

E Z Y F I L E 2

DISK/CASSETTE DATABASE SYSTEM

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GENERAL DESCRIPTION

EZYFILE2 is a RAM-based general purpose database system for handling alphanumeric data. It provides a convenient means of filing information with rapid searching and sorting capability. EZYFILE2 is particularly suitable for handling mailing lists and cataloguing data. It is written in Z-80 machine language and is suitable for use in 32K or 48K Sorcerer microcomputers. Files may be stored on cassette or on disk under the CP/M 1.4 or later operating system.

Commands available in functional groupings are:

A: File Definition: CREATE
B: File Input/Output: LOAD, MERGE, SAVE
C: File Alteration: ADD, DELETE, EDIT, SORT, EXPAND
D: File Listing: LIST, REPORT
E: System Parameters: PRINTER, SPACE, FILES
F: Program Exit: CPM, MONITOR

Each of these is fully described under its own heading.

Allowance is made for up to 750 records which may consist of 1-20 fields. Each field is given a name by the user when creating the database and this is used as an aid in manipulating the file. The space available for record storage is approximately 11K less than the available RAM in cassette mode and 16K less than CP/M system size in disk mode. A field may contain up to 56 characters. It is best to divide the record into small fields which are useful for sorting and searching.

e.g. For a file of names and addresses, the fields could be:

NAME, STREET, SUBURB, ZIPCOD and PHONE.

The BASIC ROM-PAC should be removed before loading the program. Many SORCERER monitor routines are used to provide efficient I/O and other features. For this reason, it is important that the CP/M system you use in disk mode MUST have a working Sorcerer monitor work area.

TO LOAD AND RUN EZYFILE2

A. Cassette System.

1. Turn off computer, wait 10 sec. and remove ROM-PAC.
2. LOad program and type GO 100 or LOG program.

B. Disk System.

1. If program is not already on disk then boot the CP/M system, exit to Sorcerer monitor (RESET), >LO program, warm boot CP/M (>GO 0) and then use SAVE 33 EZYFILE2.COM
2. If program is on disk, then simply type EZYFILE2
3. You also have the option of loading in a file at the same time that you load the program by putting the file name on the command line
e.g. EZYFILE2 NAMES.EZY

C. Restarting EZYFILE2 (for both cases)

To re-enter program after exiting, type:

>GO 100 to initialize all files. (COLD start)
>GO 103 to retain previous data. (WARM start)

NOTE: When cold started, EZYFILE2 looks for a 0C3H byte at location 5. If this is present, it assumes that CP/M is being used otherwise EZYFILE2 reserves more memory for file storage. In the disk case, a large file will overlay the CCP of the disk operating system, so save files before returning to CP/M.

PRINTER USE

In the LIST and REPORT commands, you may specify listing on a printer. Use the PRINTER command to set the type of printer before you use these commands. The default value is video only. If no printer is attached, do NOT use this command as the program may 'hang'. The program has a built in serial printer driver set to run at 300 baud. Output from these commands will be sent to the unit specified in the PRINTER command only if you answer 'Y' to the 'Want Printer' prompt. You may customize the printer driver (see customization notes).

RANGE OPTIONS

For the commands LIST, REPORT, EDIT, DELETE and SAVE you may select the range of records to be processed from the following options:

A - ALL records in file
O - ONE of the records (by number)
R - RANGE of records (by number)
F - FIELD match using key field.

The first three are self-explanatory. The F option provides a means of accessing records whose key field matches a string entered by the user. To use this option, choose the field you want to be the key field and enter a string for comparison.

Three types of comparison are available:

F - FULL comparison (exact match)
P - PART comparison (match any part of field)
L - LEFT comparison (match left part of field)

You may also select that records will be processed if the comparison is true (MATCH) or false (NOMATCH) by entering M or N. The default conditions are FULL comparison and MATCH and these may be obtained by simply pressing return in answer to these two questions.

e.g. FULL - string ROBERT would only match with field ROBERT.
PART - string ROB would match ROB, ROBERT, THROB,
 PROBE, ROBE ST. etc.
LEFT - string ROB would match ROB, ROBERT, ROBE but would
 not match PROBE.

You may also use the character '?' as a wildcard character in field comparisons.

e.g. ???? with FULL MATCH will match all 4 character fields.
ROB??? with FULL MATCH will match ROBERT, ROBINS etc.

also a null field (enter CR only) can be used with FULL NOMATCH to match all non-empty fields.

