BIBLIOT.

1

Biblioteca programmi per lo SPECTRUM - RACCOLTA 1 -

Titolo	Tipo	Nome	Note	Giri
1 ULTRAVIOLET	progr bytes bytes progr	"uvloader" "uv16k" "uv16k" "uv48k"	ut.	0 - 28
2 INFRARED	progr bytes bytes progr	"irloader" "ir16k" "ir16k" "ir48k"	ut.	28 - 57
3 OTHELLO	progr bytes bytes	"OTHELLO" "MoISreen" "MoIOthello"	ab.	57 - 77
4 VU_FILE	progr bytes bytes	"VU-FILE" "T" "C"	ut.	77 89
6 VU-CALC	progr progr bytes bytes	"vuCalc" "VUCALC" "T" "C"	ut.	117 142
5 ARCADIA	progr bytes bytes bytes	"loader" "0" "1" "2"	ab.	89 117
7 BATTLE OF BRITAIN	progr bytes	"B" "MAP"	ab.	142 176
8 FLIGHT SIMULATION	progr progr bytes bytes	"FLIGHT" "flight" "d" "e"	az.	176 231
9 SUPER COMPILER esempi	progr bytes bytes progr	"SUPERC" "1" "2" DEMO 1,2,3	ut.	

Titolo	Tipo	Nome	Note	
10 BACKGAMMON	progr bytes bytes	"backgammon" "mc1" "mc2"	ab.	
11 SUPERCHESS	bytes	"superchess"	ab.	
12 INTEGER COMPILER	progr bytes	"COMPILER" "COMPILER"	ut.	
13 HOBBIT	progr bytes bytes	"hobbit" "p" "h"	ab/az	
14 TIME GATE	bytes bytes	"MANUAL" "TIME-GATE"	az.	
15 GROUND ATTACK	progr bytes	"GROUND" "ATTACK"	az.	
16 3D TANX	bytes	"TANX"	az.	
17 HUNGRY HORACE	progr progr bytes bytes	"HORACE" "horace" "T" "C"	az.	
18 ORBITER	bytes	"ORBITER"	ut.	
19 3D TUNNEL	progr bytes	"TUNNEL" "TUNNEL"	az.	
20 SPECTRES	progr bytes bytes bytes	"SPECTRES" "0" "1" "2"	az.	
21 PLANETOIDS	progr bytes bytes	"PLANETOIDS" "T" "d"	az.	
22 SPECCHESS	progr bytes	"SpecChess" "chess"	ab.	
23 PENETRATOR	progr bytes bytes	"penetrator" "s" "p"	az.	

Titolo	Tipo	Nome	Note	Giri
24 ELECTRONICS	progr	"cct"	ut.	
25 SPEAKEASY	progr bytes	"SPEAKEASY" "code"	ut.	
26 GALAXIANS	bytes	"Galaxians"	ab.	
27 DLAN	progr bytes bytes	"DLAN" "DLAN16K" "DLAN48K"	ut.	
28 BLACK CRISTAL	progr progr progr progr progr	"map1" "map2" "map4" "map5" "map6"	az.	
29 HORACE GO SKIING	progr progr bytes bytes bytes	"SKIING" "skiing" "s" "c" "m"	az.	
30 NIGHT FLIGHT	progr bytes	"NIGHTFLIGHT" "NIGHTFLIGHT"	ab.	
31 METEROIDS	progr bytes bytes bytes	"SOFTEK@" "softek$" "METEOROIDS" "METEOROIDS"	az.	
32 STAR TRAIL	progr	"s"	ab.	

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Titolo	Tipo	Nome	Note	
10 BACKGAMMON	progr bytes bytes	"backgammon" "mc1" "mc2"	ab.	
11 SUPERCHESS	bytes	"superchess"	ab.	LOAD "" CODE
12 INTEGER COMPILER	progr bytes	"COMPILER" "COMPILER"	ut.	
13 HOBBIT	progr bytes bytes	"hobbit" "p" "h"	ab/az	
14 TIME GATE	bytes bytes	"MANUAL" "TIME-GATE"	az.	
15 GROUND ATTACK	progr bytes	"GROUND" "ATTACK"	az.	
16 3D TANX	bytes	"TANX"	az.	
17 HUNGRY HORACE	progr progr bytes bytes	"HORACE" "horace" "T" "C"	az.	
18 ORBITER	bytes	"ORBITER"	ut.	
19 3D TUNNEL	progr bytes	"TUNNEL" "TUNNEL"	az.	
20 SPECTRES	progr bytes bytes bytes	"SPECTRES" "0" "1" "2"	az.	
21 PLANETOIDS	progr bytes bytes	"PLANETOIDS" "T" "d"	az.	
22 SPECCHESS	progr bytes	"SpecChess" "chess"	ab.	
23 PENETRATOR	progr bytes bytes	"penetrator" "s" "p"	az.	

Titolo	Tipo	Nome	Note	Giri
24 ELECTRONICS	progr	"cct"	ut.	
25 SPEAKEASY	progr bytes	"SPEAKEASY" "code"	ut.	
26 GALAXIANS	bytes	"Galaxians"	ab.	
27 DLAN	progr bytes bytes	"DLAN" "DLAN16K" "DLAN48K"	ut.	
28 BLACK CRISTAL	progr progr progr progr progr	"map1" "map2" "map4" "map5" "map6"	az.	
29 HORACE GO SKIING	progr progr bytes bytes bytes	"SKIING" "skiing" "s" "c" "m"	az.	
30 NIGHT FLITE	progr bytes	"NIGHTFLIGHT" "NIGHTFLIGHT"	ab.	
31 METEROIDS	progr bytes bytes bytes	"SOFTEK@" "softek$" "METEOROIDS" "METEOROIDS"	az.	
32 STAR TRAIL	progr	"s"	ab.	

(GAZZETTINO Nº 1)

THE KEY

ISTRUZIONI PER L'USO

DOPO IL CARICAMENTO, APPARIRÀ LA SCRITTA

"INSERT TAPE TO COPY - PRESS A KEY"

INSERIRE IL NASTRO DA COPIARE E PREMERE UN TASTO. APPARIRÀ

"START TAPE - PRESS A KEY"

ESEGUITO CIÒ, VERRÀ CARICATO IL PRIMO FILE ~~[illegible]~~ INCONTRATO SUL NASTRO. ALLA FINE DEL CARICAMENTO, APPARIRÀ

"ANYMORE DATA (Y/N)?" (APPARE TUTTE LE VOLTE CHE HA CARICATO UN FILE)

SE IL PROGRAMMA È COMPOSTO DA PIÙ FILE, OCCORRE PREMERE IL TASTO Y OGNI VOLTA CHE STA PER INIZIARE IL ~~[illegible]~~ NUOVO FILE.

DOPO CHE È STATO CARICATO L'ULTIMO FILE DEL PROGRAMMA DA ~~[illegible]~~ COPIARE, RISPONDERE "N" ALLA DOMANDA SOPRACITATA.

A QUESTO PUNTO APPARIRÀ

"INSERT BLANK TAPE - PRESS KEY Y"

INSERIRE E FARE PARTIRE (IN REGISTRAZIONE) IL NASTRO DOVE VA COPIATO IL PROGRAMMA, POI PREMERE "Y".

IL PROGRAMMA VERRÀ SALVATO CON TUTTI I SUOI FILE, CHE VENGONO SCARICATI UNO DOPO L'ALTRO SENZA INTERVENTO UMANO.

ALLA FINE DEL SALVATAGGIO VIENE CHIESTO SE CI SONO ALTRI PROGRAMMI DA COPIARE, E SI PUÒ RICOMINCIARE.

N.B. NON SI POSSONO COPIARE I PROGRAMMI SENZA HEADER (usare la tecnica del "falsi header"

NB IN CASO DI ERRORE, (SEGNALATO DAL "THE KEY") VENGONO PERSI I FILE GIÀ CARICATI

When this part of the program is executed, it rewrites the program to give

....;Johnny;ld hl, (30000);....

Note that only +1 and +2 are allowed in this type of label reference.

Explicit reference to labels

Sometimes, particularly if you have a 16K Spectrum, you might want to write a machine code program in several sections and then join them together later. This is fine if you do not try to refer to labels outside the section of code that you are currently writing. If you do, then the label will not be found and an error will occur. You can get round this problem by using equ which tells the assembler the address of a label. For example equ 23780 Fred will allow the label "Fred" to be used even though the address of "Fred" is not within the section of code being assembled.

A final word on labels. The assembler stores the names and addresses of labels in a table. The space allocated for this table is limited. When it is used up, no more labels will be recognised and reference to further labels will give an error. The number of labels that you can use clearly depends on their length. You can have about 100 5-character labels but fewer longer ones, so be frugal and concise!

Comments

Comments can be included in your programs by preceding them with an exclamation mark. During assembly, the first 32 characters of a comment will appear on the screen or printer. If you want to say more, use several consecutive comments.

Running the assembler

The 48K version of the assembler is run with RANDOMIZE USR 60000 (RANDOMIZE USR 27500 for the 16K version). This statement can be added to the REM statements so that assembly can be simply started with RUN. In this case a typical listing might look like this:

```
10 REM --------space for machine code--------
20 REM go
30 REM org 23760 (54321);equ 30000 Other
40 REM !Start of first section
50 REM Start;ld hl,(Other);inc hl;ld a,(hl);cp 240;jr z,-6
60 REM sub 34;ret z,;ld hl,(Start+1);dec hl;ld (Start+1),hl
70 REM jr Start
80 REM !Start of second section
90 REM org 21000
100 REM defs This is text;ld hl,31000;ld a,(hl);cp 84;ret nz
110 REM rst 8;defs 10
120 REM !End of 2 useless sections
130 REM finish
140 RANDOMIZE USR 60000   or   RANDOMIZE USR 27500
```

When run, the assembly address of each instruction, its hex code (!) and the first 13 characters of the mnemonic will appear on the screen. Each instruction is assembled twice so that the destination addresses of forward jumps can be calculated. Assembly stops when the screen is full. Pressing the space key will abort the assembly, pressing "p" during the second pass will copy the listing to the printer and pressing any other key will continue the assembly.

