Data Base 99 (tm) INSTRUCTIONS

Purpose:

To create and maintain your own data base.

Equipment required:

1. Extended BASIC,
2. Disk,
3. 32K RAM.

General information:

A data base created with Data Base 99 can consist of up to 700 records on a single density, double sided disk, or a double density, single sided disk. It can contain up to 350 records on a single density, single sided disk. Each record can contain up to 28 fields of up to 28 characters per field to a maximum of 245 characters per record. The user can construct his own input form consisting of 18 screen lines and may contain alphanumeric characters, punctuation marks, and characters that represent field characters.

Once a data base has been created; records can be added, deleted, and changed. Other functions are: sort by any field, print in any format, select subfiles, restore deleted records. A disk catalog routine is included for convenient access to the contents of any disk drive.

The program optimizes memory space. Large files are possible with Data Base 99 because it uses relative file disk processing, thus permitting the computer memory to be used for data and program functions. Data Base 99 permits the user to get the maximum number of records per disk.

How to load Data Base 99:

Plug in the Extended BASIC module.
Turn on all power switches, console switch last.
Insert Data Base 99 disk in drive 1.
From Master Title screen: Press any key.
From Master Menu: Select   2 Extended BASIC.
Data Base 99 will load itself automatically.

When the Data Base 99 Main Menu appears, remove the program disk (it is not needed any more) and insert an initialized disk to save the data on.

When execution begins, the Main Menu appears on the screen containing eight choices: Create, Update, Sort, Print, Select subfile, Repair file, Catalog disk, and Exit. Press the key of your choice. The following sections describe the operation of each option of the Main Menu.

CREATE

When asked, enter the filename of the data base that you are going to create (i.e. DSK1.DATA1). If that name already exists on the disk, it will be replaced by the new file.

The input screen is created next. It consists of 18 lines of 28 characters each. One line at a time is created and each line is terminated by pressing Enter. Each line may contain any alphanumeric character or the field indicator character (underline). In the positions that data is to be entered, put the field indicator by pressing 'CTRL ,' (comma). This will place an underline on the screen for each space that the field will occupy. For example: for a field that will hold a telephone number, press 'CTRL ,' eight times. To get a better idea of the concept, examine the file DSK1.DEMO, which is on the Program disk, using the Update option from the Main Menu. (Note that to examine the data file DSK1.DEMO, there must NOT be a tape over the write protect notch. Also, do NOT try to add records to the file DSK1.DEMO.)

Fields must be separated by at least one character (cannot be the underline). A field must begin and end on the same screen line, i.e. a field may not be continued in the next line. Thus no field may be longer than one screen line (28 characters). There may be more than one field per line, if they are separated by at least one other character. Fields are entered from left to right and from top to bottom.

When all 18 screen lines have been entered, a prompt will appear at the bottom of the screen: PROCEED, REDO, BACK. If an error occurred and a change needs to be made in the input screen, press REDO. If the screen is correct, press PROCEED. Press BACK to abort the Create option, and to return to the Main Menu.

After PROCEED is pressed, the program calculates the number of fields and the total number of characters. If the number of fields is greater that 28 or the total number of characters is greater than 245, then the input screen must be altered. The cursor will automatically be put on the first screen line.

If the input screen is valid, then the prompt PROCEED, REDO, and BACK appears at the bottom of the screen again. REDO permits changes to be made to the input screen. BACK aborts the Create function and returns to the Main Menu. PROCEED causes the input screen definition to be written on the disk.

Then the program will return to the Main Menu. The file has now been created and can have data records added to it by using the Update option of the Main Menu.

UPDATING RECORDS

Enter the device and filename of the desired file (i.e. DSK1.DATA1). (If such a file does not exist, the program will return to the Main Menu.) The pre-defined input screen will appear, and the bottom

of the screen will show the prompt: PRESS A,C,D,S,R. A=add, C=change, D=delete, S=scan, and R=return.

Adding records

Press "A", the cursor will appear in the first position of the first field on the screen. Data may be entered into that field. Each field is terminated by pressing Enter, and then the cursor will move to the next field. To leave a field blank, just press Enter. After the last field has been entered, PROCEED, REDO, BACK will appear at the bottom of the screen. REDO permits the correction of any error by starting at the beginning. (To leave data the same, just press Enter). BACK will abort the Add operation and return to the Update Menu. PROCEED will write the data to the disk. Each new record is added at the beginning of the list.

Changing records

To change a record already in the file, press "C", the cursor will appear in the first position of the first field. To specify which record is to be changed, enter the matching data in the appropriate field and leave the remaining fields blank. For example, if there is a field that contains a job number, the specific number is entered in the appropriate field. When the last field is finished, the prompt PRESS PROCEED, REDO, BACK will appear. The REDO key will permit correction of errors. BACK will cancel the operation and return to the UPDATE Menu.