For single character entries such as field numbers or Y/N answers, there is no need to press return and you may use upper or lower case. Also, if CTRL-C is entered, you will be returned to command mode and the current operation will be aborted. For entries which are (or could be) more than one character, press RETURN after the entry. To enter field contents in the ADD and EDIT commands, a full screen editor is used.(see details below).

SCREEN EDITOR

EZYFILE2 includes a screen editor for use with the ADD and EDIT commands. This allows the contents of any or all fields to be entered/changed before the record is added to or altered in the file. Most of the commands used in the editor involve pressing the CTRL key with the wanted function.

Cursor Positioning:

Use CTRL and arrow keys on numeric key pad to move the cursor up, down, left and right.

CTRL-HOME will put the cursor at the start of field A.

TAB will circularly move the cursor 8 characters to the right.

RETURN will position the cursor at the start of the next field down (Note: this does not cause the field's contents to be saved).

Inserting/Deleting Text:

CTRL-D will delete the character under the cursor, moving all text after this one space to the left.

CTRL-T will truncate all text from the cursor to the end of the line, filling the characters with spaces.

SHIFT-RUB will delete the character before the cursor without moving any text.

CTRL-^ will open up the text at the cursor position, allowing you to insert text before the character at the cursor position. Characters typed will be inserted until another control character is typed. All text moving off the screen at the right will be lost. Normally, you would finish the insertion with a CTRL-D to delete the space inserted when you typed CTRL-^.

Saving Changed/Added Record:

ESC (escape) is used to enter the contents of the record as displayed on the screen into the file in RAM. This will also cause you to move to the next record in the range.

CTRL-C will return you to command mode without entering or changing the record displayed on the screen.

In EDIT, CTRL-\ (back-slash) will take you to the next record in the range without changing the current one in the file.

NOTES:

1. ESC is the only way of actually storing the screen display in the file.
2. The end of each field is taken as the last non-space character on that line.
3. The cursor is 'trapped' in the editing area of the record displayed on the screen.
4. What you see on the screen is what you get in the file when you press ESC.

THE COMMANDS (in functional order)

Note: To enter a command, type at least the first two letters of the command followed by a return.

A: FILE DEFINITION

A.1:CREATE

Use this to define the number of fields and their names when setting up the database. Type the field name beside its number. Only 6 characters are used and the name is either truncated or blank-filled on the right to achieve this. If less than 20 fields are wanted, enter a blank one after the last by pressing return only. You may use this command also to rename the fields for an existing file by creating the same number of field names and then merging the file. (see MERGE).

B: FILE INPUT/OUTPUT

B.1:LOAD

Use this to load a previously saved EZYFILE2 file from either disk or cassette. When the prompt 'Unit:Filename?' appears, enter one of the following:

1:FILENAME to load from cassette unit 1.
2:FILENAME to load from cassette unit 2.
A:FILENAME to load from disk unit A.
B:FILENAME to load from disk unit B.
C:FILENAME to load from disk unit C.
D:FILENAME to load from disk unit D.

If a file is already present, the prompt REALLY? will be shown. If you answer 'Y' to this, then that file will be deleted and loading can continue. Answering 'N' will take you back to command mode. Thus there is no need to delete one file before loading another. If you want to load a further file as well as the one you have in RAM, then see MERGE. The file is always loaded in the order in which it was saved. This command can also be used to load REPORT/PRINTER parameters by naming the file with its first character '/' (slash). These parameter files may be loaded at any time without affecting the data file already in RAM.

(a) Cassette Use

If using a serial data cable, the cassette motor will automatically be switched on and off. If the file found is not the one wanted, either load the correct tape and keep going or press escape and start the program by typing GO 100. The file name is limited to 8 characters with the first alphabetic. All cassette files are saved and loaded at 1200 baud. If you want tape files loaded and saved at 300 baud, see the customization notes. A prompt is displayed to allow you to set up tape recorder before use.

NOTE: The format used for the saving/loading of tape files by EZYFILE2 is not the same as the Sorcerer Monitor normally uses and is different from that used by the original EZYFILE program. You may convert any tape files you have saved with the older EZYFILE to this new format by using the program TPCNV (see details at end of documentation).

C.2:DELETE

Use this to remove records from the file. The full range options are available. Two types of delete are available, Auto delete and Query delete. In the Query delete mode, the record is listed to allow you to decide whether the particular record is to be deleted or not. You may also exit from the Query option delete routine by pressing CTRL-C instead of answering Y/N.

The records are deleted in order from the highest number to the lowest in the range. For longer deletes, a flashing character is shown in the top right corner of the screen. The space freed is available for immediate use for file expansion. To delete the whole file, see LOAD and CREATE commands.

