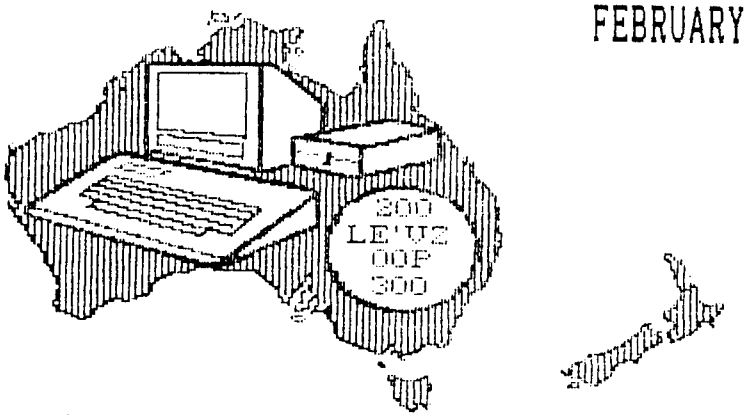
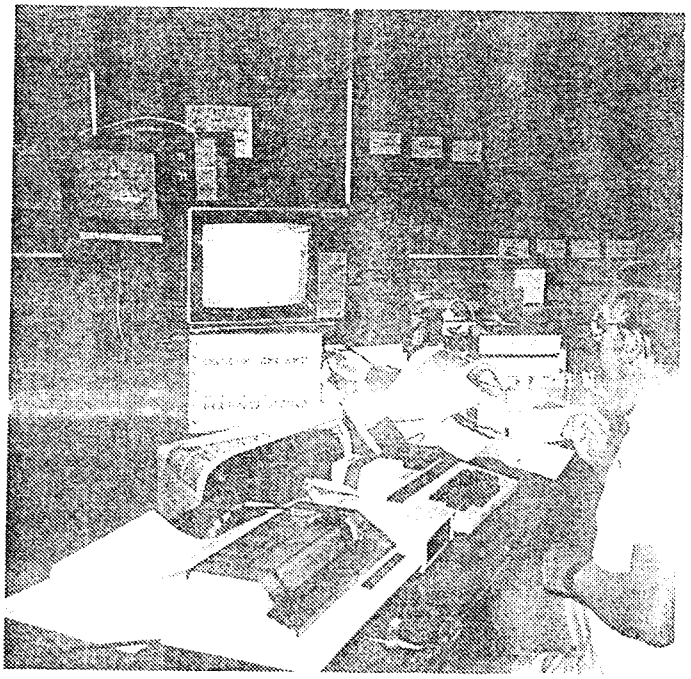
* LE'V2 200/300 *

Ouner's Operators Programmers

** THE SOUTH PACIFIC MAGAZINE FOR VZ COLOUR COMPUTERS **

FEBRUARY 1988. #19 A$2.00.





SOME OF OUR SYSTEMS AT THE CHRISTMAS MINI-EXPO BEING OPERATED BY MR KEN BRAZIER OF PENRITH.

EDITORIAL

Greetings Readers, all Australians and other folk,

In this special year of Australias ***Bi-centenial Year 1988,*** I wish that all people will enjoy this special year. We live in a big country, big enough to accommodate a lot more of GODs people from anywhere in His world, no matter of what colour, race or religion.

As in previous LE'VZs I also trust that folk will enjoy the ***World Expo 1988*** in Brisbane, whether by visiting it or through the various media. All seems to be going to plan, better than the organisers expectations.

This is a special year to Marie and I in another aspect, that being that we are going to have a long awaited holiday together. We will be spending it out of Australia, so ***VSOFTWAREZ and LE'VZ*** will be closed for business all of April, May and part of June 1988. The D'Alton Sound Service business will still operate as our son (John) and his wife (Lyn) will be living in our residence. So for many enquiries, contact the various folk on my Contact List on page eleven.
This means that I will NOT publish a May LE'VZ.

Our ***Christmas Mini-Expo*** was a great success, see my report elswhere in this LE' VZ. It appears that Dick Smith Electronics has finally "snut the gate" on the VZ so I wonder how long they will continue to support and sell the software and books. I would like to hear from folk with their impressions of the winding down proceedure of DSE and the VZ.
Remember, all DSE stores have received our VSOFTWAREZ advertising and information sheets at some time. Also they should all by now be aware of the importance of LE'VZ and the other user groups. So don't be afraid to ask them (DSE) any enquiry at any store, whether from Auckland to Perth or Darwin to Dunedin.

I would like to make another appeal for VZers to send me a short report on any gathering/s, however small that may have taken place recently. Also letters to the editor. I am pleased that readers are so happy with the quality of LE'VZ, --- ***"Wot, no constructive criticism"*** .
I also make another appeal for more hardware contributions. As usual I thank all those who have sent contributions for publication, without them LE'VZ would probably not exist. As has been stated in other user group newsletters, some articles appear in more than one publication. Please understand that some VZ folk receive only one newsletter so there is no way around this.

You can be assured that such articles are not pirated, as the Author has given the necessary permission for reproduction of the article/s.
Anyway it is good that any article be given the greatest amount of exposure as possible.

There will be a new computer magazine published in Australia soon. Perhaps it has already been on sale. I am informed it will be cover the gap that has emerged between our individual newsletters and the so called "up market" magazines. As I have previously mentioned, those magazines IE., BYTE, APC, YOUR COMPUTER etc. do not cater for the small computer anymore. This new magazine will be called ***MEGACOM,*** so keep an eye out for it at newsagents and computer stores.

Finally, we send special thanks to folk who sent Marie and I lovely Christmas cards for the festive season just passed.

God bless, John D'Alton.

CONTENTS.

LE'VZ 200/300 OOP IS PUBLISHED BY MR J.C.E. D'ALTON OF 39 AGNES ST, TOOWONG, QLD. AUSTRALIA. TELEPHONE (07)371 3707.

OUR QUICKWRITE WORD PROCESSOR IS USED EXTENSIVELY.

BICENTENARY

BASIC CALENDER PROGRAMME.

By Ken Brazier.

This short programme allows you to find out what day fell on a particular month and year. Quite interesting. The low resolution graphics in lines 2010 and 2020 will have to be typed in with a little guess-work as it is always hard to know how many blocks are required. (J.D.)

```
 2 CLS
 4 PRINT"  DO YOU WANT CALENDAR HISTORY                (Y/N)"
 5 A$=INKEY$:A$=INKEY$
 6 A$=INKEY$:IFA$=""THEN6
 7 IFA$<>"N"ANDA$<>"Y"THEN2
 8 IFA$="N"THEN10
 9 IFA$="Y"THENGOSUB  3000
 10 CLS:DIMM$(12):GOSUB1000
 30 PRINT@10,"[graphics blocks]";
 40 PRINT:PRINT" THIS IS A PROGRAM TO PRINT A";
 45 PRINT:PRINT" CALENDAR OF ANY MONTH IN ANY";
 50 PRINT:PRINT" YEAR FROM 45 BC TO 20000 AD.";
 55 PRINT:PRINT" TO VIEW A MONTH IN A YEAR BC";
 60 PRINT:PRINT" ALWAYS TYPE A - SIGN BEFORE";
 65 PRINT:PRINT" ENTERING THE YEAR.(E.G.3-1880)";
 67 PRINT:PRINT" FOR MARCH 1880 BC.";
 68 PRINT:PRINT" TO QUIT THE PROGRAM TYPE Q,Q"
 69 PRINT" TO PRINT CALENDAR (PRESS) [graphics]     WHEN CALENDAR IS";
 70 PRINT" DISPLAYED ON  SCREEN"
 75 PRINT@453,"[graphics blocks]"
 76 K$=INKEY$
 77 I$=INKEY$:IFI$=""THEN77
 78 IFI$<>" "THEN77
 80 CLS:PRINT"ENTER MONTH AND YEAR REQUIRED";
 84 INPUT"   (E.G.3,1980)";X$,Y$
 86 IFX$=""ORY$=""THENCLS:GOTO80
 90 IFX$="Q"ANDY$="Q"THEN END
 95 M=VAL(X$):Y=VAL(Y$)
 100 IFM<1ORM>12ORY<-45 OR Y>20000THEN80
 110 I=Y:A$="AD":IFY<0THENA$="BC":I=-I:Y=Y+1
 130 CLS:PRINT@67,"MONTH OF ";M$(M);I;A$
 140 GOSUB500:I=J
 150 PRINT@130," SUN MON TUE WED THU FRI SAT":PRINT
 160 M=M+1:IFM>12THENM=1:Y=Y+1
 170 GOSUB500:N=J-1:J=I-INT(I/7)*7+1
 180 IFJ=7THENJ=0
 190 J=J*4+3:K=1
 200 IFY<>1752ORM<>10THEN220
 210 PRINT:PRINTTAB(J);" 1   2";:K=14:J=19:N=30
 220 FORI=KTON:PRINTTAB(J):PRINT;
 240 PRINTI;
 250 J=J+4:IFJ>30THENPRINT:J=3
 260 NEXT:PRINT@416,"  PRESS(SPACE) FOR ANOTHER CAL"
 270 GOSUB2000
 280 K$=INKEY$
 282 I$=INKEY$:IFI$=""THEN282
 283 IFI$="P"THENCOPY:GOTO 80
 284 IFI$<>" "THEN282
 290 CLS:X$="":Y$="":GOTO80
```

GOTO PAGE FOUR

"One of my ancestors fell at Waterloo."
"Really?
"Somebody pushed him off platform five."

