$
150 ACCEPT AT(11,16)BEEP:YN$
:: IF YN$<>"Y" THEN 110
160 IF IN1$=ON$ THEN 250
170 IF IN2$=ON$ THEN 250
180 OPEN #1:ON$,UPDATE,DISPL
AY ,FIXED 172 :: OPEN #2:IN1
$,INPUT ,DISPLAY ,FIXED 172
:: DISPLAY AT(22,1):" ":"Rea
ding from:";IN1$
190 LINPUT #2:A$ :: PRINT #1
:A$ :: Y=Y+1 :: DISPLAY AT(2
2,1):"Records merged:";Y
200 IF EOF(2)THEN CLOSE #2 E
LSE 190
```

EXTENDED BASIC DATA ACCESS (cont'd):

```
210 OPEN #3:IN2$,INPUT ,DISP
LAY ,FIXED 172 :: DISPLAY AT
(22,1)BEEP:" ":"Merging from
:";IN2$
220 LINPUT #3:A$ :: PRINT #1
:A$ :: Y=Y+1 :: DISPLAY AT(2
2,1):"Records merged:";Y
230 IF EOF(3)THEN CLOSE #3 E
LSE 220
240 CLOSE #1 :: END
250 DISPLAY AT(22,1):"Output
file can't have same name an
d drive as input file" :: GO
TO 110
```

To use the MERGE utility you would need to alter the 172 file length in lines 180 and 210 to the length of the files being merged.

To read the newly created file in DBMS you would need to load the DBM SETUP program, type in DSK1.INDEXSETUP and then press <ENTER>. Insert the data file disk with the INDEXSETUP file on it and load DSK1.INDEXSETUP when prompted for the SETUP file name.

Press Fctn 9 (BACK) and type in DSK1.INDEXMERGE as the new SETUP file name. You are then prompted to enter the Data File name. Type in the disk drive number and file name given to the merged file. Press <ENTER> and the merged file will then have its own SETUP file that allows it to be accessed in any of the DBM modules.

```
1 ! Record count utility
100 CALL CLEAR :: CALL KEY
(3,K,S):: ON WARNING NEXT
110 OPEN #2:"DSK1.INDEX",
INPUT ,RELATIVE,DISPLAY ,
FIXED 172
120 LINPUT #2:B$ :: B=B+1
:: DISPLAY AT(24,23):B
130 IF EOF(2)THEN 140 ELS
E 120
140 OPEN #1:"DSK1.INDEX*"
,OUTPUT,DISPLAY ,VARIABLE
80
150 PRINT "Size:";B;"Reco
rds" :: PRINT #1:B :: CLO
SE #1 :: CLOSE #2 :: STOP
```

EXTENDED BASIC DATA ACCESS (cont'd):

```
1 ! Find
100 CALL CLEAR :: ON WARN
ING NEXT
110 DISPLAY AT(15,1):"Ent
er first string to find:"
:: ACCEPT AT(17,1)BEEP SI
ZE(-28):S$
120 DISPLAY AT(15,1):"Ent
er second string to find:
" :: ACCEPT AT(18,1)BEEP
SIZE(-28):S1$
130 OPEN #1:"DSK1.INDEX",
RELATIVE,INPUT ,DISPLAY ,
FIXED 172
140 LINPUT #1:B$ :: B=B+1
:: DISPLAY AT(24,20):B
150 S=POS(B$,S$,1):: IF S
=0 THEN 190 ELSE 160
160 S1=POS(B$,S1$,1):: IF
S1= 0 THEN 190 ELSE 170
170 CALL CLEAR :: PRINT B
$
180 CALL KEY(0,K,S):: IF
K=32 THEN 180
190 IF EOF( 1)THEN 200 EL
SE 140
200 CLOSE #1 :: STOP
```

The Count program reads the records in a DBMS file and displays a record count after an end of file marker is reached. It then saves the number of records in a file named INDEX* that can is readable in the report generator program or TI-Writer.

The Find utility will locate any record in the file by up to two search parameters, regardless of what field the data may be located in.

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