

DEC '85

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## EDITORIAL

Once again, I have the pleasure to welcome Group Members to the second issue of the UKEUG Newsletter, but first of all, may I apologise for the delay in going to Press, and therefore, the delay of the Newsletter arriving through your letter-box. The Festive Season must take the blame for this!! (A good example of the Editor passing the Buck!!)

I hope that the frivolities of the Christmas and New Year period have not left you too drained to face 1986, and I take this opportunity to wish all the Group Members, on behalf of the compilers of the Newsletter, a Prosperous 1986 and wish you all you would wish yourselves.

I'd better get the not so good things out of the way first of all, and therefore apologise (yet again!!) for the lack of Membership Cards. Unfortunately, we are reliant on an outside Agency for these, and a slight hiccup has occurred, but, be patient, they will be on their way, just as soon as we can lay our grubby mitts on them!!

I've taken the liberty of removing the Back Page articles and putting them in this part of the Newsletter and am happy to report that we now have a Discount agreement with FMP of Torquay. Also on that note, we have arranged a Discount scheme with SOLO SOFTWARE, but there is a slight hitch. Orders need to be in excess of 5 items from SOLO before discount can be given. But they have given us the opportunity to obtain discount, for which we are grateful.

MICRO-EXPRESS have written to the Group, enquiring about advertising and we wrote back to them, before Christmas, but, to date, have not had a reply. We would be more than happy to include any flexies along with the Newsletter, but the intention of the Group is to publish Group Members' letters and ideas, and leave the advertising to the bigger concerns. Having said that though, we would not turn back any assistance that they might wish to give to us!!

As you will see, as you read through, CRYSTAL RESEARCH, of Torquay, have been in touch with us, and we thank them for their help, and look forward to a long association with them, which will benefit both sides.

SCREENS of Northwood continue to be very helpful, and Members are asked to give them a call first, if they are thinking of buying anything, either as Software, or Hardware, before going elsewhere. KHETAN BHATT and NIGEL SINCLAIR are the contacts there and are always happy to pass the time of day.

There are some good ideas in this edition of the Newsletter, and the listings for the MANDELBROT type programs are only a tempter before next month's issue. If anyone gets the monthly magazine COMPUTING AGE, they will find a MANDELBROT type

program there also. I've typed it in, but can't get it to run correctly, and any help would be appreciated. (I'm just dumb!!). The MANDELBROT SET program we will be publishing soon, will run on the Einstein, so keep your fingers poised!!

DAVID BELL of TATUNG UK has informed us that there is now a special area for EINSTEIN owners on 'APPLECRACKERS' Bulletin Board, on 0268-778956. It is auto-sensing V21/23 and first-time users will have to register with the Sysop to get full time/area access. He also informs us that there will be some new Software out shortly for the EINSTEIN, but no details yet.

We thank Vic Day for his article on MENU preparation and his Reviews on SCRABBLE and MONOPOLY. The Newsletter can only exist with the help of Group Members submitting articles to be put in. PETER MOON is thanked for his listings for MANDELBROT and JULIA Sets, and also for his article on NICAD Batteries which will see the Editor's pen next month. MARTIN PAGE is thanked for his article on 'Drawing' and we look forward to more from him. We thank all those who wrote in and joined the Group since we last wrote, without you, the Newsletter couldn't exist.

Finally, on a sad note, due to a job commitment in the Middle East, the Secretary has to hand over the reins to another, (who was that who cheered!!!!) and, as from this issue, the new Secretary will be:-

KEITH STOKES  
Hillcroft  
Codmore Hill  
Pulborough  
West Sussex  
RH20 1BQ  
Tel: 07982-2399

The Secretary that was, will still be around until the end of March, so any mail he gets will be passed on, so no problems are envisaged and a smooth hand-over is guaranteed. But you've not got rid of me that easily, I've still got to do the Editor's job for the next Newsletter, so there!!!

Once more, it is stressed that the remarks, ideas, concepts expressed in this Newsletter are those of Group Members, and not those of TATUNG UK.

Right then, that's the Editorial over for another issue, remember, the Newsletter exists only because Group Members contribute to it, so keep writing, and we'll keep publishing. Have a pleasant 1986.

Robby Burns  
Editor (?)

# PROGRAM FRAME - A NEW APPROACH TO MENU DRIVEN PROGRAMS

By  
VIC J. DAY

Whilst reading J.F. RAPER's article in the first copy of the UKEUG Newsletter on a Mortgage Calculation Program, I was reminded of a program developed by a friend and colleague of mine, Mr F.R. PETTIT MA(Oxon), who was the founder of the Computer Teaching Centre, University of Oxford.

The program came to him one night whilst watching TV and, after scribbling the program on the back of the proverbial envelope, he tried it on the University computer next day, and it worked. Subsequently he tried it out on my UK101 computer, which also worked. Since then, I have used it on a Video Genie, TRS80 Model 100 and, currently, under a compiled BASIC on a KAYPRO.

The program, as its name suggests, or perhaps doesn't suggest, is a framework or skeleton on which you can hang a number of related or unrelated procedures. The basic program is shown in FRAME 1. As you will see, lines 1000 to 14000 are empty procedures, in that they contain only a title and a return to the main program. On running the program, the User is faced with "Press I for Instructions", this displays the menu listed in lines 400 et seq:.

As a suggestion, press M (upper case) and you will be prompted with "Your Macro please". Type in the whole range of procedures "1234567890ABCD". The program will proceed to run through all the procedures, 1 to 0 and A to D. Since these are all "empty" procedures, all that will appear on the screen is "PROCEDURE 1" etc:, with a prompt showing the next procedure to be run. After Procedure D has been reached, you are prompted with "What next?". As an alternative to pressing M and defining your own test Macro, as shown above, press X for "eXecute existing macro" and the default macro, defined in line 120, will run.