Where was King Solomon's Temple?

On his forehead.

* VZ VERSES COMMODORE 64 *

By Jason Oakley.

These are a few differences that Jason notes in regards his two computers. Perhaps other folk might like to let others know the differences between other brand computers and the VZ. I know that there are quite a few folk who possess or use other computers, so please let others know how good the VZ is or otherwise. (JD.)

VZ FOR.

Easy to programme. Products sold in Australia.
Magazines written and sold in Australia.

VZ AGAINST.

Large pixels.
One voice sound.
Needs more supporters.

C 64 FOR.

Three voices for sound.
Better sound.
Smaller pixels.
Many supporters.

C 64 AGAINST.

Harder to programme sound, graphics etc.
Products and magazines sold worldwide as well as Australia.
This means sending away for subscriptions, competitions etc.

*** IN BRIEF ***

Peter Garrett of Midnight Oil, spoke at an Australian Institute of Systems Analysts luncheon in Sydney recently about computer privacy violations.

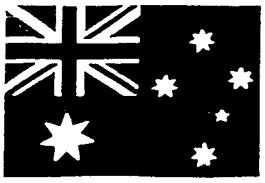
Software piracy is extensive in our education systems. It appears to be "rife" at Monash University.

The Victorian Government still maintains that there is no need to criminalise hacking if unauthorised access to computer facilities causes no loss or damage.

Even the TALL SHIPS are using on board computers.

COMPUTER VIRUS. Yes that's what they have called the very serious product of hackers. It was first reported on the Hebrew University in Israel, and can destroy vital commercial programmes and data bases. The virus is recorded on disc, unknowingly received via computer communications at other users systems and dumped on those discs. Where will it all end!!

(VZ)



```
500 K=Y+4712:J=INT(K/4)+365*K
510 N=30.6*M-32.3
520 IFM>2THEN540
530 N=N+2.3:IFK-INT(K/4)*4=0THENJ=J-1
540 J=J+INT(N+1)
550 IFJ<=2361221THENRETURN
560 K=Y-300
570 IFM<3THENK=K-1
580 N=INT(K/100)
590 J=J-INT(.75*N)-1:RETURN
1000 FORI=1TO12:READM$(I):NEXT
1010 RETURN
1020 DATA JANUARY,FEBRUARY,MARCH,APRIL
1030 DATA MAY,JUNE,JULY,AUGUST
1040 DATA SEPTEMBER,OCTOBER,NOVEMBER,DECEMBER
2000 COLOR1
2010 PRINT@0,"[graphics]";
2020 PRINT@480,"[graphics]";
2030 FORX=32TO448STEP32
2040 PRINT@X,"[graphics] ";
2050 PRINT@X+31," [graphics]";
2060 NEXTX
2070 PRINT@0,"[graphics]";
2080 PRINT@31,"[graphics]";
2090 PRINT@480,"[graphics]";
2100 POKE29183,135
2110 RETURN
3000 CLS
3010 PRINT"      [graphics]":PRINT
3020 PRINT"THE JULIAN CALENDAR WAS ADOPTED";
3030 PRINT" IN 45BC. IN THE JULIAN CALENDAR"
3040 PRINT"ALL CENTENNIAL YEARS WERE LEAP"
3050 PRINT"YEARS (I.E.THE YEARS 1200,1300"
3060 PRINT"1400,ETC). BY THE END OF THE"
3070 PRINT"16TH CENTURY A DIFFERENCE OF 10"
3080 PRINT"DAYS BETWEEN THE TROPICAL AND"
3090 PRINT"CALENDAR YEARS WAS FOUND."
3100 PRINT"THIS WAS CORRECTED IN 1582 BY"
3110 PRINT"POPE GREGORY."
3111 PRINT@483,"[graphics] <SPACE> TO CONTINUE";
3112 K$=INKEY$:I$=INKEY$
3114 I$=INKEY$:IFI$=""THEN3114
3116 IFI$<>" "THEN3114
3118 CLS:PRINT
3120 PRINT"BRITIAN AND HER DOMINIONS MADE"
3130 PRINT"THE CHANGE FROM THE JULIAN TO"
3140 PRINT"THE GREGORIAN CALENDAR IN 1752"
3150 PRINT"WHEN WEDNESDAY SEPT. 2ND WAS"
3160 PRINT"FOLLOWED BY THURSDAY THE 14TH."
3170 PRINT"ALSO THE CENTENNIAL YEARS WERE"
3180 PRINT"NOT LEAP YEARS IF THEY WERE NOT"
3190 PRINT"DIVISIBLE BY 400 (I.E.THE YEARS"
3200 PRINT"1800 AND 1900 WERE NOT LEAP"
3210 PRINT"YEARS BUT THE YEAR 2000 IS)."
3215 PRINT@483,"[graphics] <SPACE> TO CONTINUE";
3220 K$=INKEY$:I$=INKEY$
3222 I$=INKEY$:IFI$=""THEN3222
3224 IFI$<>" "THEN3222
3230 RETURN
```

BANK SWITCHED MEMORY
IN THE 64K EXPANSION PACK

by Chris Hobrough.

The 64K memory expansion module for the VZ 200 and 300 performs two functions. Firstly, it fills out the top half of the memory range that the Z-80 processor is capable of addressing directly and secondly, it provides two additional banks, of 16K each, which can be switched in when necassary.

The module is divided into four 16K banks numbered 0 to 3. Bank 0 occupies the area from 32K to 48K and is fixed. Banks 1 to 3 all effectively occupy the area from 48K to 64K and are switchable. In other words, for each logical address in this range there are three physical locations. Needless to say, only one of the three is available at a time. On power up the default setting is bank 1 enabled and banks 2 and 3 disabled.

The leaflet that comes with the module claims that you cannot use this bank switching feature from BASIC, but all this means is that the interpreter cannot make use of it directly. If you are programming in BASIC then just lower the Top of Memory below the 48K point (see my article on saving memory to tape if you are unfamiliar with the use of the memory pointers) and this will leave the top 16K free to play with as you wish without upsetting the BASIC interpreter.

The software switch for the memory banks occupies the I/O address range 70-7FH (or 112-127 decimal. NB. this is not the same as a memory address) and is operated simply by writing the number of the bank you wish to select to an address in that range with an output command. In BASIC this would be:-

```
OUT 127, N
```

where "N" is the number of the bank you want (1-3). The "127" could have been any number from 112 to 127, it dosn't matter. If you are using assembly language then first load the bank number into register A and then use the OUT(N), A instruction:-

```
LD    A, N
OUT   (7FH), A
```

Well, that takes care of the HOW but leaves you with the WHEN and WHY. This is really wide open and depends on your programming experience and imagination. One thing is certain, you can't just write away in BASIC and hope for the extra memory to be switched in when needed. You have to do it yourself and it requires careful planning.

Swapping banks for one memory access is possible but rather slow and so the most practicle use is for machine code sub-routines or for blocks of data. Remember that any routines which are needed all the time or which call another bank must be below the 48K point or else they will become unavailable when you switch.

When using the extra memory for data storage from BASIC it is possible to use BASIC's array structures by leaving the Top of Memory set at 64K and just lowering the stack below 48K. However, this is very complicated and arrays use a lot of memory for overheads which further cuts down the space for your main program. It is best to POKE the data into known positions directly. Data base records, for instance, are often of fixed length and contain individual data fields of predetermined size. You only need to know the address where the file begins in order to calculate the position of any field in any record.

Finally, I'll leave you with one thought. With the help of a short machine code routine a Hi-Res screen can be copied from anywhere in memory into Video RAM in the blink of an eye. Between them the three switchable banks could store 24 complete screens. A bit of imagination could produce some fairly spectacular animation.

My address for any queries is:-

35 Byon St.,
Bangalow. 2479.

The following is a simple monitor type program to illustrate one way to access bank switched RAM. It allows you to select a bank and then enter text or view the contents of the bank. Try entering different things in each bank at the same address.

```
2 '**********************
3 '* MEMORY BANK MONITOR *
4 '*                     *
5 '*   BY C.J.HOBROUGH   *
6 '*       NOV '87       *
7 '**********************
99 'LOWER TOP OF MEMORY TO BELOW 48K ***************************
100 POKE30898,191
110 CLEAR100
999 'MAIN MENU ************************************************
1000 CLS
1010 PRINT@34,"BANK SWITCHED MEMORY MONITOR"
1020 PRINT@66,"--------------------------"
1030 PRINT@135,"[S]TORE DATA IN BANK"
1040 PRINT@207,"OR"
1050 PRINT@260,"[E]XAMINE CONTENTS OF BANK"
1060 A$=INKEY$:A$=INKEY$
1070 IFA$<>"S"ANDA$<>"E"THEN1060
1080 IFA$="S"GOSUB2000          'STORE
1090 IFA$="E"GOSUB3000          'EXAMINE
1100 GOTO1000
1999 'STORE ***************************************************
2000 GOSUB4000                  'SELECT BANK & ADDRESS
2010 CLS
2020 PRINT"TYPE IN CHARACTERS TO BE STORED"
2030 PRINT"AND PRESS <RETURN> TO FINISH."
2050 PRINT
2100 PRINT"[ ]";:PRINTCHR$(8);    'PRINT CURSOR & BACKSPACE
2110 A$=INKEY$:A$=INKEY$        'WAIT FOR INPUT
2130 POKE30862,80:POKE30863,52  'SET USR POINTER
2140 X%=USR(0)                  '& CALL BEEP ROUTINE
2150 IFA$=CHR$(13)THENRETURN    '<RETURN> - EXIT TO MAIN MENU
2160 IFASC(A$)<32ORASC(A$)>95THEN2110
2161                            'CHECK FOR TEXT ONLY
2170 POKEAD,ASC(A$)             'POKE ASCII CODE INTO MEMORY
2180 AD=AD+1                    'NEXT MEMORY ADDRESS
2190 PRINTA$;                   'ECHO TO SCREEN
2200 FORT=1TO50:NEXT            'DELAY
2210 GOTO2100                   'BACK FOR NEXT CHARACTER
2999 'EXAMINE **************************************************
3000 GOSUB4000                  'SELECT BANK & ADDRESS
3010 CLS
3020 PRINT"PRESS <SPACE> FOR NEXT LINE OF"
3030 PRINT"CHARACTERS OR <RETURN> TO EXIT."
3040 PRINT
3100 FORX=1TO32
3110   PK%=PEEK(AD)             'FETCH CHARACTER CODE
3120   IFPK%<32THENPK%=95       'CHECK FOR PRINTABLE ASCII CODE
3130   PRINTCHR$(PK%);          'PRINT CHARACTER
```