C.3:EDIT

Use this to change the contents of records in the file. Full range options are available. This routine may be used in two ways. These are chosen by the way in which you invoke the command. Typing the command 'ED' or 'EDIT' will always place the cursor at the start of the first field. Typing the command 'ED/f' where f is a letter 'A' to maximum field letter, will always place the cursor at the start of field f (NOTE in this case the command MUST be ED/f). In both cases, the screen editor (see separate heading) is used to change the contents of the field(s). CTRL-C will return you to command mode without changing the record currently shown on the screen. CTRL-\ will leave the current record unchanged and display the next record in the range for editing.

This procedure is repeated for all records in the range in ascending order.

C.4:SORT

Use to sort the records in the file using one of the fields as a sort key. The sort is an indexed alphabetic straight selection sort. The actual records are not moved, only pointers to their starting address. To correctly sort fields holding numbers, they should have the same number of digits in each. The method of sorting permits multi-key sorts. If you wish to sort by several keys, sort first by the innermost key through to the outermost.

e.g. To sort by first name within surname, sort firstly by first name and then by surname. This will put the file into surname order, with first names in order for a given surname.

The time taken depends on number of records, average length of sort field, position of sort field and any order present in file.

Sorting commences immediately after you verify the sort field and a flashing character in the top right corner of the screen indicates that sorting is in progress.

C.5:EXPAND

Use to expand the number of fields in a file (up to maximum of 20). The extra field(s) are added on to the end of the existing fields and they are set to blank fields in each record of the file. This will increase the size of the file by (no of recs x no of new fields) bytes. You will be asked for the new number of fields, which must be greater than the present number and less than 21. You then enter the names of the new fields starting with the first new field. The routine then takes you straight to the SAVE command, so that the new expanded file may be written to disk/tape. Note that the file currently in RAM is NOT changed and that the expansion occurs as the file is SAVED. You may abort the process at the SAVE part using CTRL-C and nothing will be changed.

(b) Disk Use

The file extension type defaults to .EZY and you need not enter this when typing the file name (up to 8 characters). However, you may specify a different extension by including this with the filename in loading/saving:
e.g. A:MYFILE.DAT will load/save file MYFILE.DAT with drive A

A:MYFILE will load/save file MYFILE.EZY with drive A

If any error occurs, EZYFILE2 will display its error message. (See end of documentation for error codes). The disk operation will commence immediately you enter the unit:filename for loading/merging and after you specify the range when saving.

The FILES command can be used to list the files on a disk and it also resets the system to allow a change of disk before writing to it (see FILES).

NOTE: The format used for disk files is the same for EZYFILE2 and the older EZYFILE.

B.2:MERGE

This is used to load a further EZYFILE2 file in and append it to one already existing. See LOAD command for details of disk/cassette use.

Three important points must be noted about the MERGE.

1. The number of fields MUST be the same for each file.
2. The total number of records must be 750 or less.
3. The combined file must fit in the RAM available.

It is your responsibility to ensure that the combined file will still fit in the file space available. Use the SPACE command to find the amount of space left before merging. If the combined file will not fit in the space available, the number of fields is different or the total number of records would be greater than 750 an error message **ERROR IN MERGE** will be displayed and the original file left intact. After merging, the file will be in actual stored order and you may have to re-sort to obtain the order you had previously.

B.3:SAVE

Use to save an EZYFILE2 file on cassette or disk. See the LOAD command for details of cassette/disk operation. In the disk case, if a file of the same name exists on the disk being used, its extension type will be changed to .BAK and any previous back-up file with this name will be deleted. This provides standard CP/M back-up. This command can also be used to save REPORT/PRINTER parameter settings by making the first character of the file name '/' (slash). Normally, you would use the 'A' RANGE OPTION to save the whole file in its currently sorted order. However, you may also use the other range descriptions to save a subfile for splitting a file into several parts.

C:FILE ALTERATION

C.1:ADD

Used to add new records to the file. Records are always added at the end of the file. To exit this mode, enter CTRL-C and you will return to command mode, ignoring the record currently shown on the screen. See details of the operation of the screen editor under its own heading.

Note: The ADD routine will automatically stop after the 750th record is entered or if there is no further file space (see OUT OF SPACE error message).

