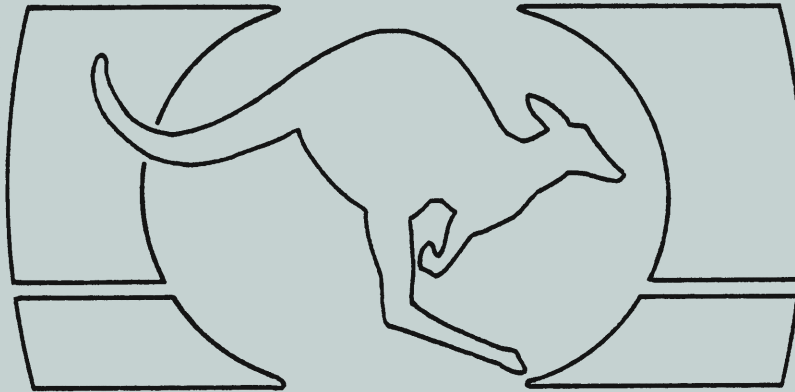

HP-75

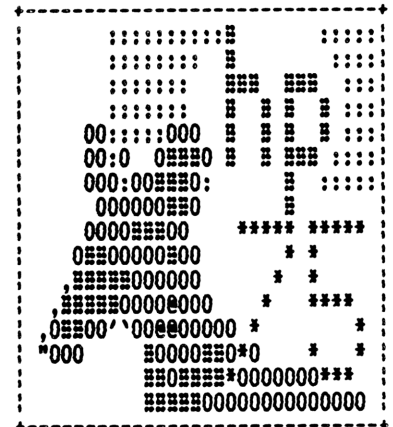
Screen Editor / Calculator



VisiCalc and I/O ROM are required. The HP Text Formatter ROM is supported. Please read instructions and cautions before using this program. You may make one copy for your own use only.

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Introduction

With your HP-75, this book, and a printer you can create and print memos, more extensive reports such as this manual, or documents of any size. Features include a full screen text editor with search & replace, file merge and most other advanced word processing functions. There is a full screen calculator which can exchange data with VisiCalc Worksheets. formulas may be recalled from VisiCalc and used in your calculations. The program can also work as an application manager, calling other programs as needed. Report generation is enhanced with functions like centering, merging Worksheets and text files from Cassette or Disc, extended printer control and command structure similar to the Hewlett-Packard Text Formatter ROM. It can be used with printer, up to two mass storage devices, and video interface. It is just as at home handheld without any accessories. This package is extensible by adding other Basic language programs.

The two basic types of word processor are those which format the document on the display, and those which work with concepts, sentences and lines, while waiting to format the document until you are finished editing. This is of the latter type. You may be using a 32, 40 or 80 column display, for this reason on screen formatting is not practical.

The main functions of word processing are text entry and printing. To keep memory usage to a minimum, these two activities are separate and interactive modules. Text entry and editing are accomplished with the ED program. To print a formatted report, we use the FORMAT program. If you already have the Hewlett-Packard Text Formatter ROM, you may use it. FORMAT and the HP program use similar commands. However, there are some differences. This is discussed in the section called "Comparisons with the HP Formatter".

ED will probably be kept in your computer much of the time. For this reason, it is as compact as possible. The prompts are quite short, the memory saved being used for other functions. Take a few minutes to acquaint yourself with the command structure and and I am sure you will appreciate this brevity.

This manual is in three sections. First the discussion of ED, then FORMAT. The last section has examples of reports as entered and printed.

Please read this manual before using the programs.

Second page of Introduction

HP-75
Full Screen Text Editor

This program provides full screen text editing, a calculator, and integration with VisiCalc. It can be used with a single line LCD display or any display device.

Any character that can be displayed is allowed. Characters that cannot be displayed on your display device would be best avoided.

There are two modes, Edit and Command. Edit mode allows data input and review, cursor movement, calculating and recalling cells from VisiCalc. Command mode provides access to other functions like inserting lines or calling VisiCalc.

CONFIGURATION

The program is furnished configured for use with a display showing 32 columns in 16 rows. It is also set up to search for programs you might wish to call from the first mass storage device it finds and to load and save Text files in the second. If there is only one mass storage device then it will search for both programs and Text files from that device.

To change the program for your HP-IL configuration you must change line 10 in the program. Line 10 looks like this when you first edit the program:

```
10 DATA 32,13,":M1"
```

The first value on the line refers to the number of columns (across) you wish to display. The second number is the number of rows (vertically) MINUS 3, in this case the monitor is assumed to display 16 rows, so the number there is 13. It is not necessary to change the program when you are using just the LCD. It is not necessary to set the values to the maximum allowed by your display. Screen change will be faster with fewer lines displayed, and when moving to previously edited lines than to new lines.

The third value is ":M1". It is the default device code ID assigned by AUTOLOOP for a mass storage device. If you have two or more mass storage devices and wish to use the second device for all activity then change this to ":M2". Leave the code on line 10 even if you will not be using any mass storage. The sample below is for a 40 column and 20 row display:

```
10 DATA 40,17,":M1"
```

CONFIGURATION CAUTIONS

It is necessary to have all three values on line 10. The first two values MUST be the columns then rows to be displayed. The third value MUST be a mass storage device code as specified by AUTOLOOP. DO NOT change the sequence or number of items on this line. DO NOT add quotes to the first two values and DO NOT delete the quotes from ":M1". The three values must, of course, be separated by commas. Be sure to use device codes specified by AUTOLOOP.