Errors

If go, finish or org are faulty, then an error will be given before assembly starts. If an error is detected during assembly, then assembly will stop with two error messages. The first is a flashing error message which tells you the line number, statement number and type of the instruction where the error was detected. This should let you locate the offender quite easily. The second error message is one of the Sinclair messages. There are three possible. If you enter a wrong number, i.e. >255 for a single byte or >65535 for a 2-byte number, the assembler will repeatedly subtract either 256 or 65536 from it until it gets a sensible number that it can use. If it can not get a sensible result (e.g. >129 for a relative jump) then error "B Integer out of range" will be given. If you refer to a label which does not exist or if you have filled up the label table, the error given will be "2 Variable not found". All other errors (e.g. mistyped instructions) will give the error "Q Parameter error". Note that in certain rare cases the assembler will correct you. For example ld r,8 will be assembled as ld r,a since this is the only instruction of this type in the instruction set. However, do not regard the assembler as infallible and be sure to put the semicolons in the correct places. If you have any problems or need any advice, please contact ACS Software.

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Registered No. 2735401

Prop. C. A. Booth Consultants A. G. Booth B.Sc., Ph.D., A. J. Bleasby B.Sc.

ULTRAVIOLET

Ultraviolet is a 2-pass assembler written specially for the Sinclair ZX Spectrum. It is supplied in two different versions for use in either 16K or 48K machines. Please make sure that you are using the correct version for your machine. The 48K version of Ultraviolet can be used at the same time as the 48K version of Infrared, the complementary disassembler program from ACS Software. In this case, please note that Ultraviolet should be loaded before Infrared.

To load Ultraviolet, simply use LOAD "". (The 16K version loads in three sections, so be patient.) To prepare the assembler for use, press any key to clear the screen and low memory. The assembler will remain in high memory ready for use. It is not possible here to provide an account of how to program in Z80 machine code. If you want to learn, we would suggest that you acquire a copy of "Understanding Your ZX81 ROM" by Dr. Ian Logan, published by Melbourne House Publishers Ltd.

Writing machine code programs with Ultraviolet

To use Ultraviolet, first reserve space for the machine code that it will produce. This is probably best done by putting a dummy REM statement at the beginning of the program. The REM statement should contain enough space to take the machine code. In this case, the first address available to accept machine code will normally be 23760. Normal Z80 mnemonics are recognised written in REM statements in *lower case* exactly as they appear in the back of the Sinclair ZX Spectrum BASIC programming book. The exception is that ret c, ret p, ret m and ret z must always be followed by a comma. When using relative jumps, the direction must be indicated with a sign e.g. jr –3 or jr nc,+7. Note that all numbers are entered as decimal, so use for example rst 16 rather than rst 10h. (True hex enthusiasts may frown at this, but we believe that if humans want to use decimal, then they should not be forced to use hexadecimal simply to make life easier for a computer. Don't worry though, the assembler will list the hex code for you!) The mnemonics should be preceded by "REM go" and terminated by "REM finish". The first instruction should be the pseudo-instruction org (see below). Apart from the go and finish statements which should be on separate lines, multiple statements per line are allowed provided that they are separated by semicolons.

Remember when writing the mnemonics that the positions of the commas, spaces and brackets are very important. For example, out (255),a will be recognised correctly, but out(255),a or out(255)a will not. (In this respect note that some of the mnemonics listed at the back of the Sinclair ZX81 BASIC book are incorrect so make sure that you are using the Spectrum book.)

The pseudo-instructions

Ultraviolet supports certain instructions which, although not official Z80 instructions can be included in machine code programs to make life a bit easier. They are listed here:

org This instruction tells the assembler where to start assembling code. For example, org 23760 will initiate assembly at the first free byte in your REM statement at the top of your program. For obvious reasons the first instruction in your program must be an org. You can use org as often as you like to make the assembler skip to a new assembly address. Sometimes you might want to write a program which is designed to operate in the region of memory around address 60000 (or around address 30000 in the 16K Spectrum). This could present a problem because this is where the assembler itself lives. Assembling code here would overwrite the assembler and probably cause a crash. You can get round this problem by using a special form of org. If you were to write org 23760 (60000) this would result in code being assembled at 23760 but written so that it would operate correctly when relocated to 60000. All you need to do now is to use the Spectrum SAVE "" CODE 23760,x and LOAD "" CODE 60000,x facility to relocate the code (or better still use ldir). Once again, remember that the spaces and brackets are important.

defb This allows a byte at the current assembly address to be set to a defined value. This can be useful when forcing an error message with rst 8. For example rst 8;defb 1 will give the error message "2 Variable not found".

defw This is similar to defb but sets a word (2 bytes) rather than a single byte. Its argument is therefore a number between 0 and 65535. The number is inserted into memory least significant byte first.

defs This allows a string of ASCII characters to be inserted into memory at the current assembly position. For example the name of this program could be stored with defs Ultraviolet. This can be useful for storing text within a program.

equ This is used for specifying labels and for linking sections of code together (see below).

Labels

Labels can be used to refer to memory locations whose addresses will not be known until assembly is complete. Labels can be any length with the following restrictions: the first character must be a capital letter and the characters ")" and "+" must not be used. For example, "Here", "Any-where" and "Z3/@$(" are valid labels but "this label", "Place(2)" and "Local+1" are not. The labels are simply written into the program like any other instruction. Suppose you had the label "AcS". This can be referred to in the following ways:

ld a,(AcS);ld hl,(AcS); ld hl,AcS;ld de, AcS;call AcS;jp nz,AcS;jr c,AcS etc.

Writing self-modifying code

Suppose that you have the following piece of code:

....;Johnny;ld hl,(23700);....

You might want your program to alter the address from which hl is loaded. In other words you might want to change the two bytes in memory one byte after "Johnny". This can be done with the following code:

....ld hl,30000;ld (Johnny+1),hl;.....

INFRARED

Infrared is a disassembler program written specially for the Sinclair ZX Spectrum. It 'gives' full Z80 mnemonics (the exception being that [illegible] destination address is given rather than the displacement). Infrared is supplied [illegible] two different versions for use in either 16K or 48K machines. [illegible] you are using the correct version for your machine. If you have a 48K Spectrum and Ultraviolet, the complementary assembler program from ACS, [illegible] have both Infrared and Ultraviolet in memory [illegible] Ultraviolet is loaded first.

To load Infrared use load "" the 16K version [illegible] patient. When loading is complete, clear the screen [illegible] any key). The disassembler remains in the memory [illegible] RANDOMIZE USR 54000 for the 48K version or RANDOMIZE USR 24000 for the 16K version. This will produce the prompt STARTING ADDRESS and the address from which disassembly is to start should be input in decimal. [illegible] typing in the address, do not use delete [illegible] instructions. Starting at this address [illegible] disassembled listing takes the form of the decimal address [illegible] instruction, followed by the machine code in hexadecimal [illegible] characters of the appropriate mnemonic. After [illegible] been given, the program awaits a command. [illegible]

C – continue disassembly [illegible]

P – copy listing to the printer [illegible]

Infrared occupies about 6000 bytes [illegible]

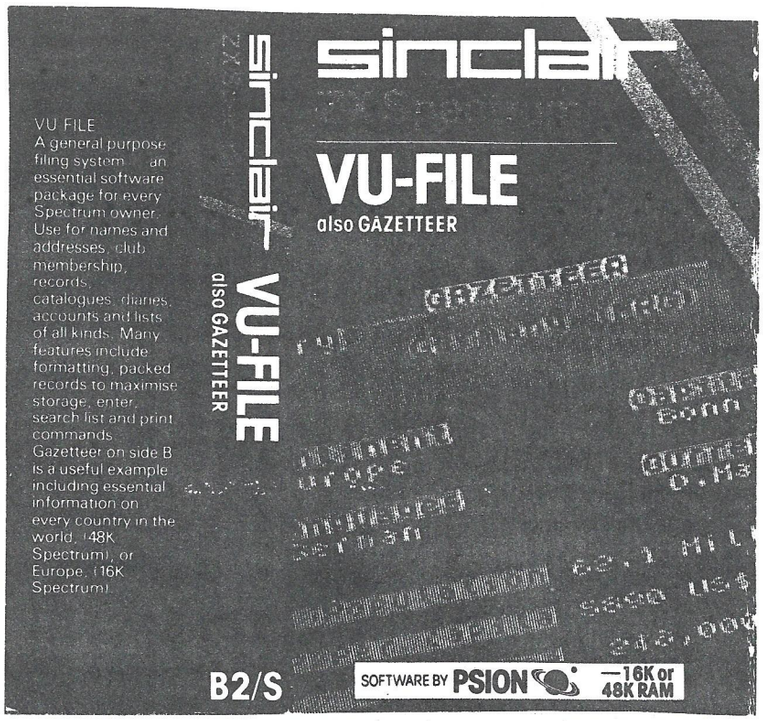
need to use SAVE "CODE" and LOAD "CODE" [illegible] code into a REM statement which [illegible]

Please note: All programs from ACS [illegible] high and low memory format. Copyright [illegible] duct of ACS Software and programs are sold [illegible] that these are merely copies of the written [illegible] by the original copyright. No program may [illegible] produced whole or in part in any way without [illegible] Software. Acceptance of the cassettes [illegible] the acceptance of these conditions.