GOTO PAGE SIX

```
3140   AD=AD+1                    'NEXT MEMORY ADDRESS
3150 NEXT                         'REPEAT FOR LINE OF TEXT
3200 A$=INKEY$:A$=INKEY$          'WAIT FOR <SPACE> OR <RETURN>
3210 IFA$=CHR$(32)THEN3100        '<SPACE> - NEXT LINE OF TEXT
3220 IFA$=CHR$(13)THENRETURN      '<RETURN> - EXIT TO MAIN MENU
3230 GOTO3200                     'BACK IF NEITHER
3999 'SELECT BANK & ADDRESS ***********************************
4000 CLS
4010 PRINT@33,"SELECT MEMORY BANK (1-3)";
4020 INPUTBK%                     'SELECT BANK
4030 OUT127,BK%                   '& SWITCH IT IN
4040 PRINT@97,"SELECT STARTING ADDRESS:-"
4050 PRINTTAB(2);"(49152-65535)";
4060 INPUTAD                      'SELECT ADDRESS,
4070 IFAD>65535ORAD<49152THEN4040
4071                              'CHECK RANGE
4080 AD=AD-65536                  '& CONVERT IT TO LEGAL ADDRESS
4081                              'FOR POKE COMMAND
4090 RETURN
```

(VZ)

* QUICKWRITE NOTES *

PRINTER INTERFACE UNITS.

Some purchasers of our QUICKWRITE WORDPROCESSOR are having printer problems. The printer is not being switched to the selected mode/s IE, Italics, Expanded, Condenced and so on.

This is due to the hardware (electronic) differences in the printer interfaces. ***It is not due to the QUICKWRITE software.*** In due course the writer of QUICKWRITE, Mr Leslie Milburn, will arrange the software to take care of the problem. A similar thing happens with the DSE. Editor Assembler; I have published in earlier LE'VZs patches to "fix" the problem. There appears to be at least two different printer interfaces. The unit that I have that is OK has two extra transistors soldered on the track side of the printed circuit board (PCB). Also two of intergrated circuits (IC) are in parallel to the Centronics connecting cable. The numbers on the PCB are: 7003580 35 033300.

The interface that will not work has only one IC in parallel to the cable connector and is numbered: 7003586 35 0333 00.

If anyone can throw more light on the subject, or can furnish us with a circuit diagram of the interfaces, PLEASE let us know.

(VZ)

-- HELP - HELP - HELP --

Mr Michael Novakovic would like to buy these old DSE game tapes.
PLANET PATROL, TENNIS. DEFENCE PENETRATOR.
His address:- 24 Albert St., GOODNA. QLD. 4300.

Various folk have enquired where to purchase the 32K Static RAM I/C, PD43256C as used in the article in LE'VZ #17.

In Brisbane:- Economic Electronics, 24 Campbell St., BOWEN HILLS. QLD. 4006. Phone (07)252 3762.
In November their price was $28.00 plus 20% s/tax = $33.60 each.

In NEW ZEALAND, The Microcomputer Electronic Co. Ltd., P.O. Box 9224, Newmarket, Auckland. Late 1987 their price was NZ$28.00 each which includes s/tax, but there is a catch. Their minimum sale is NZ$30.00.

I have also had a few enquiries about the Listening Post system that was published in Australian Electronic Monthly last year. If I remember correctly, it was for the Commodore computer. Has anyone written software so that the VZ can use the system?
If any readers have this information, please let me know or perhaps write an article for publication in LE' VZ.

*** Marie and I wish that you, your family and friends have a very happy EASTER. ***

STOCK CONTROL PROGRAMME.

This is part two (final) commenced in LE'VZ #18.
It is written by Mr David Martin.

```
5155 PRINTA$(I);" ENTERED!"
5160 A(I,1)=A(I,1)+A
5170 PRINT"ANY MORE STOCK TO ORDER (Y/N)"
5180 IFINKEY$<>""THEN5180
5190 IFINKEY$=""THEN5190
5200 IFINKEY$="Y"THEN5000ELSE200
5500 REM SEARCH ON NUMBER
5510 GOSUB10
5520 IFVAL(B$)=A(I,4)THEN5110
5540 GOTO5080
6000 CLS:PRINTZ$;" OR NUMBER"
6020 INPUTB$
6030 IFB$=""THEN200
6032 IFASC(B$)>57ORASC(B$)<49THEN6040
6034 GOTO6500
6040 FORI=0TONO-1
6060 IFA$(I)=B$THEN6100
6070 NEXTI
6080 GOTO2070
6100 PRINTA$(I);" # ";A(I,4)
6105 PRINT"AMOUNT ON ORDER ";A(I,1)
6110 PRINT"ENTER AMOUNT RECEIVED"
6120 INPUTA
6130 A(I,0)=A(I,0)+A
6140 A(I,1)=A(I,1)-A
6150 IFA(I,1)<0THENA(I,1)=0
6160 PRINT"RECEIVED ";A;" OF ";A$(I)
6170 PRINT"ANY FURTHER STOCK RECEIVED (Y/N)"
6180 IFINKEY$<>""THEN6180
6190 IFINKEY$=""THEN6190
6200 IFINKEY$="Y"THEN6000ELSE200
6500 REM SEARCH ON NUMBER
6510 GOSUB10
6520 IFVAL(B$)=A(I,4)THEN6100
6540 PRINT"NUMBER NOT FOUND PRESS RETURN":INPUTDD:GOTO200
7000 CLS
7010 A=0
7020 FORI=0TONO-1
7030 IFA$(I)=""THEN7200
7032 K%=1:GOSUB 2130
7040 IFA(I,0)+A(I,1)>=A(I,2)THEN7200
7045 A=1
7050 LPRINT"PRODUCT:-";A$(I)," # ";A(I,4),
7080 LPRINT"SUPPLIER:-";S$(I),
7090 LPRINT"RE-ORDER QUANTITY."A(I,3)
7200 NEXTI
7205 IFA=0THEN7500
7210 LPRINTL$+L$
7211 LPRINT"========================================"
7500 CLS
7505 IFA=0THENPRINT@261,"NO ITEMS TO RE-ORDER":FORV=1TO900:NEXTV
7520 K%=0:GOTO200
8000 REM SAVE DATA TO DISK
8005 PP=1
8010 CLS:IFNO<1THEN14000
8020 PRINT@418,"[illegible]
8025 OPEN"N.2",1:CLOSE"N.2"
8026 OPEN"LIST1.3",1:CLOSE"LIST1.3"
8030 ERA"N.2":OPEN"N.2",1:FR#"N.2",NO:CLOSE"N.2"
8040 ERA"LIST1.3":OPEN"LIST1.3",1
8050 FORL=0TONO-1
8060 PR#"LIST1.3",A$(L),S$(L),A(L,0),A(L,1),A(L,2),A(L,3)
8062 PR#"LIST1.3",A(L,4),A(L,5),A(L,6),A(L,7),A(L,8),A(L,9)
8070 PRINT@205,"SAVING":PRINT@236,NO;":";L
8080 NEXT
8090 CLOSE"LIST1.3"
8100 IFPP=10THENCLS:END
8140 GOTO200
9000 CLS
9005 LPRINT,"STOCK SUPPLIERS LIST":LPRINT
9006 LPRINT"STOCK #","STOCK REFERENCE CODE","SUPPLIER"
9010 FORI=0TONO
9020 IFA$(I)=""THEN9070
9040 LPRINTUSING"######";A(I,4);
9050 LPRINTTAB(16);A$(I);TAB(47);"  ";S$(I)
9070 NEXTI
9500 GOTO200
10000 CLS:REM ENTER DATA FROM DISK
10005 PRINT@266,"[illegible]"
10010 OPEN"N.2",0:IN#"N.2",NO
10015 CLOSE"N.2":IFNO=0THEN14000
10016 OPEN"LIST1.3",0
10020 FORL=0TONO-1
10030 IN#"LIST1.3",A$(L),S$(L),A(L,0),A(L,1),A(L,2),A(L,3)
10032 IN#"LIST1.3",A(L,4),A(L,5),A(L,6),A(L,7),A(L,8),A(L,9)
10035 NEXT
10040 CLOSE"LIST1.3"
10070 GOTO200
10100 END
12000 CLS
12010 K=0:D=0
12020 FORD=0TONO-1
12025 IFD=NOGOTO12050
12030 PRINTLEFT$(A$(D),15),USING"######";A(D,4)
12040 K=K+1:IFK=12THENK=0:D=D+1:K$="X":GOTO13000
12045 NEXT
12050 PRINT@450,"PRESS RETURN FOR MENU";
12060 INPUTH
12070 GOTO200
13000 PRINT@450,"[illegible]"
13002 IFINKEY$<>""THEN13002
13004 IFINKEY$=""THEN13004
13006 K$=INKEY$
13010 IFK$=" "THENCLS:GOTO12020
13020 IFK$="M"THEN200
13030 GOTO13000
14000 CLS
14010 FORC=1TO3
14020 PRINT@235,"[illegible]"
14030 FORDD=1TO300:NEXT
14040 PRINT@235,"       "
14045 FORWW=1TO300:NEXT
14050 NEXTC
14060 GOTO200
15000 CLS:TW=0:TR=0
    ";
```