D:FILE LISTING

D.1:LIST

Use this to list out the records in the file. You may choose to stop after each record is listed by answering 'Y' to the initial prompt, otherwise there is a slight pause after each record. If you choose to stop after each record, you must press any key to continue listing. If you are not stopping after each record, you can still stop the listing when you want to by pressing RUN/STOP. The listing will stop at the end of the current record until you press another key. In either case holding down CTRL-C will abort the listing and return you to command mode. For a more controlled type of listing see the REPORT command. The full RANGE options are available. If you answer 'Y' to the 'Want Printer' prompt (this is only available if you selected not to stop at end of each record), the output will be sent to your printer as well as the screen, provided you have used the PRINTER command to set the parameters for your printer.

D.2:REPORT

Use this to list records from the file in a user requested format and optionally to sum the contents of numeric fields. Full range options are available and a printer may be used (see printer notes). You may interrupt listing as for LIST command.

The REPORT command provides for single or multiple records to be listed on a line. If you reply '1' to the prompt 'Records across page (1-5 or return)', then only one record will be printed across the page. Entering RETURN with no number will use whatever parameters have been set previously or read in from a '// type file. If no parameters have been set this will lead to indeterminate results.

You may enter up to 30 field descriptions after this. In each case, the printer carriage movement (CR's, TABS, Spaces) will occur BEFORE the field described is printed. To conclude these field descriptions enter a RETURN without anything else. You may enter the fields in any order and even request the same field several times if you wish.

Field # - asks to a letter corresponding to a field (A-T)

Additionally, you may enter one of the special letters V, X or Z (anything else will be flagged as an error).

V - sum this field (optionally printing it as a 14 character right-justified numeric field. Non-numeric fields will be summed as 0 and printed as ****).

X - print the field name corresponding to this field as a 6 character wide field.

Z - print out the subtotal for this record as a 14 character right-justified numeric field and zero the subtotal. This gives the subtotal of any field which has been defined in the record up to this point by the V option.

After using V or X, a further '#' prompt requires the field letter to be provided.

For all printing cases, you are asked for:

CR's - no of CR-LF's before record is printed. Entering a RETURN only here will give 1 CR-LF and end the description for this field.

TABS? - TAB position (0 to linelength-1) for placement of the field. A RETURN here will go to the Spaces? prompt. Note that if the printer carriage is beyond the TAB position, the field will be printed at the current position. The maximum TAB position that may be entered is 127.

Spaces? - the number of spaces to be printed before the field is printed. A RETURN will give zero spaces.

D.2:REPORT (ctd)

You are asked at the conclusion of the field descriptions for the number of CR-LF's between records and in the case of more than one record across the page, for the TAB positions of the left hand corners of the records on the page.

Finally, you are asked for the RANGE option and if you want a printer, as defined under the PRINTER command. In the case of 'N' here, no headings will be printed.

The numeric totals can range from -9999999999.99 to +9999999999.99. If a V option has been used then the total of that field over all the records in the range will be printed at the end. No indication is given of overflow. The numeric fields must consist of plus/minus, space or a digit as the first character and may contain up to 10 digits before the decimal place and up to 2 digits after. Any further digits will be truncated.

NOTES:

You can save these details along with the printer details at any time by using SAVE and a file name starting with '//.

When using a heading and a printer, you could use 0 CR's for the first field and establish the inter-record gap with the number of CR's between records. This will give an even page structure. You need to consider the no of lines per page, the no of CR's per record and the no of CR's after the heading to get your layout.

E:SYSTEM PARAMETERS

E.1:PRINTER

Use this to set up the appropriate printer driver for your printer if you have one. You may choose either serial or Centronics-compatible parallel drivers (see Printer notes for further details). The driver selected here will be the one used when you have selected the 'Y' option to the 'Want Printer' prompt in the LIST and REPORT commands. You should set the printer type before you actually want output to be sent to the printer. If you do not have a printer attached to your system, ALWAYS leave the device set to 'V' (video). You will be asked for:

chars/line - actual no of characters across printer page

lines/page - actual no of lines to be used on printer page

Stop at page end (Y/N) - Use to stop for single sheets

CR's at Page End - Number of CR-LF's you want output at the end of a page. (255 here will cause a CR and then a Form Feed (0CH) to be output). Always set this to 0 for continuous printing such as in mailing label production.

Want Heading? - If you answer 'Y' to this you will be asked for a heading to be input after the '?' prompt as well as the TAB position of it and the number of CR's AFTER it is printed. The page number is printed in the top right hand corner of the page and you should allow 9 spaces for this.

If your printer uses automatic perforation-skip at end of page then you should use one less than the actual page length to ensure no conflict between EZYFILE2 and your printer.