GETTING STARTED

The program is approximately 3900 bytes long and requires another 900 while it runs. Be sure that you have enough memory available for the program and your Text file. The program is called "ED", it is on three magnetic cards. Once it is in your computer enter ED and press RTN. The computer will ask you for the name of a Text file. Enter the name of a file in RAM, a new file name, or the name of a Text file on mass storage. If the file is not in RAM the computer will ask you if you would like to create a New file or Load one that already exists. The file becomes the edit file, so there must not be an unnamed workfile with data in it or the program will stop with an error. Either PURGE or NAME the workfile and then enter CCNT and press RTN, the program will continue at the file name prompt. If you had asked the program to load a file and it either did not exist on mass storage or was the wrong file type or other error the program will also stop and display an appropriate error message. Once you have the file assigned you are ready to edit the file.

TEXT EDITING

When you have assigned a Text file to edit the screen will show the first portion of that file. If it is a new file there will be a screen blank except for the flashing cursor in the upper left corner and the line number of the first line on the screen in the lower left. The display does not show individual line numbers or the space at the beginning of the line. The line number and space are in the file, just suppressed from the display for an uncluttered screen. To begin using the program just start typing, the computer will beep when you are five characters from the end of the line. To see the current line number, enter Command Mode, the first number displayed is the current line number. The number in parentheses is the last line in the file. If you press RTN when you have finished editing the current line, the cursor will move to the beginning of the next line. Pressing the arrow keys to move up and down will not return the cursor to the beginning of the line, but will terminate input and save the current line. You may find that cursor movement is faster when editing files at the end of RAM.

Arrow keys can take you up or down a single line or a full screen. FET will find the first or next occurrence of a word and place that line at the top of the screen and the cursor on the first character of the word. The Command Mode goto function can be used to move to a specified line number.

Command Mode functions include Search and Replace, merging with other files and saving a portion of the current file in another file. To move a single line, place the cursor on that line and press SHIFT TIME to store the line, then move to the line desired and use Command Mode SHIFT TIME to recall that line.

When you edit a file of unknown line length, it is a good idea to make sure the lines are not too long. The end of lines longer than the display device width will be lost when you edit the lines. Enter Command Mode and press T to shorten the lines. This will take from a few seconds to several minutes depending on the size of the file and the number of long lines.

CALCULATIONS

It is necessary to have a VisiCalc Worksheet active to use the calculator functions, even if the calculations do not directly relate to VisiCalc. If there is not a Worksheet active, the program will ask you for the name of one. Formulas may contain references to cells in any Worksheet in RAM. Since the calculator is the same as used by VisiCalc, the same rules apply. One difference from VisiCalc: avoid calling Basic Language Extension Functions with the calculator, results may be unreliable and data loss or system reset may occur.

Type your formula on any line the Text file, even on lines adjoining regular Text, then press SHIFT EDIT. The computer will calculate the line and return the results to that line. Command Mode SHIFT EDIT will recall the last formula used. The results of the computation are also placed in a buffer and may be recalled with Command Mode SHIFT TIME. To make it easier to keep track of the numbers, remarks are allowed on the same line, for instance:

2*SQR(PI)! This is a note

could be calculated and the results would replace it on the same line:

3.54490770182! This is a note.

Notice that the notes after the "!" were not changed. Data may be exchanged with VisiCalc without using the calculator. Press SHIFT APPT and you can store or recall data directly. This is explained further in the section on Edit Level Functions.

MENUS

To simplify calling subprograms, you may designate a portion of a file or a separate file as a menu of programs. Typically, you might have one program name on each line followed by a short description. Move the cursor to the first character of the name of the program and press SHIFT RUN and the program will run. The name must either be followed by a space or exactly eight letters long. Underlined names are allowed, but not underlined spaces.

HP-75 FILE STRUCTURE

There can be as many files in the computer as available memory will allow. File types can be Basic programs, Text, VisiCalc Worksheets and others. If SHELL ON is specified, when you enter a program name and press RTN it will be CALLED. The difference between RUNNING and CALLING a program is that when you CALL, any previously run programs will not be deallocated. When you RUN a program, any previously Run or CALLED programs will be deallocated. Allocation is the pre-run time the computer takes after you press RTN. During that time the computer sets aside the additional memory the program will need as it runs. Once the program is allocated then CALLING it is a fairly quick process.

It is important that each program that is CALLED (generally via the SHELL option) end with an END and that you do not stop it by pressing ATTN. If you CALL a program which has previously been CALLED and then suspended by pressing ATTN then the computer will set aside another block of memory for the program. When a CALLED program ends most of the memory it used will be again available, however the program will not be deallocated. As you can see, if you repeatedly CALL a program and suspend it with ATTN, in very short order you will be out of memory. A solution is to make sure programs end with an END (not STOP), which will happen automatically if the natural flow of the program is to its last line. Other solutions are to periodically enter CLEAR VARS to free that memory, or RUN a program.

If the file you wish to use is on Cassette or Disc you must make sure that there is sufficient memory for the Text file and for the approximately 900 bytes this program needs for its own use.