GOTO PAGE EIGHT

```
15010 FORI=0TONO-1
15015 KZ=1:GOSUB2130
15020 TW=TW+A(I,8):TR=TR+A(I,9)
15030 NEXTI
15040 PRINT@100,"TOTAL W/SALE ";USING"$$######.##";TW
15050 PRINT@132,"TOTAL RETAIL ";USING"$$######.##";TR
15060 PRINT@295,"PRESS [SPACEBAR]":INPUTVV:GOTO500
19000 TW=0:TR=0
19100 IFNO<1GOTO200
19500 LPRINTCHR$(14);TAB(16);"STOCKLIST"
19510 LPRINTL$;CHR$(15)
20001 LPRINT"STOCK";TAB(8);"DESCRIPTION";TAB(21);"QTY";
20005 LPRINTTAB(27);"W/SALE";
20010 LPRINTTAB(38);"+TAX";TAB(46);"RETAIL";TAB(54)"-TAX";
20020 LPRINT"      TOTAL     TOTAL "
20030 LPRINT" NO ",,,"                W/SALE    RETAIL"
20040 LPRINTL$+L$:LPRINT
21000 FOR I=0TONO-1
21010 LPRINTUSING"####";A(I,4);
21012 LPRINTTAB(6);LEFT$(A$(I),14);
21020 LPRINTTAB(20);USING"####";A(I,0);
21030 LPRINTTAB(23);USING"$$#####.##";A(I,5);
21040 LPRINTTAB(32);USING"$$#####.##";A(I,5)+(A(I,5)*A(I,6));
21050 LPRINTTAB(41);USING"$$#####.##";A(I,7);
21060 LPRINTTAB(50);USING"$$#####.##";A(I,7)-(A(I,5)*A(I,6));
21070 LPRINTTAB(59);USING"$$######.##";A(I,8);A(I,9)
21080 TR=TR+A(I,9):TW=TW+A(I,8)
21090 NEXT
21100 LPRINT:LPRINT
21110 LPRINTTAB(50);"==========="
21120 LPRINTTAB(60);USING"$$######.##";TW;TR
21150 LPRINTTAB(60);"==========="
21160 LPRINTL$+L$:LPRINT:LPRINT
21170 GOTO200
```

THIS IS THE MENUE.

```
      STOCK CONTROL
OPTIONS:-
0 PRINT REF CODES & SUPPLIERS
1 ENTER/CHANGE STOCK ITEM
2 VIEW ITEM DETAILS
3 DELETE OLD STOCK ITEM
4 SALES
5 ORDER STOCK
6 ENTER STOCK RECEIVED
7 PRINT ITEMS TO RE-ORDER
8 SAVE STOCK FILE
9 VIEW NAMES IN FILE
CHOOSE OPTION (0-9)
OR HIT (SPACE) FOR MORE OPTIONS
```

(VZ)

CHIP 8

PROGRAMMING

INTODUCTION.

By Frank Rees.

27 King St., BOORT. VIC 3537.

CHIP 8 is a simple, powerful, fast and easy to learn interpretive language designed by ***Joe Wisebecker*** of the U.S.A.

It was written with a philosophy which was only followed in the RCA and DREAM 6800 versions. The RCA version loaded CHIP 8 interpreter into RAM and with the DREAM 6800 it was loaded into an EPROM.

The language is made up of four Hex character instructions which are easy to remember and implement. So moving graphics programmes become easy to write, even by todays standard of graphics with chips like the 6847 to do the work and only BASIC for the most part to control them.

CHIP 8 used a 1K Hex block of memory to store its instructions so that only 000 to FFF Hex or 12 bit addressing was required; this resulted in beautifully simple instructions, IE, 0MMM which meant "GOTO or CALL machine language programme or routine at location MMM. 1MMM was GOTO CHIP 8 SUBROUTINE at MMM, and 2MMM was GOSUB to CHIP 8 SUBROUTINE at MMM. AMMM points to location MMM.

This simplicity of instruction set was one of the reasons for speed of CHIP 8 and made it so easy to learn that in its heyday, DREAM 6800 had excess of 400 followers at least in Australia. These would have been folk building their own computer.

Currently CHIP 8 is available for the Microbee and the VZ. The "Bee" can run original CHIP 8 programmes with little or no change. The VZ and MC10 versions will present you with a small picture in the top left-hand corner of the VDU. Unless you make a job of re-writing most of the programme to enlarge it, this is of little use.

The addition of colour, Hi-Res etc, did little for CHIP 8 and only original RCA and Dream 6800 show a nice clear chunky graphic picture using a simple interpreter with a small instruction set that's easy to learn.

Much has been written in Australia and some of the programmes are still available in books such as ***Computers and Computing in ETI, volume 4.***

I have written a considrable amount on CHIP 8 and am glad to help any LE'VZ reader who would like to study CHIP 8 programming.

For those who have started to study CHIP 8, see if you can work this one out. How to move 16 bytes from A to B using only four instructions. That's right, only 16 key strokes to run and move 16 bytes.

Please send a S.A.S.Envelpe with enquiries.
Frank Rees.

To check if you have worked it out or would like to know how easy it is done, ***GOTO page ten.***
(VZ).

BOB KITCH'S INFORMATION LIST Part 2.

This concludes the list, which was commenced in LE'VZ #18. (VZ).

1983 "Second Book of Programs". DSE, 57 p. (60)

Rowe, J., 1983 "VZ-200 Technical Reference Manual". DSE, 22 p. (30)

- 1985 "VZ-300 Technical Manual". DSE, 39 p. (65) (Available from DSE $14.95)

Hartnell, T., 1986 "Programming the VZ300". DSE, 171 p. (Available from DSE $14.95)

Hartnell, T., 1986 "The Giant Book of Games for the VZ300". DSE, 278 p. (Available from DSE $19.95)

Hartnell, T., 1986 "The Amazing VZ300 Omnibus". DSE, 188 p. (Available from DSE $19.95)

Wolf, G., 1985 "ROM-listings fur Laser 110, 210, 310 und VZ200". Vogel-Buchverlag. 278 p.

Wolf, G., 1985 "Der BASIC-Interpreter in Laser 110, 210, 310 und VZ200". Vogel-Buchverlag. 152 p.

Wolf, G., 1985 "Das Laser-DOS fur Laser 110, 210, 310 und VZ200". Vogel-Buchverlag. 131 p.

Sanyo, 1984 "Mein Laser Home-Computer, Tips and Tricks fur Einsteiger". Sanyo Video Vertrieb. 91 p.

Sanyo, 1984 "Laser Home-Computer, Software-System Handbuch I". Sanyo Video Vertrieb. 114 p.

BOOKS ON BASIC

Albrecht, R.L., Finkel, L., & Brown, J.R., 1978 "BASIC". John Wiley, 2nd Edition. 325 p.

Albrecht, B., Inman, D., & Zamora, R., 1980 "TRS-80 BASIC". John Wiley. 351 p.

Inman, D., Zamora, R., & Albrecht, B., 1981 "More TRS-80 BASIC". John Wiley. 280 p.

Lien, D.A., 1982 "Learning TRS-80 BASIC". Compusoft. 528 p.

Gratzer, G.A. & Gratzer, T.G., 1982 "Fast Basic - beyond TRS-80 BASIC". John Wiley. 278 p.

Rosenfelder, L., 1981 "BASIC Faster and Better and other mysteries". IJG, California. 288 p.

BOOKS ON ASSEMBLER AND Z80

Carr, J.J., 1980 "Z80 Users Manual". Reston Publishing Co., 326 p.

Weller, W.J., 1978 "Practical Microcomputer Programming: the Z80". Northern Technology. 481 p.

Fernandez, J.N., & Ashley, R., 1981 "Introduction to 8080/8085 Assembly Language Programming". John Wiley, 303 p.

Miller, A.R., 1981 "8080/Z80 Assembly Language-techniques for improved programming". John Wiley. 318 p.

Leventhal, L.A., 1979 "Z80 Assembly Language Programming". Osborne/McGraw-Hill.

Leventhal, L.A., & Saville, W., 1983 "Z80 Assembly Language Subroutines". Osborne/McGraw-Hill. 497 p.

Nitschke, W., 1985 "Advanced Z80 - Machine Code Programming". Interface Publications. 342 p.

Nichols, J.C., Nichols, E.A., & Rony, P.R., 1979 "Z-80 microprocessor programming and interfacing - Book 1". Howard W. Sams. 302 p.

Nichols, J.C., Nichols, E.A., & Rony, P.R., 1979 "Z-80 microprocessor programming and interfacing - Book 2". Howard W. Sams. 494 p.