When PROCEED is pressed, the program will begin the search for the first record that matches and display it on the screen. The prompt CHANGE THIS RECORD? Y/N will appear. If this is the record to be changed, then press Y. The cursor will appear in the first position of the first field. At this time any changes can be made in any field by traversing the fields.

This is done by pressing enter until you reach the desired field. When all fields have been traversed, the new information will be written to the disk. After the information has been changed and written to the disk, the original search characteristics will reappear. When the computer displays the original search characteristics, or N was pressed in response to the CHANGE THIS RECORD prompt, the PRESS PROCEED, REDO, BACK prompt will be displayed. REDO will restart the change operation. BACK will return to the UPDATE Menu. PROCEED will locate the next record that matches the characteristics.

The above process can be repeated until the appropriate record to be changed is located. If there are no records that match the desired characteristic, or all records of that characteristic have been seen, then NO RECORDS will be displayed. PRESS PROCEED, REDO, BACK will be displayed again. BACK will return to the UPDATE Menu. REDO will permit re-entry of the search field and the change operation can be redone. PROCEED will return to the UPDATE Menu.

Thus, the Change procedure can also be used as a Search routine.

Deleting records

To delete an existing record from a file, press D from the UPDATE Menu. The procedure for locating the record to delete is the same as for Changing a record. Once the record is located , DELETE THIS RECORD? Y/N will appear. To delete the record, press Y. After the record is deleted or N is pressed, the search routine will proceed as described in the Change section.

When a record is deleted, it is not erased from the disk. It is un-linked from the existing list structure. Deleted records can be retrieved by the REPAIR FILE option of the Main Menu.

Returning to the Main Menu

To return to the Main Menu, press R. DO NOT exit the Update mode by pressing CLEAR or QUIT! If this is done, some vital file information will be lost.

SORTING FILES

Any file created with Data Base 99 can be sorted on any field or any consecutive fields. The sort routine will sort a maximum of 12 consecutive characters. For example, it can sort on the first 12 characters of a long field, or on a number of short consecutive fields whose total length adds up to twelve or less.

When the sort option is chosen, a prompt for the filename appears . When the filename is entered (i.e. DSK1.DATA1), the program opens the file and then displays the input screen for that file. The cursor will appear in the first position of the first field. To select the field or fields that the file is to be sorted on, place an "*" in consecutive spaces in the desired field. This will usually start at the beginning of a field. If nothing is to be put in a field, then press enter to proceed to the next field. After the cursor has passed through all the fields, PRESS PROCEED, REDO, BACK will appear. REDO will cancel the sort operation and return to the Main Menu. BACK will place the cursor in the first field, permitting corrections in the placement of the * symbol. PROCEED will begin the sorting operation.

During the sort operation the computer will load the segment of each record that corresponds to the placement of the * symbol. After loading the segment from each record, the list is sorted internally. Then each record, starting from the top of the list, is read and then rewritten to the disk with a new link that points to the next record in the list. The actual sort is very fast, however, for each record, the computer makes three disk accesses. This does slow down the sort operation, but using the relative file processing permits much larger files to be kept.

When the sort routine is completed, the Main Menu appears.

PRINTING FILES

When the PRINT option is selected from the Main Menu, a filename prompt is issued. When the filename is entered, the routine opens the file and displays the input screen. FORMAT: appears at the bottom of the screen. At this time a string that represents the print format must be entered.

Several characters are used to format the printed output in any way you choose. These characters are similar to those used to format a PRINT statement in BASIC. They are as follows:

A NUMBER - will output the field corresponding to that number, range 1 - 28.

: - The colon character will advance the paper to the next line and carriage return.

; - The semi-colon will place a blank space between what preceeds it and what follows it.

" " - The space character will place a blank space between what preceeds it and what follows it. (Same as a semi-colon.)

ALL OTHER CHARACTERS - will appear on the printout exactly as they do in the format statement.

A valid format statement would be: 2 1:3, 4 5:. This would be good for a mailing list where field 1 is Last name, field 2 is First name, field 3 is City, field 4 is State, and field 5 is Zip. This format would print them like this:

JOHN DOE
ANYWHERE, NY 21012

The next prompt will ask if the fields are to be truncated. If Y is entered, the fields will be truncated to their last non-blank character. If they are not truncated, the field width will be the maximum allowable for that field. The latter is used to create a printout that has straight vertical columns. Thus all fields will lie on the same line, left justified in each of their respective columns.

Next, the prompt DEVICE: appears. A valid device name must be entered. For example, PIO or RS232.BA=4800 or DSK1.TEXT2. Once the device name is entered, printing begins.

To abort the printout, press FCTN S. This will stop printing without destroying the file. When printing is done, the Main Menu will appear.

SUBFILE SELECTION

A file that has been created can be divided into smaller files based on informaton in a field or consecutive fields. For example, if there is a file that contains a field of Age, subfiles can be created for all those records under 18, over 18, or equal to 18. This can be done with alphabetic fields as well as numeric fields. For example, everyone with last name less than M, or those whose names begin with M, or those names greater than M. This can also be done with fields that are consecutive.