To keep memory usage to a minimum, it is suggested that you split long documents into smaller files. You can edit a file, and when you wish to move to the next portion, the program will save the first to mass storage then delete it from RAM, then ask you for the second file's name and load it. Give each file in the document a slightly different name. While you may not want to use this system to write a novel, this author has used it for writing a 35000 word technical manual with only occasionally becoming lost. Remember that you can switch to a separate notebook file for a moment and record the growing file list there.

SCREEN EDITOR EXAMPLE

Text files may be used for calculations, notes, program menus a combination of all three, or for writing documents to be listed as is or formatted by a formatting program.

The following is a sample of a notebook file. The line numbers and leading space do not show when running the program, so we will not include them in this sample. The format shown is for a 32 column by 16 row display. The first screen in the file is the area used for calculations and notes:

```
Call Bob about inventory changes
2*33.25+5!opening inventory
71.5!opening inventory
22! units purchased
Monday: Marys birthday(29 again)
```

```
If you convince me
And I convince you
Won't we still have
Two points of view?
```

```
33*6.175+A2
294.775
Does anyone know what the
VisiCalc Variable: T. means?
```

The second screen in the same file might be a menu of available programs. You could place the cursor over the program name then press **SHIFT RUN** to call the program, which could be on mass storage, or in RAM. When the CALLED program ends the file will return to the screen with the cursor in the same place.

```
Menu of available programs:
FORMAT75 - text formatter
EDIT - File Mgr editor.
INDEX - File Mgr search.
SWAP - VisiCalc()Text Converter
VCMERGE - VisiCalc Merge Function
LABELS - Mailing Label Printer
FORMS - Mult/FORMAT75
RPN - RPN Calculator
ACYDUCY - Card game
GAG - joke writing program
MACRO - Search&Report
DECIDE - evaluation aid
CATALOG - Print Directory
```

Besides notebook, calculator and menu functions, the program can be used as a screen editor for Text files to be printed by programs like the Formatter Module. Commands may be used just as in any other Text file.

```
^pl 66 6 6^ma10 66^co
Tyrone Flyer
United Tackle Co.
Linoleum, CA 91235
^sk1Dear Ty:
^paThanks for the tips. I never
would have thought of that
method for keeping the worms
warm. The mosquito repellent and
creel wax were above reproach.
^paKeep up the good work.
^sk2Yours Truly
^sk4Wallace I. Perch
```

The instructions furnished with your Text Formatter will give exact syntax for output formatting commands. If the file is very large it might be a good idea to use several files and either print them separately or use the merge function in your formatter program. This can give you the ability to manipulate very large files while keeping memory usage to a minimum.

EDIT LEVEL

UP ARROW - moves up one line without homing cursor. If you are at the top of the screen, will move to previous screen.

SHIFT UP - move up to previous screen.

CTL UP - move to first screen

DN ARROW - move cursor down one row without homing cursor. If you are at the bottom line will move to top of next screen.

SHIFT DN - move to next screen.

CTL DN - move to first line of final screen in the file.

RTN - terminates input on current line. Moves cursor to beginning of next line. If at the last line on the screen, moves to first line in next screen.

CLR - clears data on the current edit line. Different from the usual usage because it clears just the current line, will not "fix" the next line down if you have inadvertently typed around to it.

FET - fetch a string. Abs means to search from the beginning of the file, Rel means search relative to the current line. The wild card character is the "-".

SHIFT EDIT - computes the current line and returns the result. Remarks are ignored if preceded by a "!". Results are also placed in a buffer for later recall (see Command mode **SHIFT TIME**).

SHIFT APPT - exchange data with VisiCalc. The first part of the prompt allows four options:

R = recall cell contents as formatted number or label.

S = store current line to cell. Will be stored as a formula or number if possible, as a label if it is not.

L = store to cell as a label without attempting to enter it as a formula.

F = recall the formula from the cell. Cell references will return default headers for a more compact formula.

Both column and row coordinates are required and may be entered with user or default headers.

SHIFT TIME - copy current line in a temporary buffer. Command mode **SHIFT TIME** recalls the buffer. Since this is used for Text or numbers, remarks are not reserved.

SHIFT RUN - To call a sub-program, place the cursor on the first character of the program name and press **SHIFT RUN**. The program name must be followed by a space or be at the right end of the line. The effect is the same as calling a program from Command Level except that you do not have to enter the program name. If you would like, you can set up a file or portion of a file as a menu, much like with the HP-110 Portable Computer.

TIME, APPT, EDIT - enter command mode

Most editing keys operate as during normal input. If you type around to another line in the display that line will not be changed, but the data on the long line will be truncated if you review the line again. Remember, this is a single line editor, word wrap is not provided.

COMMAND LEVEL

The prompt shows first the current line number, then the end of the file in parentheses, then the active command level keys, and finally currently free RAM memory. While all Command level functions are available, only a few are displayed. To view the other functions, press a non-command key, such as the **SPACE BAR** and other names will be displayed for one second. You may view the function labels again by pressing **SHIFT FET** while still in command mode. It is not necessary for a label to be in the display to use the the function.

You may press **ATTN** to temporarily suspend the program but **Q** should be used because it restores the machine status.

COMMAND LEVEL FUNCTIONS:

SHIFT EDIT - Returns the formula used in the last computation. Remarks in the line are retained.

SHIFT APPT- same as in Edit mode.

SHIFT TIME- recalls the contents of the buffer. Returns either the data last stored (in Edit mode) or the result of the last computation, which ever was most recent. Remarks from the current line are not retained.