Nichols, J.C., Nichols, E.A., & Musson, K.R., 1983 "Z-80 microprocessor advanced interfacing with applications in data communications". Howard W. Sams. 347 p.

Bardon, B., 1979 "TRS-80 Assembly-Language Programming". Radio Shack. 224 p.

Bardon, B., 1982 "More TRS-80 Assembly-Language Programming. Radio Shack. 430 p.

Farvour, J.L., "Microsoft BASIC Decoded and other mysteries". IJG, California. 310 p.

Sargent, M., & Shoemaker, R.L., 1981 "Interfacing Z80 microcomputers to the real world". Addison Wesley. 288 p.

Ullman, J., 1984 "Pocket Guide Assembly Language for the Z80". Pitman. 58 p.

Overaa, P.A., 1984 "Teach Yourself Assembler Z80". Century Communications, London. 236 p.

Barrow, D., 1985 "Assembler Routines for the Z-80". Century Communications, London. 192 p.

Uffenbeck, J., 1985 "Microcomputers and Microprocessors: the 8080, 8085 and Z80 - Programming, Interfacing and

* WORD PUZZLE *

Here is a little puzzle to give you a rest from programming. There are sixteen words hidden amongst the letters. The words are of different length, all Australian towns and cities and are printed in any direction. That is horizontal, vertical, diagonal and perhaps zig-zag fashion.

The answer print in on page 16 .

Have fun.

AUSTRALIAN TOWNS & CITIES.

```
D F U F M N P M R T A K F E U   ————————
P D Z E O H W N L H N K Y R S   ———————
O J U E L T S A P A O H I W I   ———————
O M P B E I E S R I T B I K Q   ———————
W Z A E L H Z X Y R C R A L I   ———————
O H W R M I A A A D A T O R L   ——————
N C B N T P N N B S N B O B T   ——————
G Q L E W I W Z W E L E R N E   —————
G W S E L O N L S G T R Y I I   —————
T E T O V L T S X Z O H W X Y   —————
K R M I F E Y K V E L H L C D   —————
H S E H B L L V O I D C L D W   —————
I W H R C R J A X O L K S L F   ————
I Y D U Y B Z R N Y C L F K K   ————
K D U B S I Y H T D U N E W N   ———
                               ———
```

BVZUW CONTINUED FROM PAGE 15.

Thanks also to Larry Taylor, Stan Noble, Bob Jones, Eddie Tomes and Eunice & Ron Shanahan for bringing their equipment. Larry had some of his excellent educational software on display (available from VSOFTWAREZ). Stan showed how a little ingenuity goes a long way; he has adapted a Tandy joy stick to suit his VZ. Eunice & Ron brought their "Silver Reed" Daisy-wheel typewriter which interfaces with their VZ. Thanks to Eddie and his family for painting and erecting the direction and information signs in the vicinity of the school. Thanks also to Bob Jones for contributing the materials for the signs. My apologies to anyone I have forgotten.

That's all for now; wishing all a happy and prosperous 1988.

JOHN WILKINS.

+++ NEW VZ BOOK +++

VZ200/300 ASSEMBLY LANGUAGE MANUAL FOR BEGINNERS.
By Steve Olney.

A$25.00. NZ$28.00.

This book is a credit to Steve as it is technically fine and very well presented. It is in A4 format, spiral bound of 140 pages. Most of what a beginner requires in attempting Machine language or Assembly programming. It includes some simple routines that do something visible so the user can see some responce for his/her efforts.

(VZ)

CHIP 8 PROGRAMMING ANSWERS.

From page eight.

The answer is either Method 1 or Methoc 2.

Method 1.

ADDRESS	INSTRUCTION	COMMENTS
MMMM	AMMM	Set pointer to data start
	FF65	LoadV0-VF there
	AMMM	Set pointer to destination
	FF55	Store V0-Vf starting there

Method 2.

MMMM	AMMM	Set pointer to data start
	6A00	VA=0 use as screen X cord
	6B04	VB=4 use as screen Y cord fourth line down
	DAB0	Display data starting at X,Y 16 bytes, 8 bytes apart
MMMM	DATA	16 bytes (*8)
	XXXX	
	XXXX	
	XXXX	
	XXXX	
	XXXX	
	XXXX	
	XXXX	
	XXXX	

Note that method two can move graphics (128 Pixels) to screen or use screen as a tempory store of 16 bytes IE, a stack to store copy of all variables, 0 to F.

Frank Rees.

LE'VZ FORMATS.

To help me time-wise to make LE'VZ a better magazine, and yourself to get the most out of it, please read this page.

ALL PRICES are in Australian Dollars.

CURRENT ISSUE price is A$2.00 which includes surface/air postage within Australia and Air Mail to New Zealand. If you require more than one copy at one time, extra money must be sent to cover postage.

LE'VZ IS (C) COPYRIGHT.

NEW MEMBERS must start by sending $4.00 as I do not charge a yearly subscription. This makes it worth while entering your name, address and other data into our D'BASE. You then receive the current issue if it is in a certain time period between the main send LE'VZ runs. If that is close to the next issue, you will recieve that and not the "old" current issue. New Members can send more than $4.00, as long as it is in multiples of $2.00.

Present OOPs have their $ credit printed at the top of their name and address label if sent in the main run. If your credit is less than $2.00., then a little reminder slip is included with the LE'VZ sent, stating that this is your last issue. Some folk have various money amounts left over from other software or hardware purchases put into their LE'VZ credit, and so odd $ amounts do occur.

BACK ISSUES are from #8 to the current issue. The price is $3.00 each. This includes surface/air postage within Australia and Air Mail to New Zealand. If you require more than two copies at one time, extra money must be sent to cover postage.

We usually have most Back Issues in stock. We send what we have and back order the others for you if required. If they are not sent within a couple of months, or with the next Current issue, please remind us.

GENERAL LIST refers to OOPs who want their name, address and data made available to other OOPs when asked for. You may like to contact OOPs in your state, or OOPs with VZ200s. Not all OOPs want their name and information made public, so if that applies to you, you must answer N (no). IF YOU DO NOT WANT YOUR INFO MADE PUBLIC, ANSWER N (no) ON THE DATA SHEET. IF YOU DO NOT ANSWER Y (yes) OR N (no) THEN YOU WILL AUTOMATICALLY BE PUT ON THE GENERL LIST.

Remember, you may receive letters from OOPs months after you may have sold your VZ.

ANY COMMUNICATION to me that requires a written reply must be accompanied by a Self Addressed Stamped Envelope. Do not expect an immediate reply, as I may need to contact others to formulate an answer.

Always state your record number. That could be between A02 and A98, B01 and B98 or C01 and CXX. I have about 240 financial and unfinancial folk to keep track of. From LE'VZ #15, your record number and $ credit are printed at the top of your name and address label.

DO NOT TELEPHONE ME ON SUNDAY!!!

CIRCUIT, ROM and PROGRAMME LISTING PRINTOUTS can be sent to you at 20C per A4 page plus postage. Do not ask for the complete VZ ROM listing as it is very long and is about 15MM in thickness.

LETTERS TO THE EDITOR are welcome either as general comments, complaints or asking for help. As with contributors, please ensure that your typewriter or printer prints clear and DARK. In the new 35 character normal size print, IE. 90MM line length, right justified or wragged. If you have to write by hand, use a RED pen and write in the format just mentioned.

ADVERTISING is a free service to OOPs who are financial, for personal use only. Please use the above 35 character format. About 100 words or less.

CONTRIBUTIONS are very welcome. Please write your letter on a separate piece of paper to your contribution, which allows separate filing of material. You can send in programme listings in M/L or BASIC. Hardware modification or equipment drawings. Hints and any useful information. As above, use the new 35 character format except if it is a large circuit, drawing or photo. If it is a full page contribution reduce by photo copying so that there is a 20MM margin all the way around.

In fact I would like to receive more hardware contributions. Also photos of your equipment would interest others. There is a little problem here though as different photo copyiers reproduce certain colours differently. We can but try.

BASIC AND M/L PROGRAMME LISTINGS need special requirements. Programme listings in M/L or BASIC can be sent as printed in normal size print which I can reduce-copy to make the master. Please make sure the print is dark and clear. The better approach is to send the programme on disc or tape. This enables me to give it a short test and check that it does at least does RUN. I can then print it in reduced mode while <LISTing> it.

TAPE/DISC CONTRIBUTIONS are therefore the best to send in this regard. This applies to programme listings or text. In regards to text, please send on E&F Wordprocessor tape which I can convert to QUICKWRITE Wordprocessor files or QUICKWRITE files on disc. Send in a padded post bag, and we will return it to you as soon as possible. We will pay the return postage. In this way if if it is a programme, it can be later issued as a PUBLIC DOMAIN programme. You must let me know if you will allow this to happen.

VPROGRAMMEZ-VHINTZ-VHARDWAREZ book. People have suggested that I publish a second book, so please let me have permission in WRITING if you would like any of your contributions included in it.

Finally, I do not promise to print any or all contributions, this is at my discretion.

Muchas Gracias.

INFORMATION CONTACTS.

Here are some other folk who you can contact. Always include a SASE. if you require a written reply. If you don't live in the same country, send a couple of International Reply Coupons. These are available a Post Offices througout the world. Please use good judgement if you telephone, perhaps not on Sundays. Check with the person concerned.

Graphics, M/L, printer info, educational.
Mr.Larry Taylor, 4 Columbia Court, SPRINGWOOD. QLD. 4127. 'phone (07)208 1258.