CAUTION must be taken if you have only one disk drive. You must be sure that your disk has enough space on it to hold the subfile that will be created. The number of sectors used will be the number of records in the subfile, plus six. It is not possible to use the disk swapping technique of the Disk Manager module.

When the Subfile selection is chosen from the Main Menu, the prompt FILE: appears. When a valid filename is entered (i.e. DSK1.DATA3), the new file is opened and the input screen is displayed. The cursor appears in the first field. The key data by which the subfile is to be selected must be entered in the correct field. For example, if Age is the key field, and you want to select all records older that 18 years, enter 18 in the Age field. Then the prompt PRESS PROCEED, REDO, BACK will appear. BACK will cancel and return to the Main Menu. REDO will permit correction of errors in the input screen. PROCEED will display the prompt, PRESS Greater, Equal, or Less. G will select all records greater than the key field. E will select all records equal to the key field. L will select all records less than the key field.

The prompt PRESS PROCEED, REDO, BACK will appear again. BACK will cancel and return to the Main Menu. REDO will restart the operation from the beginning. PROCEED will display the prompt, SUBFILE:. Enter a filename (i.e. DSK1.DATA4). The selection process will begin.

NOTE: If a single disk drive is used, there must be enough room on the disk for both files, otherwise a file error will be issued.

REPAIR FILES

When records are deleted from a file, they are not erased. The link that connects them to the rest of the list is altered. These records can be re-instated to the file by the Repair File option. The process is identical to that of sorting a file, except that the records that have previously been deleted are included and are linked into the new sorted list of records. Follow the procedures for Sorting files.

CATALOG A DISK

A disk catalog routine is included in the Main Menu to make the contents of each disk available without using the Disk Manager module.

When the Catalog Disk option is chosen, the prompt DISK # appears. Enter 1, 2, or 3 to specify which drive is to be cataloged. The catalog will list all filenames, sizes, and types. When the catalog is complete, the prompt PRESS PROCEED, REDO, BACK will appear. REDO will restart the catalog routine. BACK and PROCEED will return to the Main Menu.

FILE LAYOUT

This section describes the way that the information is written to the disk, so that you may write your own Extended BASIC program to access and process the data file.

Data files are opened with: RELATIVE, INTERNAL, INPUT, FIXED 255.

The first six records (record numbers 0 to 5) of every file contain the following information:

REC #0: Contains the first 8 input screen lines in 8 strings.

REC #1: Contains the next 8 input screen lines in 8 strings.

REC #2: Contains the last 2 input screen lines followed by 5 numeric variables. Maximum number of records per file, Number of total bytes per record, Total number of fields, Total number of physical records, First record of linked list.

REC #3: Contains the row position of each field with respect to the input screen.

REC #4: Contains the column position of each field with respect to the input screen.

REC #5: Contains the length of each field.

The actual data of a record is a concatenation of all the fields into one long string. The string is stored on the disk followed by a numeric variable that points to the next record in the list. Thus, to use data from a file, use the following type of input line:

INPUT #1,REC 6:A$,LINK

A$ will contain the data that makes up one record, and LINK will contain the record number of the next record in the sequence. The last record has a LINK value of zero.

REPLACEMENT POLICY: If the program fails to perform as specified herein, return the original disk, along with $15, and we will ship you a replacement disk immediately. (Note: Disks obtained from QUALITY 99 SOFTWARE cannot be cataloged, duplicated, or written on. Any modification to the disk or program, voids the Replacement Policy.)

If you have any suggestions for improvement or would like to see a certain program on the market, please feel free to call or write. Thank you for buying from QUALITY 99 SOFTWARE.

Program and Instructions
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NOTES:

1. When asked for the FILE:, be sure to specify the disk drive number, i.e. DSK1.DATA1, not just DATA1.

2. Do not try to Create a file on the Program disk. You must use a different disk.

3. You can also Change records in the following manner. Select Update, select Scan, press Proceed until you come to a record that you want to change, press Redo, enter and change any data fields, press Proceed to store the record. You may continue Scanning by pressing Proceed, or press Back to return to the Update menu. Then press R, to return to the Main Menu.

4. You can print headings and titles by simply running a little Basic program first to print on the top of a page, then run Data Base 99 to print the data.

5. One byte is one character, i.e. one letter or one number. A byte of data is defined by the CTRL comma, you can have up to 245 bytes of data. You can only enter data in the places where you have defined a data field by using the CTRL comma. All other words on the screen are merely for your convenience and have no effect on the data.

6. Each record takes one sector on the disk, no matter how few data bytes you have defined. Since you cannot add fields after you have created a data file, it is a good idea to fill up the rest of the screen with several miscellaneous fields for possible future use.