SHIFT ?- Does a CAT ALL. **UP** and **DN** arrow keys move you through the catalog. Since you are still in command mode, the command keys are active. Press a command key to perform any other function to terminate the CAT ALL. **SPACE BAR** or other non-command key will return you to the command prompt.

CTL ? (backslash) - as with **SHIFT ?** but does a CAT ALL of the mass storage device. If there are two mass storage devices will use the second one.

D - delete specified lines beginning with the current line

I - insert blank lines following the current line. New lines must be edited at least once to become "real", **I,D,R,M** will not save lines that have not been edited.

T - truncate all lines in the file to the current display width. Longer lines will be split into two or more lines. Lines are always split at a space. It is important to remember not to make any single words longer than the width of the display. Apologies to those who live in Germany or Wales for this limit.

Q - quit the program. If there is a mass storage device present you will be asked if you would like to save the file to the medium and purge it from RAM before ending the program. Restores system status to conditions previous to starting program.

C - continue. Restore the current display.

S - save to another Text file. Enter number of lines and file name. Text will be saved starting with the current line.

M - merge an external Text file. Text is added after the current line. Original text beyond the current line is moved beyond the merged lines. If you wish to merge at the end of the file, place the edit cursor on the last line before entering this function. Enter the file name at the prompt, if you wish the merged file to be deleted after the merge, change the "N" in "purge:N" to a "Y".

R - search for a string and replace with another string. Wild characters are allowed, use a "-" for the wild card. Each line is checked one time for the search string, if you wish to change more than one occurrence in the line you will have to use this function again. If any lines are longer than the display allows, every line in the file will be automatically shortened to the display width using the Truncate function. Be sure that the resulting text will not have any words longer than the display width.

G - goto a line number. Default is the current edit line. The line will be placed at the top of the screen. Will not move beyond the last line in the file.

B - remove blank lines from within the file. If the resulting file is less than one screen, blank lines will be added to the end of the file.

N - to change to a new Text file. Assigned worksheet will stay the same. If there is a mass storage device present, you will be asked if you would like to save the current file to the device and purge it from RAM before continuing.

P - call a subprogram. If the called program is not in RAM, it will be searched for on the previously specified mass storage device. If the name is not valid, the computer will beep then continue. Do not include the name of the mass storage device in the name. Any programs loaded to RAM by this program will automatically be purged when control returns to this program, to conserve memory. If the called program ends with an END statement, this program will continue exactly where it was left unless the file has been changed by the called program. To continue this program after using a program that stopped with an error or STOP, enter CONT9999.

V - calls VisiCalc. You do not have to use the same Worksheet that is being used in this program. When you exit VisiCalc, this program will continue from where you left it with the same Worksheet active that was being used before going to VisiCalc.

W - to assign or change the active Worksheet. It is not necessary to have a Worksheet assigned if you are not using the calculator functions. If you have entered this function accidentally and do not wish to change the worksheet assignment, enter nothing at the prompt, you will be back in Command Mode and can press C to continue.

"ED" PROGRAM EXTENSIONS

The utility of this program can be extended by calling other Basic language programs while it runs. Programs should not be called with the calculator, but the menu function **SHIFT RUN** and the Command Mode **P** are used to run program.

The program below is a simple extension function. The two functions are Move and Purge. The Move function can be used to move a Text file that is already in the computer to the end of RAM. You will find that the screen editor program will work faster with files located there, especially vertical cursor movement.

You may call programs such as those in "File Management Applications With The HP-75 Portable Computer", available separately. These programs will combine to give you a fairly well integrated package.

Remember, called programs do not necessarily have to relate to this program. You are responsible to make sure you have enough memory, and that the called program exists and is a Basic Language program.

The number 32 on lines 50, 100 and 110 is the same as the first DATA item in the Screen Editor. They are listed as 32 in this example. The Screen Editor uses the number you specify for number of columns to display as the ASSIGN# file, change the value in this program if you are using a number of columns other than 32.

```
10 DIM Q$(256)
20 ON ERROR END
30 DISP " Move or Purge" @ X=POS("MP",UPRC$(SKEY$)) @ IF NOT X
THEN END
40 IF X=2 THEN DISP "purge"; ELSE DISP "move";
50 INPUT " file:",FILE$(32); F$ @ IF NOT LEN(F$) OR
INCAT(F$,"T")#2 THEN CAT ALL @ GOTO 50
60 IF X=2 THEN 100
70 EDIT F$ @ RENUMBER 1,1 @ ASSIGN # 3 TO F$ @ ASSIGN # 4 TO
".T",TEXT
80 FOR L=1 TO LASTLN?(F$) @ READ # 3,L ; Q$ @ PRINT # 4 ; Q$ @
PRINT # 3,L @ NEXT L
90 PURGE F$ @ RENAME ".T" TO F$ @ EDIT F$ @ END
100 X=0 @ IF LEFT$(UPRC$(F$),8)=FILE$(32) THEN X=1
110 PURGE F$ @ IF X THEN ASSIGN # 32 TO * @ RUN "ED"
END
```

Other simple programs could be done to do an exact or approximate word count or move data to or from a different file type. Another application could be for writing LEX files (in hex) or Basic programs with the screen editor then use an extension program to compile the file.