M/L, hardware, BASIC programming and his special list of all types of info.
Mr.Bob Kitch, 7 Eurella St., KENMORE. QLD. 4069. 'phone (07)378 3745.

Software list.
Mr.Eddie Tomes, 3 Kilkenny St., CAPALABA. QLD. 4157. 'phone (07)390 2797.

Printer/Plotters.
Mr.Stan Noble, 307 Mt.Crosby Rd., CHUWAR. QLD. 'phone (07)281 7854.

Communications, Modems, RTTY.
Mr.Irving Spackman, 78 Waima Crescent, TITIRANGI. AUCKLAND. New Zealand.

RTTY Units.
Mr.Col Paton. VK4BCP. 225 Pallas St., MARYBOROUGH. QLD. 4650 'phone (075)221 090.

Chip 8 programming.
Mr.Jeremy Lee, c/o P.O. Box 221, ASHGROVE. QLD. 4060 'phone (07)379 7988.

My son, forget not my law, but let thine heart keep my commandments::

Proverbs 3.1

SORTING PROGRAMMING EXPLAINED

By Mr Gordon Browell.

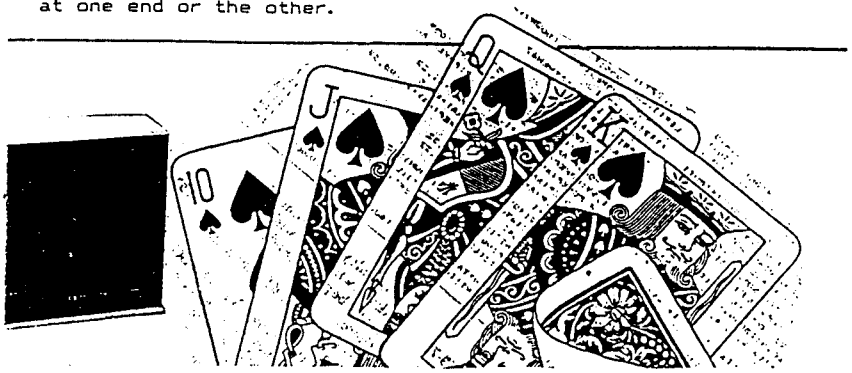
Gordon presents this subject in his special style.

When you have grown tired of playing games on your computer and have no particular use for your word-processor, data base, spread sheet and other utilities, there is an exercise you may like to try. If you can invent a quicker method of sorting lists of either numbers into numerical order, or words into alphabetical order, you could become famous. Some such inventors have even gone into tinkering with the binary coding in the Inner Sanctum of computers. It is very useful to know how the most popular sorts of sorts actually work. Here we will attempt to explain the various popular methods of sorting and to assist my explanations you will need the complete suit from a pack of playing cards, 13 cards from Ace to King. So while you are looking for a pack of cards and taking out one complete suit, I will be figuring out the best way of keeping the explanations simple. What is daunting is that I have read explanations in books and magazines and have never found one that is truly comprehensible. Anyhow, here is my effort...

PUSH-DOWN SORT

This Sort is extravagant in both time and memory space. It should be used for short lists only. Generally, but not always it is used to sort entries as they are INPUT. Each entry is compared with the preceding entries and put into order between RETURN and INPUT. Often it is necessary to enter the number of items to be entered at the beginning. For short lists it is a good system because the sorting time is hidden between the INPUTs. However, as you will see, the sorting time gets progressively longer and longer and longer.

Make_sure your 13 cards are in random order then place one face up, on the table. Being only one card it is already sorted. Place the second card on the table to the right of the first card. If card no.2 is a higher card than no.1 then swap them over, otherwise leave them as they are. Place card no.3 to the right of card no.2. Now compare card no.3 with card no.1 and swap if necessary and go back to card no.5 and compare it with no.2 and swap if necessary. Now go to card no.2 and compare it with card no.1 and, again, swap if necessary. The three cards should now be in numerical order. You've guessed it. Put card no.4 to the right of no.3. Compare and swap (if necessary) card no.4 with 1, then 2, then 3. Go back to card no.3 and do a comparison check with 1, then 2. Back again to no.2 amd make a comparison check with no.1. Phew! Do you get the feeling that you are repeating yourself. Told you it was extravagant. However, continue, one new card at a time. Eventually you will arrive at a fully sorted suit of cards. You should have made the Ace a low card; a ONE, but it doesn't matter. It'll end up at one end or the other.



PUSH-DOWN SORT example.

A MICRO MAGIC program. August 1986.

```
100 CLEAR2000:DIMZ(100)              Dimensioned for 100 items.
110 INPUT"HOW MANY ITEMS";L          Number of items to be sorted.
120 FORN=1TOL-1                        -1 as LOOP is FROM 0 (NOT 1).
130 PRINT"ITEM"N+1;:INPUT"ENTER NUMBER";Z(N)
140 IFN=0THEN160                     We cannot sort just one item.
150 GOSUB200                          To the SORTING sub-routine.
160 NEXT                             Collect the next entry.
170 FORP=0TON-1:PRINTZ(P):NEXT       Print the sorted list.
180 GOTO100                            'ave another go.

200 FORI=JTO0STEP-1:FORJ=0TON-1
210 IFZ(J)>Z(J+1)THENTEMP=Z(J):Z(J)=Z(J+1):Z(J+1)=TEMP
220 NEXT:NEXT:RETURN
```

GOTO PAGE THIRTEEN.

• World Expo 88 opens in Brisbane on April 30 and closes on October 30.

EXPO NATIONAL, SPECIAL DAYS

May 9: Union of Soviet Socialist Republics.
June 1: Kenya (Madaraka).
June 6: Queensland.
June 14: Spain.
June 18: Australia.
July 1: Canada.
July 4: United States of America.
July 8: Japan.
July 16: California.
July 20: People's Republic of China.
July 23: France.
August 1: Switzerland.
August 5: United Kingdom.
August 15: Republic of Korea.
August 17: New Zealand.
August 20: Hungary.
August 22: Kobe City.
August 23: Saitama Prefecture.
August 24: Vanuatu.
August 25: Indonesia.
August 26: Cook Islands.
August 27: Federal Republic of Germany.
August 30: Solomon Islands.
August 31: Malaysia.
September 3: Western Samoa.
September 16: Papua New Guinea.
September 17: Thailand.
October 1: Cyprus.

Did you hear about the Russian company of soldiers answering roll call?
The sergeant sneezed and six soldiers called out, "Here!"

Father's Day is just like Mothers Day only you don't have to spend so much...

The above sort can be used after all the entries have been entered. The sorting routine would simply draw upon the stored items one by one. The reason why it is called a PUSH-DOWN SORT is because information is said to be in a STACK and the information is drawn from the stack on the principle of *last in first out*. As an analogy, using your 13 cards, stack them with only the top card showing. Now try a PUSH-DOWN SORT. Place the top card by the side of the stack. You can now compare it with the top card of the stack. Swap them over if the top card of the stack is a higher card. The only way you can continue is by beginning a third stack and then comparing the top card of the 1st stack with those on the top of the other two stacks. The final stack of sorted cards is seen to be, being pushed down. That's all, but you should now see why this sort of sort is extravagant in memory space as well as in sorting time.

WARNING My VZ-200s contain bugs. Yours too, possibly. Not yet having a VZ-300 I do not know if one particular bug is in those VeeZeds also. If a loop such as FORI=1TO13:PRINTI:NEXT is run you would expect that I would end up as 13. But on my VZ-200s I ends up, for some unaccountable reason, as 14. To check your computer try this test loop:

FORI=1TO13:PRINTI;:NEXT:PRINT"I="I

If you too get I= 14 then your computer has caught the bug. In a Sorting program the Variable used to count the number of entries may need to be reduced by 1, otherwise you may be trying to make a swap with a entry that doesn't exist and an ERROR MESSAGE will appear in a line where no error can be found.

Two more points before going onto another SORT system. If the Sorting program is dealing with whole numbers, then all the variables should have a PERCENT sign after them. Like Z%(N), but you knew that didn't you. The second point is that often you will see in a Sorting progtam a DUMMY item which may look like this: Z$(0)="ZZZ". This would be sorted down to the end of the list. This is very useful as it can be used to indicate when a list is ended. The ZZZ can produce STOP TAPE, both when Tapesaving and Retrieving. Then there would be no need to keep a record of how many items are on the tape. (VZ)

STOP PRESS

FOR SALE

A complete system with twenty four programme tapes.
Three VZ200 computers
GP 100 printer
and various hardware.
Books and instructional manuals.
Many other newsletters and printed material.

Contact:-
Mr Gordon Browell, 13 Brooks St.,
BIGGENDEN. QLD. 4621.
Phone (071) 271 524.

A batch of programme tapes.
These are from a LE'VZ reader.
There are twenty altogether. Utilities, Games, Business etc.
All original, NOT pirated.
Too many to list. A$5.00 used each.
Contact us:-
VSOFTWAREZ, address elsewhere.

* CHRISTMAS MINI EXPO *

My *Third Annual Christmas Mini-Expo* held in co-operation of the *BVZUW* in the Capalabe State High School on Saturday the 5th. of December last was a great success. There is another report on it in the *BVZUW* on page 15.