ACS SOFTWARE

ACS

Prop: C. A. Booth [illegible]



Sinclair ZX Spectrum

with 16K or 48K RAM

VU-FILE

from PSION

Load and Run by typing LOAD "VU-FILE"

At both home and work we continually use lists, card indices, filing cabinets etc. to store in an ordered manner repetitive data for all kinds of information. In the home this includes address books, lists of members of clubs or societies that we may belong to, dictionaries, encyclopedias, etc. At work, schools, colleges, businesses and particularly government departments have numerous filing cabinets and card indices for all manner of information.

VU-FILE is a computer program for the electronic storage of lists or files based on the Spectrum. The advantage of a computer for doing this is not only that the information can be stored easily and compactly, but particularly that the computer is very powerful in ordering, sequencing, searching, finding and listing such files.

The file consists of a collection or lists of "**records**" where each record may contain various items of information. Each item of information on a record is called a "**data-field**". VU-FILE allows you to lay out or format the standard record of a particular file in a manner of your own choosing. Each record will appear as one page on the screen and you may have as many data-fields in each record as is consistent with your lay-out on the screen. After laying out or formatting the record a whole series of commands allows you to

develop the file and interrogate it. In addition you can save the file permanently on your own cassettes and retrieve it from the cassette for subsequent use.

Throughout VU-FILE you will find the command or information heading in the top four lines of the screen. This heading continually prompts you as to what to do next and in addition tells you the present command under which you are acting. The rest of the screen always shows the general or current record.

After loading the program from a virgin or original cassette, the program will automatically enter record formatting. Otherwise the main menu will appear.

Formatting a Record

VU-FILE is a general purpose computer file. In the initial option of RECORD LAY OUT, the user may lay out or format standard headings, titles, colour etc. to format the general record as he wishes.

On entering, a red cursor square will be situated in the top left-hand corner of the record. The keyboard may be used as a simple typewriter to enter standard titles and headings. In addition the cursor may be moved more rapidly around the screen with the aid of the arrow keys. Only information which is fixed or repeated on every record should be entered at this stage. The colour for paper and ink can be varied throughout the record layout by pressing "EDIT", (caps shift with key "I"). The current attributes will be displayed and may be altered. When the standard information has been entered the user may exit from this mode with the "STOP" command (shift A).

After exiting from the RECORD LAY OUT mode the program will immediately enter a new mode called DATA-FIELDS. A new command heading will appear at the top of the screen. The mode allows the user to define the position on the record where he wishes to place variable information items. For example, if a file was being created for names and addresses each record

might show the word "NAME:" followed by the particular name say "BROWN JOHN" of a particular record. The letters "NAME:" would have been entered in the record lay out mode and are fixed on every record. The letters "BROWN JOHN" are a "data-field" and vary from one record to another. The user must specify the position on the record where the data-field (e.g. "BROWN JOHN") is to appear, namely after "NAME:". Move the cursor square with the arrow keys to a position immediately after "NAME:" and press ENTER at the correct position. You will be asked to define the paper and ink colours for that field.
The position of the data field will now be marked with a ? Continue to define the position of each data-field you require on the record. Press the command "STOP" to exit.

VU-FILE Commands

After exiting from this mode the programme will automatically enter the main VU-FILE command point (option 2 from the main menu). The main commands available to the user are ENTER, ALTER, INFORM, FORWARD, BACK, RESET, ORDER, SELECT, QUIT, LIST, PRINT, COPY, DELETE. If the file is empty, the ENTER command will automatically be effected.

Most of these commands are self-explanatory and can be implemented from any point of VU-FILE (under option 2) by typing the first letter of each command.

Entering, Deleting and Altering Records

From the command point press key "E" to enter a new record to the file. The screen will show a blank record with the standard titles and headings which have been entered previously. The red cursor box will be situated at the position for the first data-field. You may now simply enter the information for the field and for the record that you require. In the example included on side B of the cassette "Gazetteer" the first item of fixed

information on every record is the word "COUNTRY" and the first data-field following this is the particular country which varies of course, from record to record, for example Afghanistan, Albania etc. If you were entering this as a record you would now type in Afghanistan followed by "ENTER". The cursor will then automatically move to the start of the next data-field for you to type in the next item of information. When you have entered the information for every item on a record, the display will automatically bring up a new blank record. You may continue to enter by this means as many records as you wish. If however you have completed the new records you require, press the key "STOP" to exit to the main command point.

A record may be deleted by finding and displaying the particular record followed by the command "D" for DELETE. The information on a record may be changed with the aid of the ALTER command. First find the record which you wish to change and press "A" for ALTER. The record will be shown with the red cursor box situated at the beginning of the first data-field. If you wish to change this item of information simply type in the new information followed by "ENTER". The new information will be recorded and the cursor will automatically move to the next data-field. If you do not wish to change the information of a particular item press the key "↓" (SHIFT – 6). After all items on the record have been dealt with the user is returned to the main command heading.

Ordering, Listing and Printing the Records

The whole file may be listed or printed in a number of different sequences which the user may define. The particular sequencing required is defined through the command ORDER. The order of the whole file can be defined by the leading alphanumeric characters of any particular data-field. Ordering or sorting is according to the first character of a data-field which, if t· same for two or more records, will be followed by the second

character etc. Precedence is given to numbers over alphabetic letters (strictly speaking precedence is given by the character code, see page 183 of the Spectrum manual).

After pressing the key "O" for ORDER the command heading will change asking the user to define the data-field for the particular ordering required. This is achieved by moving the cursor red square by pressing any key to the data-field required. When the correct data-field is identified press the key ENTER and the program will return to the main command heading. If the user has not defined a particular data-field through the ORDER command, ordering will automatically be carried out according to the first data-field.

The commands, RESET, FORWARD, BACK, LIST AND PRINT are all affected by the order. The command "R" for RESET will bring up the first record of the file. "F" for FORWARD will step forward from the present record to the next record. "B" for BACK will step backwards one record. The command "L" for LIST will list all the records of the file from the current record and according to order with each record displayed for a short time for the user to observe. The listing can be frozen at any record by pressing any key. To continue listing thereafter simply press "L". To list the whole file it is of course necessary to RESET the file to the first record.

The "PRINT" command operates similarly to LIST except that the records are printed out on the printer as opposed to being displayed on the screen. Press "P" for PRINT. To stop the printing at any stage simply press any key. As opposed to printing out the whole file or part of the file a particular record may be printed with the COPY command. Press "C" to COPY the current record display.

Selection and Data Processing

One of the most powerful features of VU-FILE is the ability to pick out, find or select a particular record or a

particular set of records as opposed to the complete file. This is achieved by the "SELECT" command. From the main command heading press "S" for SELECT and the command heading will change to ask the user to pick out a particular data-field to which the SELECT is to apply. If the SELECT is to apply to any field press "ENTER", otherwise press any key to move the cursor automatically to the data-field required and then press "ENTER".

The picking out or finding of a particular set of records is then carried out by comparing the data-fields with a "string" of characters which the user defines.

Having defined the appropriate data-field the command box will change to allow the user to return to the main commands and leave the character string selected for all subsequent operations of LIST, PRINT, FORWARD, BACK or RESET. This enables the user to carry out simple data-processing. For example, in GAZETTEER (example side B) if the user were interested in all Spanish-speaking countries of the world he could use the select option to define the "languages" data-field followed by the string select "SPANISH". If he then returns to the main command heading and enters "L" for LIST a list will immediately be shown of all Spanish-speaking countries.

Searching for or Finding Particular Records.

In many applications the user may wish to use the file like a card index. For example, if the file consists of a set of names addresses, telephone numbers, accounts and other possible business information, the user can load the file from cassette in the morning and leave it stored on his machine throughout the working day. In response to a telephone call or enquiry the record for that person or company can immediately be obtained by simply typing in a few characters from the name. This provides an immediate and powerful indexing system.

The search mode is obtained from the main command point by typing "S" for SELECT to select the

required data-field as before. After pressing ENTER the search mode command box will appear at the top of the screen. Different records can now immediately be accessed by simply entering an appropriate character string followed by ENTER. By this means individual records can be found efficiently.

Inform and Quit

Information on the status of the file can always be obtained by pressing the key "I" for INFORM.

This information includes the number of data-fields in each record, the number of records in the file, the current ordering being used and the extent in which the file is full. To return to the main command point press any key.

To return to the main menu to save the file press the "Q" for "QUIT". In may cases it may be necessary to format the file for printer output in a different way from the record format on the screen. This is to avoid using an excessive amount of printer paper. To format records for the printer enter the option 3 from the main menu when you will be asked to lay out the record for the printer in a manner precisely the same as for the record lay out on the screen. You can achieve this more compactly through option 3.