Extension programs must always end with an END statement so that when they are done control returns to the Screen Editor. While it is common practice to use **ATTN** to terminate programs, a more consistent method, one keeping with the **SHELL ON** function, is to have the program terminate with an END.

SCREEN EDITOR ADDENDUM

Run VisiCalc at least once after installing the ROM before running this program.

The program will not function properly if you have more than one display device assigned.

It is not possible to use the merge function with temporary files. That is, file names cannot begin with "." when using the Command mode merge function. This is a bug of the HP I/O ROM and will not be changed unless done so by Hewlett-Packard.

If you are using more than one mass storage device, the first one will be the one searched for programs, the second will be searched for Text files. If you change the DATA statement on line 10 of the program to ":M2" then the second device will be used for all programs and Text files.

DO NOT specify a mass storage device in the name of a program you may wish to run which is not in RAM. If the program is not found in RAM, it will automatically be loaded.

Search and Replace will recognize the space at the beginning of each line even though it is not shown in the display. This is useful if you would like to insert an extra leading space or other characters. It is also possible to delete the leading space which will cause the next character on each line to be turned into a space if you edit that line again with this program. These options have been retained to keep the program as flexible as possible.

You can clear the right portion of a line by typing over the text with spaces. Those spaces on the end of the line will be removed by the program.

Be sure you have enough memory to CALL programs, merge and other memory consuming operations. The program will usually go to Command mode automatically if you try to do a memory consuming function and available memory is less than 800 bytes.

Goto will not go beyond the last line in the file. If you are editing within the body of the file and wish to edit a new screen beginning with the last line in the file, specify a very large number to goto, and the last line will be at the top of the screen with a screen full of blank lines below it. In other words, if you specify a line beyond the end of the file you will not end up with a file with several thousand blank lines in it.

It is not necessary to set the number of lines displayed to one when using the single line LCD. Leave it at whatever setting you would use with a monitor and it will act just the same, except faster.

Moving to new lines or new screens will take longer than going to lines previously edited. DO NOT use the calculator to CALL Basic Language programs.

There is some chance that the computer will "LOCK UP" with total data loss necessitating a reset (SHIFT CTL CLR). Edit mode SHIFT RUN and Command mode P are the proper ways to call programs.

You are authorized to make a backup copy of this program for your own use. Making a spare copy is highly recommended.

Other programs are available to further expand the utility of this package and the HP-75. Contact the address below for details or if you have any questions.

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Format Introduction

What it does

This program prints an attractive formatted report from your Text files and VisiCalc Worksheets. Since the program can load files from mass storage, the practical limit for a document is the size of one mass storage medium. When using the 82161A Cassette drive this is about forty pages, the HP9114A Disc Drive could conceivably provide two hundred pages. A fair assumption is that a printed page represents about 2500-3000 Bytes in a Text file.

Practical uses for this program include printing personal letters, memos, form letters, simple reports and extensive reports (merging other Text files and VisiCalc Worksheets and taking advantage of your printers functions).

This program reads the data in your Text file, printing the data using commands you have placed with the text. Commands tell the program to center a line, indent for a paragraph or merge another file.

The simplest way to write a Text file is with the Screen Editor program "ED". For compatibility with other programs, the first character on the line after the line number is ignored, generally this is a space. Writing a Text file manually using AUTO line numbering also provides this leading space. Programs from the package "File Management with the HP-75 Portable Computer" (available separately), also write files compatible with this program.

A discussion of the usage of each command is listed in the section titled, of course, "Command Discussions".

A little more in depth

Text files and VisiCalc Worksheets to be used must be either in RAM, or on the second (or only) mass storage device connected to the computer on the Hewlett-Packard Interface Loop (HP-IL). Any files not found in RAM will be automatically loaded by this program as it needs them, then deleted when they are no longer needed. Be sure you have enough available memory to run this program, the extra memory it uses, and any files to be loaded. With only this program in RAM, a 16K computer will have about 9000 Bytes free for Text and Worksheet files. A memory module will enable you to use larger files.

The methods for printing reports larger than the RAM capacity of HP-75 are fairly simple. The following discussion is not necessary if you are writing letters or simple reports. However, please review it for a general overview of the programs capabilities.

Writing large reports

Very large reports can be written by keeping them modular, perhaps under 4K each. This is also helpful if you do not wish to delete other programs and files from your HP-75 to make room for the multiple Text files, or you have standard sections (like a logo) that you do not wish to keep in the computer. A main file can be used which lists the names of the modules to be merged. The main file will stay in the computer throughout the run, merge files will be loaded, printed, then purged from RAM before going on to the next file. Worksheets to be included are also loaded only while needed. Any files that were found in RAM will be left there. CATALOG might look like this when you run the program:

Name	Type	Len
keys	T	256
MYPRDG	B	1300
FORMAT	B	4100
MAINFILE	T	3200
MERGE1	T	3000

The file called "MAINFILE" is the file which the program will use to find all files to merge. The file "MERGE1" is loaded by the computer then printed, then deleted from RAM. Then the next file, called, perhaps, "MERGE2" is loaded and printed, and so on. Of course, it is not necessary to use these file names. Files merged must be on the second (or only) mass storage device, or in RAM. They will not be found if stored on the HP82718 Expansion POD or Magnetic Cards. This program has

been tested with the HP82161A Cassette and 9114A Disc Drive, other mass storage devices supporting the same high level I/O standards should also be usable. If all files are in RAM, it is not necessary to have any mass storage plugged in.