Note you may save these parameters along with the REPORT details by using SAVE and a filename starting with '/' (slash).

E.2:SPACE

Use this to check the amount of space left in the file area for records. The routine will print out the number of bytes of RAM left for file expansion as a decimal number, as well as the current size of the file as a decimal number. The number of records in the file is also output. If the file is bigger than the file space, it prints an OUT OF SPACE error message (see error messages).

E.3:FILES

Use this to list out the files on any disk that is currently logged into the operating system. This command will not do anything on a cassette-based system. You are merely asked for the drive (A - D) and the files are listed on the screen. This command will also reset the disk system, so may be used to change disks. Insert the new disk before entering the drive letter.

F:PROGRAM EXIT

F.1:CPM

Use to exit to the CP/M operating system. If there is no 0C3H byte at location 5, you will be returned to command mode. If the file has been changed and not saved, a warning message will be printed. If you want to save the file, type 'Y' and you will be returned to command mode. If the file is large, it will overlay the CCP area of the disk operating system. When you use the CPM command, this area of the file will be lost. In emergency situations, it would be better to use the MONITOR command, since this does not overwrite the end of a large file and allows you to save the file on cassette.

F.2:MONITOR

Use to exit to the Sorcerer monitor. If the file has been changed and not saved, a warning message is printed (See the CPM command). If you want to re-enter the program without losing the data, use GO 103.

ERROR MESSAGES

1. ** ILLEGAL ENTRY **

Your input to a command, record number or field number was not in an allowable range. Repeat as directed.

2. * NO DATABASE PRESENT *

You have attempted to ADD records before CREATing or LOADING a database. This error will return you to command mode.

3. * OUT OF SPACE *

(a) When ADDing records, the last record entered would not fit in the file space left. It will be ignored and the ADD routine left.

(b) When EDITing, the revised record would extend beyond the end of file space. The record will not be included and the EDIT routine left. To ensure correct operation of EZYFILE2, you should reduce the file size by EDIT or DELETE.

(c) When LOADING, the file being loaded will not fit in the space available in RAM. You must have decreased your memory size since saving the file.

4. ** ERROR IN MERGE **

When merging in a file with one already present, the number of fields for the two files is different or the total number of records is greater than 750. Your previous file will be left unchanged.

5. ** ERROR - NO OF RECORDS IN FILE = N

There are too few records in the file to execute the command you have typed in.

6. X TYPE DISK ERROR **

The letter X indicates the type of error on a disk operation.

- O - Error on Opening File
- C - Error on Closing File
- M - Error on Making file (create)
- W - Error on Disk Write
- R - Error on Disk Read

EZYFILE2 is designed to withstand abuse, so try all the commands on a trial database to get used to their operation before using it seriously.

CUSTOMIZATION NOTES

 This section is intended for those users who may want to use unusual printer drivers etc.

1. Cassette Baud Rate
 1200 baud is default setting. To change to 300 baud, change value at 109H to 0 (40H is 1200 baud).

2. Serial Printer Baud Rate
 300 baud is default setting. To change to 1200 baud, change value at 108H to 40H.

3. Printer Customization.
 The PRINTER command, allows you to choose V, C or S. If you want a special driver, you can write it in where the serial driver is located (1C2H - 1EAH). The character to be output is in the A register and you should leave others unaltered on return. You could put a Jump to the driver at this point and then use S for the printer type.

The Centronics driver jumps to 0E993H in the monitor. If you want a fixed address to jump to you could insert this at 45FH-460H and then use the P selection.

4. File Storage Method.
 All records are stored with a 0 (NULL) at the end of each field in a sequential order. There is also a null at the start of the data records. A pointer to the start of each record (22F7H-28D2H) is used for sorting etc. and is established when the file is loaded in.

5. Partial Address Map.

ADDRESS	CONTENTS	DEFAULT
106-7	Current Printer Routine Addr	0E01BH
108	Serial Printer Baud Rate	0 = 300 baud
109	Cassette Baud Rate	40H = 1200 bd
1C2-1EA	Serial Printer Driver	
2310-28EB	Pointers to records	
28EC-28ED	Pointer to end of data file	
28EE	No of fields/rec	
28EF-28F0	No of records in file	
28F1-29A5	Field Names Storage	
29A6-	Data Records Storage	
100-21FF	Actual EZYFILE2 Program	

TAPE FILE CONVERSION

Use the utility program TPCNV to convert files saved with the original EZYFILE program to the new format required by EZYFILE2. Load and run the program and insert tapes as requested.