SIDE B: GAZETTEER

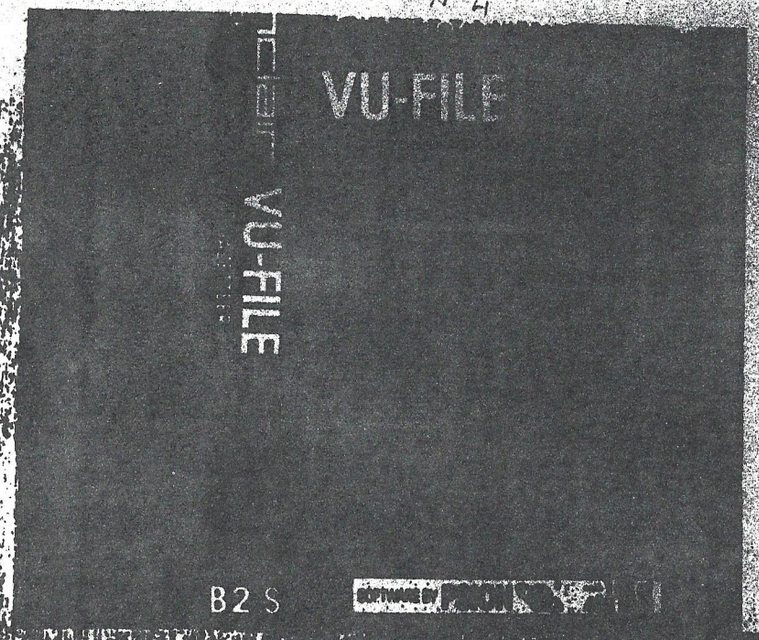
Run by typing LOAD "GAZETTEER"

"GAZETTEER" is an example of the application of VU-FILE. The word GAZETTEER means a geographical dictionary and the file GAZETTEER is a file of records for every country in Europe. (16K Spectrum), or in the world, (48K Spectrum), giving the name of the country, the capital city in that country, the main language spoken, the currency used and other information. This file can be interrogated and manipulated with all the commands of VU-FILE.

SUMMARY OF COMMANDS FOR VU-FILE

- A – Alter the current record
- B – Move backwards one record
- C – Copy the current record to the printer
- D – Delete the current record
- E – Enter a new record
- F – Move forward one record from the current record
- I – Information on all parameters of the file
- L – List all the records in the file from the current record to the last record
- O – Order the file
- P – Print the file on the printer
- Q – Quit VU-FILE to return to the main menu
- R – Re-set the current record to the 1st record in the file
- S – Select a data-field for searching for a record by a character string.

Made in U.K.



VU-FILE

from PSION '85

Load and Run by typing LOAD "VU-FILE"

At both home and work we continually use lists, card indexes, filing cabinets etc. to store in an ordered manner, readily accessible for all kinds of information. In the home this includes address books, lists of addresses of friends or relatives that we may belong to, recipes, holiday information, etc. At work, schools, colleges, businesses and particularly government departments have numerous filing cabinets and card indexes for all manner of information.

VU-FILE is a computer program for the electronic storage of lists or files based on the Spectrum. The advantage of a computer for doing this is not only that the information can be stored easily and compactly, but particularly that the computer is very powerful in ordering, sequencing, searching, finding and listing such files.

The file consists of a collection or list of "records", where each record may contain various items of information. Each item of information on a record is called a "data-field". VU-FILE allows you to lay out or format the standard record of a particular file in a manner of your own choosing. Each record will appear as one page on the screen and you may have as many data-fields in each record as in conjunction with your layout on the screen. After laying out or formatting the record a whole series of commands allows you to

information heading in the top four lines of the screen. The heading continually prompts you as to what to do next and in addition tells you the present command under which you are acting. The rest of the screen always shows the general or current record.

After loading the program from a virgin or original cassette, choose the option to enter a new file.

Formatting a Record

VU-FILE is a general purpose computer file. In the initial option of RECORD LAY OUT, the user may lay out or format standard headings, sizes, colour etc. to format the general record as he wishes.

On entering, a red cursor square will be situated in the top left-hand corner of the record. The keyboard may be used as a simple typewriter to enter standard sizes and headings. In addition the cursor may be moved more rapidly around the screen with the aid of the arrow keys. Only information which is fixed or repeated on every record should be entered at this stage. The colour for paper and ink can be varied throughout the record layout by pressing "EDIT", (caps shift with key "1"). The current attributes will be displayed and may be altered. When the standard information has been entered the user may exit from this mode with the "STOP" command (shift A).

After exiting from the RECORD LAY OUT mode the program will immediately enter a new mode called DATA-FIELDS. A new command heading will appear at the top of the screen. The mode allows the user to define the position on the record where he wishes to place variable information items. For example, if a file was being created for names and addresses each record

record. The items SHOWN JOHN are a data-field and vary from one record to another. The user must specify the position on the record where the data-field (e.g. "SHOWN JOHN") is to appear, namely after "NAME:". Move the cursor square with the arrow keys to a position immediately after "NAME:" and press ENTER at the correct position. You will be asked to define the paper and ink colours for that field.

The position of the data field will now be marked with a >. Continue to define the position of each data-field you require on the record. Press the command "STOP" to exit.

VU-FILE Commands

After exiting from this mode the program will automatically enter the main VU-FILE command point (option 1 from the main menu). The main commands available to the user are ENTER, ALTER, INFORM, FORWARD, BACK, RESET, ORDER, SELECT, QUIT, LIST, PRINT, COPY, DELETE. If the file is empty, the ENTER command will automatically be affected.

Most of these commands are self-explanatory and can be implemented from any point of VU-FILE (under option 1) by typing the first letter of each command.

Entering, Deleting and Altering Records

From the command point press key "E" to enter a new record to the file. The screen will show a blank record with the standard sizes and headings which have been entered previously. The red cursor box will be situated at the position for the first data-field. You may now simply enter the information for the field and for the record that you require. In the example included on side B of the cassette "Gazetteer" the first item of fixed

Information on every record is the word "COUNTRY" and the first data-field following this is the particular country which varies of course, from record to record, for example Afghanistan, Albania etc. If you were entering this as a record you would now type in Afghanistan followed by "ENTER". The cursor will then automatically move to the start of the next data-field for you to type in the next item of information. When you have entered the information for every item on a record, the display will automatically bring up a new blank record. You may continue to enter by this means as many records as you wish. If however you have completed the new records you require, press the key "STOP" to exit to the main command point.

A record may be deleted by finding and displaying the particular record followed by the command "D" for DELETE. The information on a record may be changed with the aid of the ALTER command. First find the record which you wish to change and press "A" for ALTER. The record will be shown with the red cursor box situated at the beginning of the first data-field. If you wish to change this item of information simply type in the new information followed by "ENTER". The new information will be recorded and the cursor will automatically move to the next data-field. If you do not wish to change the information of a particular item press the key "¬" (SHIFT – 0). After all items on the record have been dealt with the user is returned to the main command heading.

Ordering, Listing and Printing the Records

The whole file may be listed or printed in a number of different sequences which the user may define. The particular sequencing required is defined through the command ORDER. The order of the whole file can be defined by the leading alphanumeric characters of any

character etc. Precedence is given to numbers over alphabetic letters (strictly speaking precedence is given by the character code, see page 169 of the Spectrum manual).

After pressing the key "O" for ORDER the command heading will change asking the user to define the data-field for the particular ordering required. This is achieved by moving the cursor red square by pressing any key to the data-field required. When the correct data-field is identified press the key ENTER and the program will return to the main command heading. If the user has not defined a particular data-field through the ORDER command, ordering will automatically be carried out according to the first data-field.

The commands, RESET, FORWARD, BACK, LIST AND PRINT are all affected by the order. The command "R" for RESET will bring up the first record of the file. "F" for FORWARD will step forward from the present record to the next record. "B" for BACK will step backwards one record. The command "L" for LIST will list all the records of the file from the current record and according to order with each record displayed for a short time for the user to observe. The listing can be frozen at any record by pressing any key. To continue listing thereafter simply press "L". To list the whole file it is of course necessary to RESET the file to the first record.

The "PRINT" command operates similarly to LIST except that the records are printed out on the printer as opposed to being displayed on the screen. Press "P" for PRINT. To stop the printing at any stage simply press any key. As opposed to printing out the whole file or part of the file a particular record may be printed with the COPY command. Press "C" to COPY the current record display.

particular set of records as opposed to the complete file. This is achieved by the "SELECT" command. From the main command heading press "S" for SELECT and the command heading will change to ask the user to pick out a particular data-field to which the SELECT is to apply. If the SELECT is to apply to any field press "ENTER", otherwise press any key to move the cursor automatically to the data-field required and then press "ENTER".

The picking out or finding of a particular set of records is then carried out by comparing the data-fields with a "string" of characters which the user defines.

Having defined the appropriate data-field the command box will change to allow the user to return to the main commands and leave the character string selected for all subsequent operations of LIST, PRINT, FORWARD, BACK or RESET. This enables the user to carry out simple data-processing. For example, in GAZETTEER (example side B) if the user were interested in all Spanish-speaking countries of the world he could use the select option to define the "language" data-field followed by the string select "SPANISH". If he then returns to the main command heading and enters "L" for LIST a list will immediately be shown of all Spanish-speaking countries.

Searching for or Finding Particular Records.

In many applications the user may wish to use the file like a card index. For example, if the file consists of a set of names addresses, telephone numbers, accounts and other possible business information, the user can load the file from cassette in the morning and leave it stored on his machine throughout the working day. In response to a telephone call or enquiry the record for that person or company can immediately be obtained by simply typing in a few characters from the name. This

required data-field as before. After pressing ENTER the search mode command box will appear at the top of the screen. Different records can now immediately be accessed by simply entering an appropriate character string followed by ENTER. By this means individual records can be found efficiently.

Inform and Quit

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This information includes the number of data-fields in each record, the number of records in the file, the current ordering being used and the extent in which the file is full. To return to the main command point press any key.

To return to the main menu to save the file press the "Q" for "QUIT". In may cases it may be necessary to format the file for printer output in a different way from the record format on the screen. This is to avoid using an excessive amount of printer paper. To format records for the printer enter the option 3 from the main menu when you will be asked to lay out the record for the printer in a manner probably the same as for the record lay out on the screen. You can achieve this more compactly through option 3.