I thank Mr Eddie Tomes for opening the school so early. I arrived with my two passengers at about 8AM. We arranged the varios displays in three of the main class rooms in the libray building. We were pleased that Mr Gavin Williamson of *LASERLINK and Mr Mark Harwood of VZ USER* attended. Gavin demonstrated and sold much of his software and firmware (EPROMS). Mark helped Gavin and introduced folk to his User Group, *VZ USER.*

I gave a short opening address and then introduced Mr Norman Wilson who talked (in his usual interesting manner) and demonstrated his system that is a very good help to *sight handicapped people.* One person I spoke to said that he was practically mesmerised by Norms talk.

I demonstrated some of our software, managed to dispose of some of our workshop junk ---- er obsolete bits and pieces and have a video recorder running showing some of our software. I also played some other non computer related video for people. About a hundred people turned up at different times of the day which was great. Thanks to those folk who came from New South Wales and other far places. One couple Biggenden, QLD, attended, but unfortunatly I missed them.

The *Lucky Door Prize* was won by Mr Ron Wynyard, 135 Goddards Rd., YAMANTO QLD. The prize was really worth winning as it contained software, a book, software from *LASERLINK* and subscription to *VZ USER.* Thanks again Mark and Gavin.

(VZ)

Enjoying Norm Wilsons Lecture.

SOFTWARE FOR SALE FROM VSOFTWAREZ

39 Agnes St., TOOWONG. QLD. 4066. AUSTRALIA. (07) 371 3707.

All prices are correct at time of printing, but may change without notice. All articles available while stocks last. All prices in A$.
All tape software includes postage up to four tapes.
When ordering software, always state := which computer VZ200 or VZ300 , if you have an expansion RAM unit , and if you have a disc drive system connected or denote as below.

VZ1 = unexpanded VZ200. VZ2 = unexpanded VZ300.
VZ3 = expanded VZ200. VZ4 = expanded VZ300.

IE. TB15 = Tape only unit of B15. DB5 = Disc only unit of B5.
T/DE4 = Tape or Disc unit available of E4. TU4 = unit only available on Tape of U4. DU22 = unit only available on Disc of U22.
The price stated is for a Tape unit. If a Disc unit is required, add $5.00. to the Tape price. The price of a Disc unit is as stated.

We accept BANKCARD and VISACARD, as well as bank, building society, credit union, private cheques, or Aust Post money orders.
Make cheques payable to J.D'ALTON or VSOFTWAREZ.

As mentioned in my editorial, we will be closed all of April, May and part of June.
So please keep your your orders until we re-open.
We are sorry for any inconvenience this may cause.

* * * NEW SOFTWARE * * *

DU56. DISKOPS4. $10.00. VZ3-VZ4.
This is actually called DISKOPS4 + 2. It superceedes DU47 DISKOPS2 AND DU47A DISKOPS2 which are now Public Domain at the same price of $10.00.
There are three separate utilities on the disc, and are for use with the DSE. Editor Assembler unit. There are eleven additional commands. Instructions are included. DISKOPS4 + 2 patches in permanently with ED/ASS. It then allows LOADing, SAVEing of source code and BSAVEing object code to/from disc. BSAVEing is the same as TO: for tape.
It also includes the normal disc BASIC commands. If a disc error occurs, then DISKOPS4 + 2 BASIC is entered. ASS is to enable the return to the ED/ASS. BASIC does the reverse.
Users of DISKOPS1 and 2 are also catered for.

DB57. QUICKWRITE V4 $40.00. VZ3-VZ4.
This new version DOES NOT replace QUICKWRITE V3. The main difference being that V4 allows the user to imbed special character codes ANYWHERE in the text. This includes a single word or even part of a word, anywhere in a line of text. If you refer to LE'VZ #17 on page 14, I printed a short article about how to use the printer control codes for QW V3. The last one directs the printer to print in three styles, using thirteen codes. With QW V4 these are designed by the user and are represented by A SINGLE CODE CHARACTER and saved onto disc. A whole set of fonts can be built up by the user. I have been testing it for some months now in the publishing of the last few LE'VZ magazines.
QW V4 will also recognise the QW V3 square bracketed control codes. Printing a section of the text is also allowable, even one word.
KILL and RETRIEVE are additional Disc commands. Better editing/viewing facilities. Scrolling forward, backward, to beginning and end of text is easy to achieve.
Purchasers of QW V3 can buy QW V4 at a discounted price of AUD$20.00. An instruction booklet is of course included.

QUICKWRITE CAN ONLY BE PURCHASED FROM US.

If anyone requires a short description of any of our software, please refer to previous LE'VZs as all software is initialy given a brief description as NEW SOFTWARE. The alternative is to send for our catalogue, *VLISTZ.* Make sure you send a S.A.S.Envelope, 230MM x 100MM.

I would like to mention that a BASIC COMPILER and some other very interesting software is available by sending a S.A.S.E. to:-
Mr.Gavin Williamson, 20A Brunker Rd., BROADMEADOW. NSW. 2292
'Phone (069) 621 678.

+ EXISTING SOFTWARE. +

D/TU2	EDITOR/ASSEMBLER	$ 20.00.	VZ3-VZ4.
D/TB1	CASH BOOK LEDGER	$ 20.00.	VZ3-VZ4.
TU4	COLOUR GRAPHICS	$ 10.00.	VZ3-VZ4.
D/TE1	KEYBOARD	$ 8.00.	VZ1-VZ4.
D/TE2	WORDMATCHING	Deleted.	
D/TE3	MEATPIES	$ 10.00.	VZ3-VZ4.
D/TU3	UTILITYS	$ 15.00.	VZ2-VZ4.
TU5	WEAVING DRAFTS	$ 10.00.	VZ1-VZ4.
D/TE4	MATHS COUNTDOWN	$ 10.00.	VZ3-VZ4.
D/TE5	COORDINATES	$ 10.00.	VZ2-VZ4.
D/TE6	TOWER of HANOI	$ 8.00.	VZ1-VZ4.
D/TE7	MICROSCOPE	$ 8.00.	VZ3-VZ4.
D/TE8	BLOCK PUZZLER	$ 10.00.	VZ1-VZ4.
TE20	PLUS and MINUS	$ 10.00.	VZ1-VZ4.
TE24	MATHS	$ 15.00.	VZ3-VZ4.
TE25	QUEENSLAND	$ 10.00.	VZ1-VZ4.
TE27	EUROPEAN CAPITALS	$ 10.00.	VZ1-VZ4.
TE30	CAMPING	$ 10.00.	VZ1-VZ4.
D/TG2	MANSION and NOVA	Deleted.	
D/TG3	VZ MONOPOLY.	Deleted.	
TU12	SEARCHTAPE	Deleted.	
D/TG13	SCOTLAND YARD	$ 12.50.	VZ3-VZ4.
DB4	LE'VZ D'BASE	$ 98.00.	VZ3-VZ4.
TB15	DATABASE-VZ	$ 25.00.	VZ3-VZ4.
TG35	HAUNTED MANSION	$ 12.50.	VZ3-VZ4.
TU6	VZ EXTENDED BASIC	$ 20.00.	VZ1-VZ4.
TU7	PROTECT	Deleted.	
TU8	CMERGE/DELETE/REN	Deleted.	
TU9	MONITOR DEBUGGER	$ 25.00.	VZ1-VZ4.
This new version finds VZ memory size itself.			
TU10	EXTENDED BASIC	$ 12.50.	VZ3-VZ4.
TU11	ARRAY/RESTORE	$ 14.95.	VZ3-VZ4.
You must have TU10 to use TU11.			
D/TU12	FILESEARCH	Deleted.	
[illegible]	[illegible]	$ 50.00.	VZ3-VZ4.
T/DE9	MEATPIES VZ.	$ 15.00.	VZ3-VZ4.
TU18	LOAD XX80 FILES.	$ 20.00.	VZ1-VZ4.
This new version finds VZ memory size itself.			
T/DG36	BLACKJACK.	$ 20.00.	VZ3-VZ4.
T/DG37	POKER MACHINE.	$ 20.00.	VZ3-VZ4.
T/DG38	WORDSQUARES.	$ 10.00.	VZ2-VZ4.
T/DG39	COMPUTER MONOPOLY.	Deleted.	
T/DG40	TRIVIAL CULT.	$ 15.00.	VZ2-VZ4.
T/DG41	SCOTLAND YARD 2.	$ 15.00.	VZ3-VZ4.
DB5	LE'VZSTATEMENT.	$185.00.	VZ4.
DB16	CHEQUE LEDGER D.	$ 60.00.	VZ3-VZ4.
D/TU19	COPY/PROTECT.	$ 30.00.	VZ1-VZ4.
DU20	DISC GUARD.	$ 60.00.	VZ1-VZ4.
T/DU21	VZ-EPSON PRINT/P.	Deleted.	
DU22	DISK COPY.	$ 10.00.	VZ1-VZ4.
D/TU48	FILESEARCH.		
D/TG51	BLOCK 1.	$ 15.00.	VZ2-VZ4.
DPD1	PUBLIC DOMAIN.	$ 10.00.	VZ1-VZ4.
DPD2	PUBLIC DOMAIN.	$ 10.00.	VZ1-VZ4.