The same general approach is used when recalling data from, and merging VisiCalc Worksheets. Recalling data from Worksheets requires the entire file to be in RAM. If, in addition to recalling data from one Worksheet, you also want to merge another, both files will be in RAM at the same time. If memory is at a premium, it might be a good idea to "unassign" the data Worksheet (which will mean it is deleted from RAM [if it was loaded]), then merge the second Worksheet.

At the extreme, it would be possible to have a main file, a Text file being merged, a Worksheet from which you are reading data, and a Worksheet which is being merged all in RAM at the same time. Planning and moderation are in order if you are doing an elaborate report. If the computer runs out of memory while trying to load a file that just won't fit, the program will stop, telling you the last line it read. Inspect that line, and those preceeding it to determine why you ran out of memory. To make sure everything will work, you might try a "dry run", this is explained later in "Getting Started".

About your printer

It is beyond the scope of this manual to include instructions for every printer. Unfortunately, as of this writing, there is little standardization commands used by printers of different manufacture. The examples shown assume that your printer has relatively few extra features, and prints 80 characters per line and 66 lines per page as it's default mode. There are commands you may enter in your Text file if your printer does not follow this standard.

Read your printer manual for codes to change type size, style and number of characters per line and page. There will probably be some sort of cryptic chart listing most of the commands. Often the commands are listed in "hexadecimal" format, The I/O ROM function "HTD" will convert the code to their decimal equivalent and you can find the appropriate key to press in the table on page 46 in the HP-75 Reference Manual.

Some printers use characters above 127 decimal for graphics. This may be to your advantage if you want to use those characters. For many uses, such as listing programs, it might be preferable to ignore these graphic characters. This can often be accomplished by telling your printer (and interface) to use only 7-bit data. With the HP-75, characters above 127 are displayed as the same character, minus 128, but underlined (inverse video).

This book was printed by an OKIDATA 82A printer with OK-WRITER (trademark, Rainbow Technology) add on circuit board. It is connected to the HP-75 with an HP82164A RS-232C/HP-IL Interface. The printer and Interface are set for 2400 baud and 7-bit characters. While this is probably a fairly esoteric combination for use with the HP-75, examples will use OKIDATA printer commands.

Printer Graphics Commands

Using Underlined or graphics characters may not respond as expected when they are continued on a second line. The problem is that when the computer indents to the left margin, it does so with spaces. Plan it so that your printer goes out of graphics mode at the end of each line, and reenters it after the margin has been printed. For this reason, copy mode is preferred when printing graphics. Graphics mode on your printer will probably interpret those spaces as the code 32. Usually, when you set a printer to underline, it will do so until instructed not to. This means that the spaces from the left of the page to the left margin will be underlined. An easy way out would be to make sure that all underlined in a series are on the same line.

Getting Started

VisiCalc and I/O ROMs must both be plugged into your HP-75 before running this program. Refer to the manuals supplied with those ROMs for their installation and use. Some understanding of HP-75 file structure is necessary for full use of this program. Please refer to your HP-75 Owner's Manual for a general overview. I would also like to refer you to the section titled "HP-75 File Structure" in the documentation for "ED", the Screen Editor program.

Load the program

The program is furnished on four magnetic cards. Make sure you have enough free memory for this program and the approximately 1000 bytes of memory it uses while it runs in addition to your other files. Enter:

copy card to "format"

Then press RTN.

Run it

If you have specified SHELL ON (I/O ROM function), you can then enter:

format

If the program is already in the computer or on the first (or only) mass storage device, you may also call it from the Screen Editor program using the menu function or command mode P.

After a short delay the program will ask you for the name of your Text file and printer. If the current edit file is a Text file, its name will be the default entry. If there is a printer assigned, its name will also be listed.

Enter the name of a Text file in RAM or on the second (or only) mass storage device. Also specify the printer. To "dry run" the file, that is, check it for number of pages, words or if you entered the commands correctly, type over the printer name with spaces and the program will read the file, any merge files, and all commands, but will not print it. You may specify a display, printer or other device as the printer. Please be sure that you use default AUTOLoop assignments (such as ":PI") and that whatever device you specify can accept the data. This program will not allow you to specify a mass storage device as the printer, but makes no other restrictions. If you press CLR the default values will return to the display. Pressing any terminator key other than RTN will cause the computer to do a CATAL; the arrow keys will be active, enter a file name to terminate the CATAL.

If you want to STOP

While the program runs there is little to do other than wish your printer could be a little faster (or quieter). If you watch the printout as it is progressing and see that it is doing something dreadful, press ATTN to suspend the program. If you have stopped the program in the middle of, for instance, several hundred linefeeds, and wish to quit it properly then enter:

CONT 9000

To stop it dead in its tracks and return from where you were (if, for instance, you called this program from ED) then enter:

CONT 9999

Normally the program will continue reading your file(s) then terminate properly. The above steps are only mentioned if you, for whatever reason, wish to terminate it while it is still working.

Finished

When the report is completed, the computer will display the number of words, number of pages, and the line number of the last line read. The word count includes any data separated by spaces. Two words separated by a hyphen or fixed space ("~") will be counted as one word. The date, entered with the ^DA function, counts as one word. Escape codes (^ec) and control codes (^cc) are not added to the word total. This program gives you the actual word count, not an approximation derived by dividing the number of characters by five or six.