SIDE B: GAZETTEER

Run by typing LOAD "GAZETTEER"

"GAZETTEER" is an example of the application of VU-FILE. The word GAZETTEER means a geographical dictionary and the file GAZETTEER is a file of records for every country in Europe. (16K Spectrum), or in the world, (48K Spectrum), giving the name of the country, the capital city in that country, the main language

SUMMARY OF COMMANDS FOR VU-FILE

- A – Alter the current record
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- Q – Quit VU-FILE to return to the main menu
- R – Re-set the current record to the 1st record in the file
- S – Select a data-field for searching for a record by a

U.K.

(VU-FILE)

S I N C L A I R

[redacted] 16 o 48 K RAM

caricamento in 1 minuto e 40 secondi

Traduzione italiana del programma

[redacted]

** COSTRUZIONE DI UN ARCHIVIO **

Sia a casa che a lavoro, noi usiamo continuamente liste di nomi, appunti ecc. per ogni tipo di informazioni. A casa abbiamo agende di indirizzi, liste di nomi,rubriche telefoniche,ecc.. al lavoro, scuola ecc. ci sono numerosi schedari, archivi, indici per ogni tipo di informazione. VU FILE è un programma che permette di archiviare elettronicamente liste ed archivi con lo SPECTRUM.

Il vantaggio del computer nel fare questo non sta solamente nella facilità di caricamento e di archiviazione dell'informazione ma nella sua potenza nella gestione degli archivi: li ordina, li mette in sequenza, ricerca i dati, evidenzia i dati richiesti, li lista ,li stampa ecc.

L'archivio consiste in una raccolta di record dove ogni record può contenere diverse voci di informazione. Ognuna di queste voci di informazione che formano un record è chiamata campo.

VU FILE permette di creare il record del vostro archivio a piacere.

Ogni record apparirà come una pagina sullo schermo dove possono essere creati diversi campi quanti ne può contenere una videata.

Dopo aver formato il record (in altre parole uno schema o una mappa) una intera serie di comandi permette di sviluppare l'archivio e di interrogarlo. E' possibile inoltre salvare su cassetta, in qualsiasi momento, il nostro archivio per poterlo riprendere per un uso successivo.

Durante l'uso del programma le prime quattro righe danno informazioni ed i comandi ammessi. Questa testata suggerisce continuamente che cosa fare con il prossimo comando e qual'è il comando in azione sul momento. La rimanente parte dello schermo mostra continuamente o il record generale o il record corrente. Dopo il primo caricamento mostrerà come formare il record tipo. Altrimenti apparirà il record principale.

PREPARAZIONE DEL RECORD

VU FILE è un archivio dai molti usi. Nell'opzione di composizione del record, l'utente può comporre o formare la testata standard, i titoli, colori ecc. per costruire il record come desiderato. All'inizio un cursore rosso di forma quadrata si posizionerà in alto a sinistra. La tastiera viene usata come una semplice macchina da scrivere per immettere titoli standard e testate. Il cursore può essere mosso rapidamente attraverso lo schermo per mezzo delle frecce. In questo studio possono essere immesse solamente cose che saranno ripetute in ogni record. Il colore della carta e dell'inchiostro può essere variato durante tutta la formazione del record, premendo "EDIT" (CAP SHIFT + 1). Gli attributi immessi potranno essere visionati e modificati. Dopo che tutte le informazioni sono state immesse si può uscire con il comando "STOP" (CAP SHIFT + A). Dopo essere usciti dalla composizione del record il programma si immetterà automaticamente nel modo DATA FIELD (campi). Sullo schermo in alto apparirà una nuova testata di comandi. Il modo permette all'utente di definire la posizione nel record dove si vuol piazzare le informazioni variabili. Per esempio, se il file è stato creato per nomi ed indirizzi, ogni record può mostrare la parola "NOME" seguito dal particolare nome "MARIO ROSSI" in un record particolare. Le lettere "NOME" devono

B1 3

essere inserite nel modo composizione del record (RECORD LAYOUT), le lettere "MARIO ROSSI" devono esser inserite nel modo DATA SHIELD perchè variano da un record ad un altro e vengono chiamate campi (variabili). (facciamo un esempio all'italiana: guardiamo la nostra carta di identità: lo stampato, quello fatto dalla tipografia, dove c'è scritto COGNOME, NOME, DATA DI NASCITA, PROFESSIONE, INDIRIZZO, ecc. lo possiamo considerare un record organizzato a mappa o schema; la parte scritta dall'impiegato del comune, con i dati che ci riguardano personalmente, li possiamo considerare **i campi**, le variabili.)

L'utente deve specificare la posizione dei campi nel record(nell'esempio "MARIO ROSSI" dovrà essere posizionato dopo "NOME". Per far ciò è necessario muovere il cursore quadrato per mezzo delle frecce sulla posizione immediatamente successiva a "NOME" (o in altra desiderata) e premere "ENTER" nella posizione corretta.
Il programma chiederà a questo punto di definire il colore della carta e dell'inchiostro e successivamnte se devono essere creati altri campi. Premere STOP per uscire.

VU FILE : COMANDI

Dopo esssere usciti dal modo precedente il programma si immetterà automaticamente sul menù dei principali comandi ammessi (opzione 2 del menù principale) essi sono:

ENTER
ALTER = cambiare alterare
INFORM =Informazioni
FORWARD = avanti
BACKWORD = indietro
RESET = tornare all'inizio
ORDER = ordinare
SELECT = selezionare
QUIT = abbandonare
LIST = fare una lista
PRINT = stapare
COPY = copiare
DELETE = cancellare

Se il record è pieno il comando ENTER si effettua automaticamente. La maggior parte di questi comandi si spiegano da soli e possono essere utilizzati in qualsiasi parte del programma (sotto l'oozione 2) digitando la prima lettera del comando..

INSERIMENTO-CANCELLAZIONE E MODIFICAZIONE DEI RECORD.

Digitare "E" (= ENTER) per inserire un nuovo record nel file. Lo schermo mostrerà un record vuoto con i titoli standard e le testate che erano state immesse precedentemente. Il cursore rosso si posizionerà sul primo spazio del primo campo. Dovete semplicemente insererire l'informazione che deve andare nel campo e nel record richiesto. Nell'esempio inserito nella cassetta " GAZETTEER" la prima voce delle informazioni fisse è la parola " COUNTRY"(NAZIONE) ed il primo campo che lo segue, che varia naturalmente per ogni record è Afganistan, Albania, ecc. Se volevate inserire questo nel record dovevate posizionarvi sul campo esatto e digitare la parola Afganistan e farla seguire da "Enter"
Il cursore automaticamente si posiziona sulla prima battuta del campo successivo e così via fino in fondo, quando, terminata l'immissione di un record il programma mostrerà un nuovo record vuoto, pronto per una nuova immissione. Terminato di digitare i record desiderati, digitare " S " (STOP). Un record può essere cancellato nel seguente modo:

-richiamare il record sullo schermo;
-digitare il comando " D " (DELETE).

L'informazione del record può essere modificata con il comando " A "(ALTER) nel seguente modo:

-richiamare il record sullo schermo;

-premere il comando " A "(ALTER)

-Il cursore si posizionerà all'inizio di ogni campo (se è un campo da modificare: digitarlo nuovamente poi ENTER) (se è un campo che non deve essere modificato: premere la freccia che guarda verso il basso (SHIFT + 6). Dopo aver scorso tutto il record il computer riporta la testata dei comandi ammessi.

ORDINAMENTO-LISTATO E STAMPA DEI RECORDS.

L'intero archivio può essere listato o stampato in un certo numero di diverse sequenze stabilite dall'utente. Il particolare ordine di sequenza è definito per mezzo del comando " O "(ORDER). L'ordine dell'intero archivio può essere definito per mezzo dei principali caratteri alfanumerici di qualsiasi campo ci interessa. Il programma mette in ordine alfabetico iniziando dai numeri seguiti da lettere (vedi manuale SPECTRUM) dopo aver digitato la " O " (ORDER) la testata dei comandi cambierà per chiedere all'utente di definire il campo per il particolare ordine richiesto. Questo si ottiene spostando il cursore rosso quadrato digitando qualsiasi tasto fino al campo richiesto. Quando il campo corretto è identificato digitare ENTER ed il programma ritornerà con la testata comandi principali. Se l'utente non ha definito un particolare campo, l'ordinamento verrà eseguito sul 1° campo del record.

COMANDI = RESET - FORWARD - BACK - LIST - PRINT vengono eseguiti nell'ordine richiesto con il comando precedente.

" R " RESET riporta il 1° record dell'ordine.

" F " (FORWARD) porta avanti di 1 record.

" B " (BACK) porta indietro di un record.

" L " (LIST) elencherà tutti i record a partire da quello sul video in poi e nell'ordine precedentemente stabilito. Ogni record rimarrà per qualche secondo sul video. Questa "carrellata" può essere interrotta ad ogni record premendo in qualsiasi momento un qualsiasi tasto. Successivamente per continuare la " carrellata " ridigitare L. Per visionare l'intero archivio, prima di premere L, è necessario premere R (RESET) per portare l'archivio sul primo record .

."P"(PRINT) opera nello stesso modo del comando LIST eccetto che i record vengono scritti dalla stampante invece di essere visionati sullo schermo. Premere "P" per stampare. Per fermarsi digitare un qualsiasi tasto." C " (COPY) se invece di stampare l'intero archivio o solo parte di esso è necessario stampare un solo record è necessario portare il record desiderato sul video e poi premere il comando " C " (COPY).