* NEW SOFTWARE *

D/TG44	MONOPOLY.	$ 17.00.	VZ3-VZ4.
D/TG45	MONOPOLY.	$ 19.50.	VZ4.
D/TG50	ESCAPE RIVER.	$ 15.00.	VZ3-VZ4.
D/846	QUICKWRITE.	$ 40.00.	VZ3-VZ4.
DU47	DISKOPS1.	$ 10.00.	VZ3.
DU47A	DISKOPS2.	$ 10.00.	VZ4.
D/TG42	AIRTRAFFIC CONTROLLER.	$20.00.	VZ3-VZ4.
D/TG43	LEARJET.	$ 20.00.	VZ3-VZ4.
D/TU49	VZ-EPSON PRINT/PATCH.	$ 15.00.	VZ1-VZ4.
D/TG54	GOLF.	$ 15.00.	VZ3-VZ4.
DU1	CONVERT2.	$ nil	VZ3-VZ4.
See DB46 QUICKWRITE.			
D/TG53	GALACTIC EMPIRES.	$ 15.00	VZ3-VZ4.
D/TE10	SNERTLE.	$ 10.00.	VZ2-VZ4.
D/TG51	BLOCK 1.	$ 15.00.	VZ2-VZ4.
D/TG52	SOLO BATTLESHIPS.	$ 15.00.	VZ2-VZ4.
D/U56	DISKOPS4 +2.	$ 10.00.	VZ3-VZ4.
DB57	QUICKWRITE V4.	$ 40.00.	VZ3-VZ4.

BRISBANE VZ USERS WORKSHOP

WORKSHOP HELD ON THE 6-12-87.

Well 1987 ended with our biggest meeting yet, the "BVZUW" was held in conjunction with John D'Alton's annual "MINI VZ EXPO". The day was a great success, with around 100 people attending.

The "MINI VZ EXPO" started with an extremely interesting address and demonstration by MR. NORM WILSON of his "BRAILLE PRINTER". Although converting Braille to conventional text and vice-versa is not a new concept, the problems which are sustained in making the device functional and accurate, are quite substantial. These problems are further increased when the device is to be operated by a blind person. Thus to smother the conversion device with complex control key clusters and assorted buttons is totally impractical for a visually impaired user. So Norm decided that it was necessary to create a device which could be coupled to a standard Braille typewriter, so at least the input device was familiar to the visually impaired user.

The standard Braille typewriter 'sits' over the device; once a Braille key is depressed and a Braille character is printed on paper, the Braille key also depresses one of several plungers on the device. This generates an input for the electronics which then assigns a conventional text character to a memory buffer until the user is ready to 'dump' the text to a printer or voice synthesizer.

Whilst this seems rather simple and sounds rather like an elaborate interpreter service, it is in fact a most complex problem for the electronic device. Braille is a written language which does not simply convert to conventional text characters. Braille contains many symbols which represent not only single words, but also phrases and numbers. Thus by combining keys on the Braille typewriter, sentences are constructed.

As far as the electronics are concerned, 'keeping-up' with the key depressions of the Braille typewriter and then converting these inputs into a printed English-equivalent demands fast, real-time processing. This being the case, Norm selected the Motorola 32 bit chip as the basis of the processing-operation circuitry. *(The Motorola 32 bit chips are part of the Apple MacIntosh family).*

From here, the electronics only become more complex (and that's an understatement) and the final output on a standard Epson printer reproduces what the blind person has printed in Braille on the Braille typewriter, in English (and indeed a host of other languages) for the non-visually impaired.

Norm has succesfully marketed his device here and overseas. We were all enthralled by his enthusiastic and entertaining address so I would like to take this opportunity, on behalf of the "BVZUW" to thank Norm and to wish him continued success in the future.

Three large class rooms were utilised and we had around 10 VZ 200-300 systems running for most of the day. Quite a few of those who attended were not VZ users and they were surprised to see what had been achieved with this small but very versatile machine.

John D'Alton had a large display of hardware and software for sale from "VSOFTWAREZ" some of which he made available as a lucky door prize, thanks John. We were pleased to welcome Gavin Williamson and Mark Harwood from N.S.W. who were demonstrating software from "LASERLINK", thanks also to them for their contribution.

Many thanks also to Bob Kitch for an interesting address on the internal workings of his "8 Slot I/O Expansion Mother Board". This piece of hardware can handle up to 8 peripherals at one time. At last no more unplugging the joy sticks to use the printer. It will also be useful for those who want to control their model railway equipment with the VZ. Bob also had an interesting piece of 3D graphics programming on display in the form of a rotating DODECAHEDRON (solid figure of twelve faces). It demonstrated that even though the VZ is rather limited in its graphics mode, the only true limit is your own imagination.

GOTO PAGE TEN

Mark Harwood at the Mini Expo.

Date .....19..... Code # if known ..... This LE'VZ number is 19.
Surname..... Mr, Mrs, Miss and Christian name.....
Address..... ..Post Code .....
Telephone number. STD( ) ..... Onto General List Yes/No.....
Computer. VZ200 and/or VZ300.....Any other computer.....
Printer and/or plotter.....Disc system Yes/No.....
RAM Expansion.....K. Tape recorder. VZ DTR or other.....
RS232 terminal..... Yes/No.....Modem Yes/No..... Brand.....
Interest. Business, games, M/L, BASIC, hardware, etc.....
.....

***** DATA SLIP *****

I request all OOPs (Oners-Operators-Programmers) to complete, cut out and send back to me. As mentioned elsewhere in this LE'VZ, this is useful for OOPs who may like to contact other OOPs who live in their vicinity, etc. Answer N (No) if you do not wish your name put on this General List. If the answer is Y (Yes) or not answered at all, you will be put on the General List.

HARDWARE AND FIRMWARE FOR SALE.

VSOFTWAREZ, 39 Agnes St., TOOWONG. QLD. 4066.
AUSTALIA. 'Phone (07) 371 3707.

Unlike our software prices, these do NOT include postage. Always include extra money with your order and we will send any surplus back in the parcel or put it towards any credit you may wish, such as to LE'VZ, if you are an OOP. If you wish to receive LE'VZ, read page 11.

Prices are in Australian dollars (AUD) as at the 1st. of February 1988. Items available while stocks last.
There is NO WARRANTY on used items, but all are tested OK.

VZ 300 Disc Drive	used	$220.00.
VZ200 rubber membrane keys	new	$ 18.00 each.
C10 blank tapes	new	$ 6.50 for five.
C20 blank tapes	new	$ 7.00 for five.
Floppy discs NASHUA DDDS bulk, so they are not in packs.	new	$ 18.00 for ten,
CITIZEN 120-D Printer	new	$490.00 including sales tax.

We are now Agents to sell this printer. It is the best printer in its price range. As you can see elswhere in this LE'VZ, I have printed just a few of its printer/font styles.

Its recommended price is $586.00 s/tax included. There is a 12 month warranty, backed up by DATATRONICS who are in most capital cities in Australia, so if problems should occur, the unit need only be sent to the nearest centre. Cartage costs are of course extra, paid by the purchaser, so include about $20.00. for this.

BOOKS.

VPROGRAMMEZ-VZ-VZ	new	$ 18.50 each.

Surface postage in Australia and NZ is included.
This is my own special book for beginners and advanced VZers.

BASIC Easier and Faster TRS80 new $ 10.00 each.
By Lewis Rosenfelder.

VZ200/VZ300 Assembly Language Programming Manual for Beginners by Steve Olney. new $ 25.00 each.

OTHER VZ USER GROUPS & CLUBS.

AUSTRALIA.

AD LIB Vee Zed MICRO.
MR Gordon Browell, 13 Brooks St., BIGGENDEN. QLD. 4621.

VZ USER.
MR Mark Harwood, P.O. Box 154, DURAL. NSW. 2158.

VZ DOWN UNDER.
MR George Seegie, 5 Cameron Court, WANTIRNA. VIC. 3152.

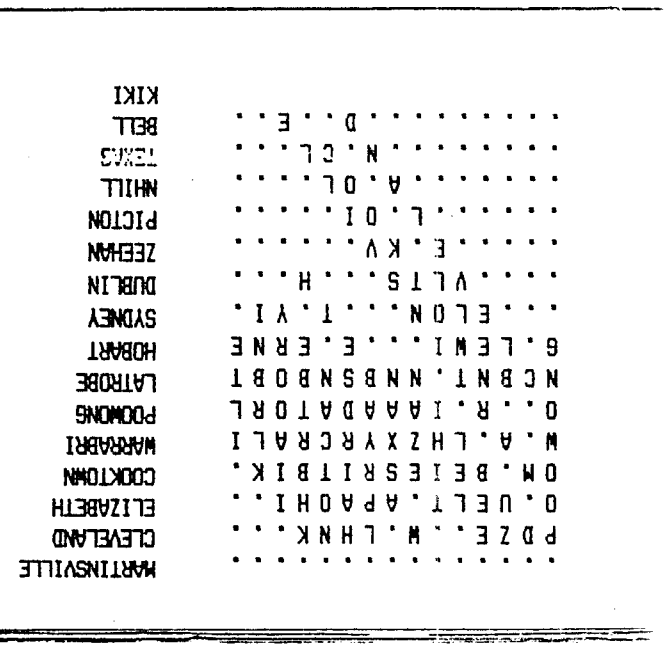
HUNTER VALLEY VZ USERS GROUP.
C/O P.O. Box 161, Jesmond. JESMOND. NSW. 2299.

WAVZ ENTHUSIASTS GROUP.
MR Graeme Bywater, P.O. Box 388, MORLEY. WA. 6062.

NEW ZEALAND.

CHRISTCHURCH VZ USERS GROUP.
MR Daniel Ayers, 188 Langdons Rd., CHRISTCHURCH. NZ.

VZ LINK.
MR Peter Hill, P.O.Box 1972 C.P.O. AUCKLAND. NZ.



My handwritten note to you, (IF ANY) John.