If the entire report had not been printed, the last line that was read will be indicated as the line number. Edit that line and review commands or memory requirements it may have required to give you an indication of how to correct the error.

Formatter Command Summary

^AD (advance page)

Stops printing on the current line. Advances the paper to begin printing on the next page.

^CC (control code)

100 ^ccABC text...

Tells the computer to send the data following the command to the printer as printer control characters. These codes are assumed to be control codes that will not be printed and are therefore not added to line or word counts. All data up to the next space is interpreted as control codes. Any data or commands may follow the control codes on the same line if preceeded by a space.

^CE (Center on line)

100 ^ceThis line is centered on the line

Stops printing on the current line Prints all that follows centered on a line. Remains in effect until another mode command is used (^fi, ^co ^pa). The text is copied exactly as entered on the line, leading and trailing spaces are ignored. Commands are not allowed on the same line after the ^ce command, they would be interpreted as text and the commands ignored.

^CO (copy)

100 ^co This will be copied on one line

Stops printing on current line. copies all that follows on the line as written. Commands are not allowed on the same line following ^CO.

^DA (insert todays date)

Places the current date in the print out, does not place the date in the Text file. The month is spelled out completely, followed by the day and year in numerical form. The date uses fixed spaces so that it will always print complete on one line. 8/3/85 would be printed as:

August 03, 1985

^DL (distribution list)

1 ^pL66 6 6^dL distfile text...

Designates distribution list. Must be either the first command in the file or immediately follow ^PL. Only one distribution list is allowed. The file name is specified on the same line immediately following the command. The file does not have to be in RAM. If it is not in RAM, it will be loaded by this program as it runs, then purged when the program ends. The distribution list file is a Text file with each line containing related data, for instance:

1 LaFong Plumbing'123 Back St'Anaheim'CA'92802'Water Heaters'Carl LaFong
2 Bissenette Market'789 Side St'Philadelphia'PA'34567' Produce'Claude Bissenette

Notice that each field is separated by the accent grave (') character. This character may be entered by pressing [CTL] [7]. As with most commands, other data or command may follow ^DL if a space separates the following comands from the distribution list file name.

^EC (escape code)

100 ^echC text...

Sends following to the printer preceeded by the Escape character [CHR\$(27)]. The example the printer would receive ESC H and ESC C. With many (non-HP) printers, this will turn on the Bold and underlined print mode. One limitation is that you may not use ESC SPACE, as the space would indicate the end of the ^EC string. As with most of the commands, other commands or data may follow on the same line if separated from the ^EC string by a space.

^EF (end of file)

10 ^ef nothing else in the file will print

Designates the end of the file. Any data remaining after this statement is ignored. This command is not needed for general use, the program will stop of it's own accord when it reaches the end of the file. This command is useful if you wish to print just the beginning of the file. If it is encountered in a merged file then control will return to the original file.

^FI (fill mode)

10 ^fi text...

Causes a printing break. Prints subsequent lines with as many whole words on each line as will fit within the margins. The left border is flush, the right border is not. Any extra spaces between or following words are deleted. Each time a word is immediately followed by a period, comma or question mark (.,?) an extra space is inserted between it and the next word.

^JU (justify mode)

As with fill mode except spaces are added between words to make right border of the text a straight line. Will only add up to one space between each word, if a line requires a great number of fill spaces, it will not be justified. The last line in a paragraph is not right justified. These standards are followed to make printing as attractive as possible without having an excessive number of spaces in the line. Proportional spacing is not supported, you may set your printer for proportional characters, but this program will not do microspacing.

^MA (set margins)

10 ^ma10 70 text...

Set the margins to other than the default settings of 10 and 70. If you enter ^MA without parameters it is the same as ^SK0, there would be a printing break, but margins will not change.

^ME (merge file)

10 ^me filename this text will be printed before the merged file

Specify a Text file name. If other commands or data follow on the same line it must be separated from the file name by a space. Any data on the same line as the ^ME command will be read before beginning to read from the merged file. The program will suspend formatting the current text file and search for and merge data from a second file. Only one level of merge may be used. That is, you may not merge a file from a merged file. When the final data has been read the program will continue from the next line in the original text file. If the merged file is not in RAM, the program will search for it on either the second or only mass storage device then load it, and purge it from RAM when it is no longer needed. Be sure you have enough available memory for the merged text file.

^PA (paragraph)

10 ^pa5 text...

Causes a paragraph break. If center either copy or center mode was last in effect ^PA will change to fill mode. The default number of spaces to indent is 5. If you wish, you may change the number of spaces to indent to any practical number. Using ^PA without any number following assumes you wish to use the number of spaces last used. A negative number of spaces WILL NOT cause a negative paragraph indentation.

^PL (set page length)

1 ^pl 66 5 5 text...

The program will assume a page length of sixty six and top and bottom margins of six each. You may specify other settings by using the ^PL command at the beginning of the first line in the file. Once set, you cannot change the values later in the file. Use a negative number for page length if you are using a sheet fed printer and the computer will tell you when to insert paper. Using ^PL any other place in the file other than at the beginning of the first line will cause the program to stop printing.

^PN (page numbering)

Print page numbers.

^SK (skip number of lines)

10 ^sk1 text and commands...

Causes a printing break. The default value is 1 or the value last used with this command. ^SK0 means "skip zero lines", printing will halt on the current line and resume on the very next line.