SELEZIONE E DATA PROCESSING

Una delle più potenti caratteristiche del VU FILE è l'abilità di trovare, evidenziare e selezionare un particolare record o una serie di particolari records. Ciò si ottiene con il comando SELECT. Premendo il comando " S " (SELECT) la testata cambierà per chiedere di evidenziare il campo sul quale deve essere effettuata la selezione. Se la selezione è da fare su un campo qualsiasi premere direttamente ENTER altrimenti premere un qualsiasi tasto per muovere il cursore sul campo richiesto poi premere ENTER.

A questo punto compare un campo con una stringa di caratteri con il quale si può definire il gruppo di record che ci interessano. Dopo aver definito il campo appropriato la serie di comandi cambierà per permettere di ritornare sui comandi principali e lasciare la stringa di caratteri per tutte le seguenti operazioni: LIST - PRINT - FORWARD -BACK - RESET. Ciò permette di fare delle piccole Data processing. Ad esempio nel programma esempio Gazzettter se si è interessati ad evidenziare tutte le nazioni del mondo dove viene parlato lo spagnolo (SPANISH) si posizionerà il cursore sul campo LINGUA (LANGUAGE) e si formerà una stringa "SPANISH". Se si torna ai comandi principali e si immette "L" LIST avremo sul video una lista di tutti i paesi che parlano lo spagnolo.

RICERCA E RITROVAMENTO DI RECORD PARTICOLARI

In molte occasioni si può usare l'archivio come elenco dei biglietti da visita,rubrica ecc. Per esempio, se l'archivio consiste in un elenco di nome,indirizzo,n.telefono saldo ed altre informazioni d'affari, si può caricare il programma da cassetta al mattino e lasciarlo in macchina fino al termine della giornata lavorativa.In risposta ad una richiesta telefonica, il record del nominativo interessato può esssere immediatamente visionato semplicemente digitando i pochi caratteri del cognome. Questo permette un immediato e potente sistema di ricerca alfabetica. Ciò si ottiene con " S " SELECT. Dopo aver digitato ENTER apparirà il modo di ricerca sullo schermo. Differenti record sono ora di accesso immediato immettendo la stringa appropriata seguita da ENTER. Con questo mezzo è facilissimo trovare qualsiasi record.

INFORMAZIONI ED ABBANDONO

Informazioni ed abbandono sullo stato dell'archivio possono essere sempre richieste digitando " I " INFORM. Questa informazione include il numero dei campi in ogni record, il numero dei record nell'archivio, l'ordine che si sta usando e di quanto l'archivio è pieno. Digitando un tast qualsiasi si ritorna ai comandi principali. Per tornare al menù principale, ed esempio per fare il SAVE dell'archivio su nastro, digitare " Q " QUIT. In molti casi è necessario modificare l'archivio per stampare i record in modo diverso sullo schermo. Questo evita di sciupare molta carta. Per formattare un record per la stampante digitare l'opzione " 3 " del menù principale quando vi verrà richiesto in che modo stamapre i record. Potete farlo stampare più compatto con l'opzione " 3 ".

ESEMPIO : GAZETTEER (DIZIONARIO GEOGRAFICO)

LOAD " GAZETTEER"

Gazetteer (Dizionario Geografico) è un esempio di,applicazione del VU FILE: è un archivio con un record per ogni nazione d'Europa 16 K RAM o del mondo 48 K RAM contenente il nome della nazione, della capitale, lingua parlata,moneta in uso e altre informazioni. Questo archivio può essere interrogato e manipolato con i messaggi del VU FILE.

SOMMARIO DEI COMANDI

A ALTER	per fare correzioni nel record
B BACKWARD	tornare indietro di un record
C COPY	stampare una videata
D DELETE	cancellare un record
E ENTER	impostare un nuovo record
F FORWARD	muovere avanti di un record
I INFORMATION	informazioni sui parametri
O ORDER	ordinare l'archivio in un certo modo
P PRINT	stampare l'archivio
Q QUIT	abbandonare l'archivio perttornare al menù principale
R RESET	tornare al primo record
S SELECT	selezionare un campo desiderato per ricercare i record a mezzo stringa.

TRADUZIONE DI ALCUNE "VIDEATE":

Record Layout

1º Modo dattilografico-immettere i titoli nel record vuoto-muovere il cursore con le frecce."STOP" (S-SHIFT+A) per uscire. "EDIT" per i colori.

2° se "EDIT":
Cambiare il colore dei titoli premendo il n° del colore o premere ENTER per lasciarlo invariato
3°costruzione campo:
"muovere il cursore con le frecce e premere ENTER per evidenziare l'inizio di ogni campo."STOP" (SHIFT + A) per uscire.
4° colore campo.
Digitare il n° del colore (0 a 7) per definire il colore della carta e dell'inchiostro del campo.(n.b.: si consiglia colori ben contrastati fra di loro: 7/0 o 0/7)
5° ENTER A RECORD-Immissione record
" STOP " per uscire. Digitare "ENTER" dopo ogni campo.
6° ALTER Modifica di un record.
(SHIFT + 6) per saltare un campo che non deve essere modificato.
7°MENU' VU FILE

1 ENTER VU FILE
2 SET RECORD LAYOUT
3 SET PRINTER LAYOUT
4 SAVE A DATA FILE
5 LOAD A NEW DATA FILE
6 ERASE CURRENT FILE

GO TO USR d

1

Sinclair ZX Spectrum with 16K or 48K RAM

VU-CALC

from PSION

Load and Run by typing LOAD "VU-CALC"

Pocket calculators have become a powerful and indispensable tool to many though they only work out and display one number at a time. They are useful because there are many things in life that are well described by a single number. There are many more things, however, which can be described more fully and completely with a table or an array of numbers organised in an ordered way. VU-CALC is a program for calculating and displaying tables of numbers and names. You start with an empty table or grid composed of boxes and arranged in rows and columns. With a simple set of commands you can invoke calculator-like formulae which link one box to another or one row to another or one column to another so that the computer can calculate a whole table in a few seconds. You can also enter data or names into particular boxes and by simply changing one or more parameters, tables for different situations can be re-evaluated and displayed almost immediately.

This provides an immensely powerful tool for financial analysis, budgets, the calculation of engineering or scientific tables, statistical analysis etc.

LAYOUT — Table, Cursor and Window

On entering VU-CALC, a two line command panel can be seen at the top of the screen, a blank labelled area is

2

in the middle of the screen and an input line can be seen at the bottom of the screen. The blank area in the middle of the screen is a window on to the table.

The table can be thought of as a large number of boxes ordered into rows or columns. The rows are labelled alphabetically and the current rows shown in the window can be seen down the left-hand margin.

The columns are labelled numerically from 01 upwards and the current columns shown in the window are numbered along the line immediately above the window. Each box or rectangle is uniquely identified by the row letter followed by the column number.

Thus, A01 or A1 refers to the box lying in the top left-hand corner of the table.

At any stage during the use of VU-CALC, the user's attention relates to a particular box which is illustrated as a large red rectangle on the table. This is the cursor. The cursor can be moved freely and rapidly to read or enter data, text or formulae. The cursor is moved on the table by pressing the four arrow cursor keys on the keyboard, (caps shift held down while keys 5, 6, 7 or 8 are pressed). The cursor may be moved rapidly by holding down one of the arrow keys firmly.

When the cursor reaches a box at the edge of the window and the cursor keys are pressed further the window will automatically move over the table. This can be observed by noticing the column numbers or row numbers along the sides of the window changing.

By this means, the user can move rapidly round a very large table (in the case of the 48K Spectrum).

Entering Data and Text

The user may think of VU-CALC as a thinking spread-sheet in which he may layout at will text and numerical data. At the main command point of VU-CALC, 4 types of entries may be made: text, data, formulae or a command.

To enter text, position the cursor at the box where you

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wish to start the text. Press " and now simply type in the text which you wish to enter at that position. As you type you will see the text being written on the input line at the bottom of the screen with the small red cursor on that line moving along. You may fill the whole line and use the delete key to make alterations. When complete, press "ENTER" to insert the text on to the spread sheet.

To enter a number in any box, simply position the cursor where you wish to enter the number and type in the number followed by the "ENTER" key. The number will immediately be shown in the current box.

To calculate a number at a particular box using a formula, position the cursor at the appropriate box and simply type in the formula. When the formula as shown on the bottom input line is correct press "ENTER" which will apply the formula to the current box and which will calculate the data immediately at the appropriate boxes. A formula may be applied to many boxes with the # Repeat command, VU-CALC will automatically distinguish between text, data and formulae.

When the bottom input line is empty typing a "#" will set VU-CALC into the command mode and a list of commands will appear on the top two lines. By pressing the first character of the required command, the command will be executed subject to its appropriate parameters.

Formulae

The real power of VU-CALC comes from the use of formulae for boxes, rows or columns which can generate the data you require for your table. The syntax of a formula includes the use of constants, (numbers), references to the numbers in other boxes and the simple arithmetical operators: +, −, /, *. The numbers in another box are always referred to by the box reference of row letter followed by column number.

In constructing formulae you may think of the box

B1BL 1/6

references as variables and the formulae as simple algebraic expressions using these variables, constants and the arithmetical operators. Some examples of such formulae are: —

B1*1.03
D12*(B2+1.5)/C1
D7—C7

A formula can refer to one particular box or it may be repeated along a row, down a column, or across a block. To achieve this, the # Repeat command is used (see below under commands).

Formulae are always applied relatively. For example, in the Repeat command, if the current formula is being applied to a sequence of boxes along a row then the column references in the formula are always incremented as the formula is applied sequentially along the row. For example, if the formula "1.03*A1" in the box A2 was repeated along the row A then the formula in box A3 would be "1.03*A2" and the formula in box A4 would be "1.03*A3", etc. The same relative concept is applied down a column or over a block where the row letters in the formula are incremented sequentially.

If, in a formula, you wish to refer to an absolute box reference which does not alter when repeated, the box reference in the formula should be prefixed with the character "$". Thus, for the above example, the formula "1.03*$A1" when applied to the row A would always refer to the contents of box A1 only.

COMMANDS

A variety of commands exist in VU-CALC for loading, saving and printing files, for editing etc. These commands are entered by typing "#" in the empty input line followed by the first character of the particular command.

 # B **Blank**

Blanks the current box.

 # C **Calculate**

Forces a recalculation of the whole table and is sometimes required when a formula is changed.

 # E **Edit**

Allows the formula referred to by the current box to be replaced by a new formula.

 # F, c, f, j **Format**

Format specifies the representation of a number in a column, as defined by the three parameters c, f, j. The first parameter c must be a one or two digit number or the letter "A". If c is a number, the formatting will apply to that column only, while "A" will apply the format to All the table.

The parameter f specifies the type of formatting required. If an I is entered, integer format will be used. If $ is entered, a real number with two decimal points will be used. G specifies a general format. The third parameter, j, must be L or R for left or right justified.

 # G, rc **Go**

Move the cursor immediately to the box rc.

 # L **Load**

Will clear the screen, ask for a file name and load that file.

 # P **Print**

Will cause a copy of the screen to be output to the printer.

 # Q **Quit**

Will allow the user to clear the worksheet or exit from the program.

 # R, rc, f:l **Repeat**

This will cause the contents of the box rc to be reproduced across the range specified. Most importantly, it will repeat the formula in the box rc over the other boxes within the range specified.

The first parameter, rc, is a box reference, for example B3, which specifies the box whose contents or formula is to be repeated.

The box can be repeated along a row, down a column or over a rectangular block of boxes. This is defined by the parameter range which has the form f:l where f and l are box references, for example A3:B5. f is the top left-hand box of the block and l is the bottom right-hand box of the block. In the example, the box at rrcc would be repeated over the boxes A3, A4, A5, B3, B4 and B5, in the range, the box f must always be to the left, and, or above the box l.

 # S **Save**

Clears the screen and asks the user for a file name. The data on the table will be saved to cassette.

 # T, r or c, r or c **Transfer**

This command transfers a row or column defined by the first parameter to another row or column defined by the second parameter. A row cannot be copied to a column and vice-versa.

SUM FACILITY

Part of a row, a column, or a rectangular block of boxes may be added automatically through the sum facility. Summing is performed as a formula. Position the cursor at the cell where you wish to place the result of the summation. Enter a formula of the form

& f:l

and press the enter key. The sign "&" means sum and the formula means "sum the boxes from the first box f to the last box l".

f:l is the rectangular "range" of boxes over which the summation is to be performed where f is the top left-hand box of the rectangle. For example:

& A2:B4

will sum the boxes A2 + A3 + A4 + B2 + B3 + B4.

To sum the row C from C3 to C10 enter,

& C3:C10

To sum the column 5 from B5 to D5 enter,

& B5:D5

The box reference f must always be above and, or to the left of box reference l.

Errors

An error will occur and the program will fail with a Spectrum error code at the bottom of the screen if a formula is entered which refers to a blank box or one with characters rather than numerical data.

If this occurs, return to the program by entering GOTO 9000. The program will then display the identity of the box which it was trying to calculate when the error occurred. Press the key ENTER. The display will return to the table and you may then move the cursor to the problem square. Look at the formula for this box and see which box the formula is referencing which contains characters or is blank.

SUMMARY OF VU-CALC COMMANDS

 # B — Blanks the current box and its formula.
 # C — Forces recalculation of whole grid — required when data or a formula is changed.
 # E — To change the formula in the current box.
 # F, c, f, j — Formats column c (A=All). f=i (integer), =$ (decimal), =G (general), j=L (left), =R (right) justified.
 # G, rc — Go to box rc.
 # L — Load a Vu-Calc data file.
 # P — Prints a copy of the screen.
 # Q — Quits Vu-Calc.
 # R, rc, f:l — Repeat contents of box rc over range of boxes f to l.
 # S — Saves the current Vu-Calc file.
 # T, r or c, r' or c' — Transfer row r to row r' or column c to c'.

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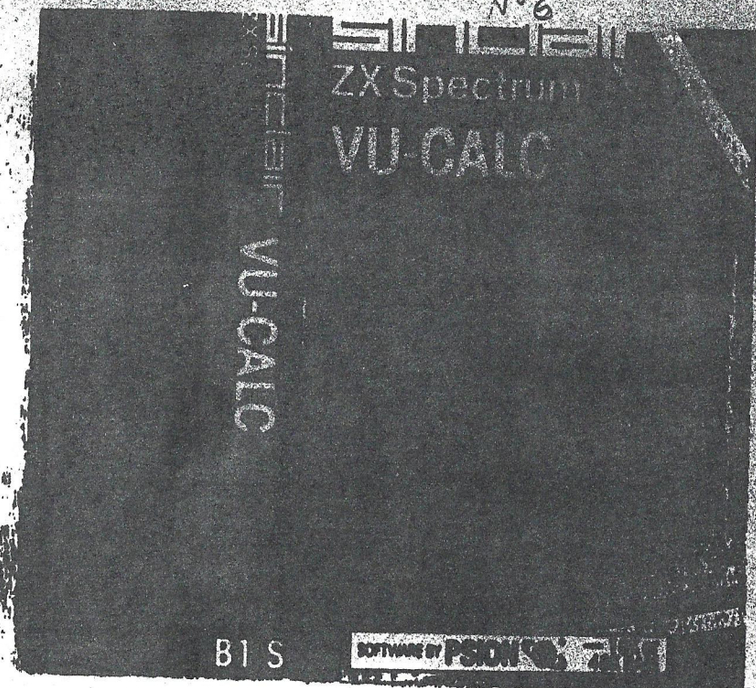
N°6



1

Sinclair
ZX Spectrum with 16K or 48K RAM

VU-CALC

from PSION

Load and Run by typing LOAD "VU-CALC"

Spreadsheet calculators have become a powerful and [illegible] tool to many though they only work out [illegible] one number at a time. They are useful [illegible] there are many things in life that are well [illegible] by a single number. There are many more [illegible], however, which can be described more fully and [illegible] if more or an array of numbers [illegible] in an ordered way. VU-CALC is a program for [illegible] and displaying tables of numbers and [illegible] in rows and columns. With it [illegible] of numbers you can create a table in the [illegible] which are free to another or one row to another or one column to another so that the computer [illegible] a whole table in a few seconds. You can [illegible] data or remove lines particular items and by [illegible] one or more parameters, values for [illegible] can be re-evaluated and displayed [illegible].

[illegible] provides an immensely powerful tool for financial [illegible], budgets, the calculation of engineering or [illegible] tables, statistical analysis etc.

LAYOUT — Table, Cursor and Window

On entering VU-CALC, a two line command panel can be seen at the top of the screen, a blank labelled area is at the bottom of the screen. The blank area in the middle of the screen is a window on to the table. The table can be thought of as a large number of boxes ordered into rows or columns. The rows are labelled alphabetically and the current rows shown in the window can be seen down the left-hand margin. The columns are labelled numerically from 01 upwards and the current columns shown in the window are numbered along the line immediately above the window. Each box or rectangle is uniquely identified by the row letter followed by the column number. Thus, A01 or A1 refers to the box lying in the top left-hand corner of the table.

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B1*1.03
D12*(B2+1.5)/C1
D7 – C7

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Blanks the current box.

5

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Forces a recalculation of the whole table and is sometimes required when a formula is changed.

E — Edit

Allows the formula referred to by the current box to be replaced by a new formula.

F, c, f, j — Format

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The parameter f specifies the type of formatting required. If an I is entered, Integer format will be used. If a . is entered, a real number with two decimal points will be used. G specifies a general format. The third parameter, j, must be L or R for left or right justified.

G, rc — Go

Move the cursor immediately to the box rc.

L — Load

Will clear the screen, ask for a file name and load that file.

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Will cause a copy of the screen to be output to the printer.

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R, rc, f:l — Repeat

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The first parameter, rc, is a box reference, for example B2, which specifies the box whose contents or formula is to be repeated.

The box can be repeated along a row, down a column or over a rectangular block of boxes. This is defined by the parameter range which has the form f:l where f and l are box references, for example A3:B6. f is the top left-hand box of the block and l is the bottom right-hand box of the block. In the example, the box at rrec would be repeated over the boxes A3, A4, A5, B3, B4 and B5. In the range, the box f must always be to the left, and, or above the box l.

S — Save

Clears the screen and asks the user for a file name. The data on the table will be saved to cassette.

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& f:l

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f:l is the rectangular "range" of boxes over which the summation is to be performed where f is the top left-Hand box of the rectangle. For example:

& A2:B4

7

To sum the row C from C3 to C10 enter,

& C3:C10

To sum the column B from B5 to D5 enter,

& B5:D5

The box reference f must always be above and, or to the left of box reference l.

Errors

An error will occur and the program will fall with a Spectrum error code at the bottom of the screen if a formula is entered which refers to a blank box or one with characters rather than numerical data.