^SP (spacing between lines)

10 ^sp1 text and commands...

Does not cause a printing break. The program assumes you want all lines single spaced. To change to double (or more) spacing use the command followed by, for instance, 2. There is no limit to the spacing imposed by the program, however, you will probably want to use a value of 5 or less. As with most commands, other data or commands may follow on the same line if separated by a space.

^TA (tab)

10 text ^ta40 text...

Does not cause a printing break unless the tab is to a position on the line which is already occupied. There is no default value, you must specify the number of spaces to indent the first time. The value last used is retained by the program. You may repeatedly tab to the same location on subsequent lines by entering the value on the first tab, then just specify ^TA on following lines:

```
10 ^sk0Hewlett-Packard      ^ta52Richard E. Harvey
20 ^sk 1000 N. E. Circle Blvd ^taBox 5695
30 ^skCorvallis, OR        ^taGlendale, AZ
40 ^sk^ta8 97330           ^ta60 85312
```

Notice that the values to skip and tab were both specified only once until it is necessary to change them.

VC (merge VisiCalc Worksheet)

10 ^vc {file name} {first col} {first row} {last col} {last row} {headers?}

One of the most powerful and, complex commands. Other commands and data may follow on the same line ONLY IF you supply ALL of the parameters required for this function. The file name must be specified. Other parameters are optional but must be entered in sequence if specified.

{file name}

Must be a VisiCalc Worksheet name. If the file is not in RAM the program will search for it on the second (or only) mass storage device found, and then purge it when done. It is not necessary to specify the Worksheet name using ^WS before using this function.

{First col}

The first column in the upper left corner you wish to print. You may specify user or default headers. User headers must be enclosed in [brackets] in either upper or lower case.

{first row}

This is the first row in the upper left corner to print. Again, user or default headers.

{last col}

This is the last column in the lower right. If you wish to print to the last column and either don't wish to enter the name, or don't remember it, specify 10 and the program will print just to the last column with data in it. It is not necessary to enter a value for this or any of the following parameters if you wish to print the whole Worksheet.

{last row}

Last row is the lower right cell you wish to print. To print the whole file you may specify 255 as the row and the program will print to the last row with data in it.

{headers?}

The default is to print the Worksheet including headers. If you do not want to print the headers use N. Remember, it is necessary to supply values for all of the parameters if you wish to enter the header suppress character, or have other commands or data on the same line.

^WS (specify active Worksheet)

10 ^ws wrksheet text and commands...

In order to use ^W\$ to recall data into your report it is necessary to first specify an active Worksheet. If you know that there will be a Worksheet active (such as if you had been using one with ED, the screen editor, and left it assigned) it is not necessary to specify the Worksheet. Worksheets specified that are not in RAM, will be loaded from either the second (or only) mass storage device. The Worksheet will be recalculated before any data is recalled so that you may have references to other Worksheets in RAM in the formulas and obtain current values. If you specify different Worksheets while this program runs and they are from mass storage then the previous one will be purged from RAM before the next one is assigned. Data or commands may follow on the same line if separated by a space.

^W\$ (recall value from Worksheet)

10 ^w\$ [col] [row] text and commands...

Specific cell contents may recalled from an active worksheet by specifying first the column then row coordinate of that cell. You may specify user or default headers. User headers must be enclosed in [brackets]. Labels are recalled as written. Numbers and results of formulas are recalled as formatted in the Worksheet.

^-- (fill line with repeating characters)

10 ^-- * text and commands...

Causes a printing break. Accepts any parameter you specify up to the width of one printed line (in which case it wouldn't repeat at all). If no parameter follows the program will print a full line of dashes "-". You may specify a repeating string. To embed spaces in your string use the fixed space character "~". A space designates the end of your repeating pattern. Any data or command may follow on the same line.

DIFFERENCES FROM THE H-P TEXT FORMATTER

The formatter program is, in general, compatible with Text files written for the Hewlett-Packard Text Formatter ROM. A few functions are interpreted differently and a number of new functions are recognized by this program.

^SL (slide) This is a plotter character set function from the H-P program. It is not supported. If you wish to send plotter control codes use the **^cc** (control code) function.

^PL must be the first data in the file, if you wish to change from the default settings.

^DL must either be the first data in the file or immediately follow **^PL**. The field delimiter is always the **"**, do not specify a new character. **^DL** does not have to be the last data on the line, however, the file name specified must be followed by a space if any other data is on the line. You may specify any number of fields in your distribution list, and each line may be up to 255 characters long. The HP program is limited to 9 fields and 96 characters.

^PA may not use a negative value.

If you do not specify margin settings they will be set at 10 and 70. The HP program has default settings of 13 and 72.

Only one level of merge file may be used. The H-P program supports up to 5 levels. This is not practical for our use because of the way this program can chain files from mass storage.

The program does not support printing multiple identical copies of the same file. The second field in the prompt when the program runs is the name of the printer device.

ENHANCEMENTS

This program has a number of new functions added. They primarily deal with interaction with VisiCalc, and using printer control codes. Commands may be anywhere in the line if preceded by a space or another command. Any files you specify or are referenced by your Text file will be loaded into the computer from either the second or only mass storage device found. You may test a file for possible command errors or number of pages by specifying no printer at all. When the program ends you will be shown a fairly accurate word count which does not include control codes in the total.