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T, r or c, r' or c' — Transfer row r to row r'

SINCLUB / FCO

VU-CALC FROM PSION

1/ Come si presenta il video

All'inizio si vedono sul video, in alto 2 linee con il promemoria delle operazioni consentite, in basso una linea per l'ingresso dei comandi, ed in centro la TABELLA pulita con visibili le prime 18 righe e le prime 4 colonne. La parte che appare rappresenta una FINESTRA dell'intera tabella che stà in memoria. Le righe della tabella sono contraddistinte dalle lettere dell'alfabeto da A a Z, poi da AB ad AZ e poi da BA a BH, riportate nel margine sinistro; le colonne invece da numeri che partono da 1 ed arrivano a 6Ø e sono riportati nel margine in alto.
Ogni casella è individuata in modo univoco indicando prima la/le lettere della riga e poi il numero della colonna: AØ1 o A1 individua la prima casella dell'angolo in alto a sinistra, BH6Ø invece l'ultima casella disponibile. Sono quindi utilizzabili 6Ø righe e 6Ø colonne per un totale di 36ØØ caselle.
Sul video é presente un rettangolo rosso, che inizialmente si trova nella casella A1, é il CURSORE DI TABELLA. Esso individua la casella nella quale si può operare ed é facilmente spostabile nelle 4 direzioni usando i TASTI FRECCIA (CAPS SHIFT contemporaneamente a 5,6,7,8). Se il tasto freccia viene mantenuto premuto si hà uno spostamento rapido su caselle successive (sia verticalmente che orizzontalmente). Quando il cursore raggiunge l'ultima casella visibile (o su una riga o su una colonna), continuando a premere i tasti freccia si ottiene lo SCROLLING della tabella e vengono mostrate le colonne o le righe seguenti, mentre scompaiono verso il margine opposto. Le dimensioni consentite per ogni casella sono di 7 caratteri, scrivendo parole si possono invadere le caselle vicine, fino ad un massimo di 4 (28 caratteri).

2/ Come si scrive nelle caselle

Nella riga in fondo al video compare un punto interrogativo, seguito da L, con soprapposto il normale cursore piccolo lampeggiante. Il programma é pronto ad accettare una delle 4 possibili entrate: PAROLE, DATI NUMERICI, FORMULA/E, COMANDI.

a/Parole: posizionare il cursore di tabella dove si vuole scrivere, battere apice ", scrivere il testo (quello che si scrive appare nella riga in basso, e si può correggere nel solito modo), battere ENTER.
Il testo comparirà nella casella/e designata/e. Si possono introdurre al massimo 28 caratteri di testo per volta.

b/Numeri: basta posizionare il cursore di tabella, scrivere il numero e battere ENTER.

c/Formule: stessa procedura dei numeri, comunque la formula che compare nella riga in basso, viene immediatamente applicata e nella casella compare il risultato.

d/Comandi: con la riga in basso vuota (di numeri o lettere), selezionate # (Symbol Shift e 3) e la lista dei comandi appare nelle due righe in alto. Per aseguire il comando prescelto, battere la prima lettera del comando stesso (es: la C per calculate) e quindi ENTER.

3/ Formule

Il reale potenziale di VU CALC é la possibilità di interessare formule, sia collegate fra loro e non, che ovunque messe. Una formula include l'uso di costanti (numeri), riferimenti a numeri in altre caselle e delle 4 operazioni aritmetiche (+ , - , / , *). Non si può usare la freccia in su (↑) per l'elevazione a potenza, ma si deve trasformare il calcolo in un prodotto (es: 2^3 = 2*2*2*); di conseguenza si possono calcolare solo potenze con esponente intero.

%

B1 8

Esempi di formule sono: B1*1.03 or D12*(B2+1.5)/C1 or D7-C7
Come già detto, nella casella interessata si visualizza il risultato, mentre nella riga in basso compare la formula come impostata. Att.ne, non é necessario battere le lettere maiuscole, poiché il programma poi le trasforma autonomamente.
Una formula può essere ripetuta lungo una riga o una colonna con il comando REPEAT (#R), nel modo mostrato di seguito.
Es: in A1 introduciamo un numero, ed in A2 la formula 1.03*A1 e comandiamo il repeat
#R,A2,A3:A5 ENTER, troviamo
in A3, 1.03*A2
in A4, 1.03*A3
in A5, 1.03*A4
Mentre se non vogliamo alterare il riferimento al valore in A1 lungo tutta la colonna o riga, procedere nel seguente modo:
Es: in A1 introduciamo un numero ed in A2 la formula 1.03*$A1 e comandiamo il repeat
#R,A2,A3:A5 ENTER, troviamo
in A3, 1.03*A1
in A4, 1.03*A1
in A5, 1.03*A1
Attenzione, l'unica differenza tra le due procedure é il segno $ della formula in A2

4 /Comandi

B/Blank
Cancella il contenuto nella casella sul quale é posizionato il cursore di tabella.
C/Calculate
Ricalcola tutte quelle caselle alle quali é associato il valore o la formula che abbiamo cambiato.

E/ Edit
Serve per modificare la formula associata alla casella sulla quale si trova il cursore di tabella, l'unica differenza con BLANK, è che non cancella la formula da variare fino a che non si scritta la nuova

F/ Format
Normalmente, se introduciamo nelle varie righe di una stessa colonna numeri decimali che non abbiano tutti la stessa grandezza, l'incolonnamento risulta problematico e difficoltoso; inoltre potrebbe crearsi l'esigenza di avere numeri che iniziano dalla parte sinistra delle caselle.
Queste due operazioni si possono fare con il comando F, il quale deve risultare formato nel modo seguente:

#F, NC or A, I or G or $, L or R

NC = numero della colonna che si vuole cambiare
A = se si vuole cambiare tutta la tabella
I or G = spostamenti senza introduzioni di numeri decimali
$ = spostamenti con 2 cifre decimali
L = sinistra
R = destra

Esempi: supponiamo che la casella A1 si presenti così:

					1	2	6

con #F,1,I,L	diventa	1 2 6
con #F,1,$,R	diventa	1 2 6 . 0 0
con #F,1 G,R	ritorna	1 2 6
con #F,1,$,L	diventa	1 2 6 . 0 0

G / Go

Se si desidera andare molto velocemente ad una particolare casella, senza usare lo SCROLL, si può usare questo comando nel seguente modo
Es: da casella A1 andare alla casella BA, 17
- comandare Go (#G)
- scrivere , BA17 in modo che la riga di comando risulti #G, BA17
- premere ENTER

Comparirà una FINESTRA con in alto a sinistra la casella BA17.

L / Load

Permette di introdurre nella tabella VU-CALC, un programma particolare (vedi l'applicazione fatta dal CLUB per il calcolo delle TASSE ANNUALI con il MODELLO 740
Dopo #L ed ENTER il video viene pulito e viene richiesto il nome del FILE; quindi si procede come un qualsiasi caricamento.

P / Print

Serve per avere la copia del video (FINESTRA) sulla stampante.

Q / Quit

Questo comando fà comparire sul video il MENU seguente
1 - Cancella il programma VU-FILE
2 - Pulisce la tabella
3 - Ritorna nella tabella inalterata.

R / Repeat

I concetti fondamentali di questo comando sono stati spiegati nel punto 3, in aggiunta al quale si precisa, che il contenuto di una casella può essere ripetuto oltre che lungo le righe e colonne, anche in un blocco rettangolare di caselle; vedi esempi seguenti

1/ lungo una fila #R, A1, A3:A7
il contenuto di A1 è ripetuto in A3, A4, A5, A6 e A7

2/ lungo una colonna #R, A1, A3:D3
il contenuto di A1 è ripetuto in A3, B3, C3, D3

3/ in un blocco #R, A1, A3:B5
il contenuto di A1 è ripetuto A3, A4, A5 e B3, B4, B5

Attenzione, per i blocchi, dopo la casella che si vuole ripetere (A1), bisogna inserire quella in alto a sinistra (A3) e quella in basso a destra (B5) del rettangolo formato dal blocco nel quale ripetere A1.
Per le righe e le colonne invece, la prima casella, dopo A1, deve essere sempre in alto od a sinistra della seconda.

S / Save

Serve a memorizzare una tabella su cassetta con la normale procedura di Save.

T / Transfer
Serve per trasferire e quindi duplicare tutta una riga o colonna in un'altra.
ES: il comando #T, 2,6 significa che la colonna 2 viene duplicata nella colonna 6, e

#T, A, B la riga A viene duplicata in B

Attenzione, non si possono duplicare colonne in righe o righe in colonne.

5/ Somma facilitata

È possibile, usando il metodo descritto nell'esempio, introdurre in una casella la somma di una riga, di una colonna o di un blocco, senza addizionare tutti i valori delle caselle interessate.
Es: introdurre in D5 la somma di A2+A3+A4+B2+B3+B4
- battere & (symbol shift e 6)
- quindi formare la linea di comando # & A2:B4

Attenzione, anche nella somma facilitata vale il concetto già espresso nel punto 4/Repeat per la formazione della linea di comando.

6) Errori
Si ha una segnalazione di errore (C NON SENSE IN BASIC) che appare nella parte bassa del video, ogni qualvolta si fà riferimento, per un calcolo, ad una casella vuota o contenente lettere. In tal caso, fare:
GO TO 9000 ed ENTER. Il video si cancella ed appare la scritta
ERROW WAS AT COLOMN : X
ROW : Y
Dopo aver premuto ENTER, ricompare il quadro precedente, andare alla casella dove è stato indicato l'errore, correggerlo e continuare.
Nella malaguratа ipotesi che compare la scritta VARIABLE NOT FOUND, usando il metodo sopra descritto, viene visualizzata solo la colonna od addirittura fà riferimento a delle righe inesistenti (ES COLOMN 01/ROW CP). Questo significa purtroppo che il nostro errore ha inficiato tutto il contenuto della tabella e bisogna ~~ri~~ riniziare di nuovo.
Per non perdere il programma VU-CALC e doverlo ricaricare di nuovo, fare:
- RUN ENTER (il video si cancella)
- BREAK
- GO TO 9000 (si ritorna alla tabella inficiata)
- Comandare Quite (#Q)
- Scegli l'opzione 2 e ricomincia.

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