To demonstrate a more practical use, I have taken the liberty of including the four procedures from J.F. RAPER's program on Mortgage Calculation and called it FRAME 2. The procedures occupy Procedures 1 to 4, and have been added to the Menu (Type I to see the enlarged Menu). You will notice that I have included J.F. RAPER's instruction A\$=INCH\$, in order to halt the program at the end of the calculation. This instruction should not be used if you are running a series of procedures under the control of the Macro "M", in which the results of one procedure are used on a subsequent procedure. If, however, you wish to examine these intermediate results, you must halt the program in order to do this, unless you use an LPRINT.

Lines 15000 to 15999 can be used to include Global subroutines (each procedure can have its own local GOSUBS). Lines 16000 to 16999 are used for Defined Functions and lines 17000 to 17999 are used for Data Statements, but treat this with caution if you are using Data Statements in a procedure.

The numbers and letter references to the procedures can be amended by the user to indicate the function of the procedure, such as "T" for the procedure to calculate the Term of the Mortgage calculations. It will be necessary to make the same changes in lines 110 and 120 of the program for other uses, such as "I", "M", "X" and "Q". Personally, I think that there is very little to be gained by renumbering/relettering the procedures.

## LIST

```

10 CLS:PRINT "PROGRAM FRAME1":PRINT
20 PRINT "Originated by F.P.Pettit MA(OXON)"
30 PRINT "Founder of the Computer Teaching Centre"
40 PRINT "University of Oxford"
50 PRINT
60 PRINT "Program submitted by V.J.Day"
70 PRINT "23 Assarts Lane, Malvern Wells"
80 PRINT "Worcs. WR14 4JR"
90 PRINT:PRINT
100 PRINT "Type 'I' for Instructions"
110 L$="QMXI1234567890ABCD":REM Command letters
120 M$="I1234567890ABCD":REM Default MACRO
130 M8=1:M9=0:REM M9 Macro pointer
140 PRINT "What next ";
150 ON M8 GOTO 380,320:REM M8=1 Kbd Selected procedure,M8=2 Macro selected pr
ocedure
160 FOR N9=1 TO LEN(L$)
170 IF LEFT$(K$,1)=MID$(L$,N9,1) THEN GOTO 190 :REM Next procedure identified
180 NEXT N9
190 PRINT
250 ON N9 GOTO 290,300,310,400
260 ON N9-4 GOTO 1000,2000,3000,4000,5000,6000,7000
270 ON N9-11 GOTO 8000,9000,10000,11000,12000,13000,14000
280 GOTO 140
290 STOP
300 PRINT "SELECT YOUR MACRO PLEASE";:INPUT M#:M9=0
310 M8=2
320 M9=M9+1
330 IF M9>LEN(M$) THEN M9=0:M8=1:GOTO 150
340 K#=MID$(M$,M9,1)
350 PRINT TAB(12,32);M$
360 PRINT TAB(M9+11);"^"
370 GOTO 160
380 INPUT K$
390 GOTO 160
400 CLS:PRINT "USE :-"
410 PRINT " I for Instructions"
420 PRINT " M to define a new Macro"
430 PRINT " X to eXecute a current macro"
440 PRINT " Q to Quit"
450 REM Lines 450 to 890 are to be used for listing your own procedures 1
0 and A to D
900 GOTO 140
1000 PRINT "PROCEDURE 1"
1999 GOTO 140
2000 PRINT "PROCEDURE 2"
2999 GOTO 140
3000 PRINT "PROCEDURE 3"
3999 GOTO 140
4000 PRINT "PROCEDURE 4"
4999 GOTO 140
5000 PRINT "PROCEDURE 5"
5999 GOTO 140
6000 PRINT "PROCEDURE 6"
6999 GOTO 140
7000 PRINT "PROCEDURE 7"
7999 GOTO 140
8000 PRINT "PROCEDURE 8"

```

```

8999 GOTO 140
9000 PRINT "PROCEDURE 9"
9999 GOTO 140
10000 PRINT "PROCEDURE 0"
10999 GOTO 140
11000 PRINT "PROCEDURE A"
11999 GOTO 140
12000 PRINT "PROCEDURE B"
12999 GOTO 140
13000 PRINT "PROCEDURE C"
13999 GOTO 140
14000 PRINT "PROCEDURE D"
14999 GOTO 140
15000 REM SET GLOBAL SUBROUTINES HERE
16000 REM SET DEFINED FUNCTIONS HERE
17000 REM SET DATA STATEMENTS HERE
20000 END

```

Ready

LIST

```

10 CLS:PRINT "PROGRAM FRAME2":PRINT
20 PRINT "Originated by F.P.Pettit MA(OXON)"
30 PRINT "Founder of the Computer Teaching Centre"
40 PRINT "University of Oxford"
50 PRINT
60 PRINT "Program submitted by V. J. Day"
70 PRINT "23 Assarts Lane, Malvern Wells"
80 PRINT "Worcs, WR14 4JR"
90 PRINT:PRINT
100 PRINT "Type 'I' for Instructions"
110 L$="QMXI1234567890ABCD"
120 M$="I1234567890ABCD"
130 M8=1:M9=0
140 PRINT "What next ";
150 ON M8 GOTO 380,320
160 FOR N9=1 TO LEN(L$)
170 IF LEFT$(L$,1)=MID$(L$,N9,1) THEN GOTO 190
180 NEXT N9
190 PRINT
250 ON N9 GOTO 290,300,310,400
260 ON N9-4 GOTO 1000,2000,3000,4000,5000,6000,7000
270 ON N9-11 GOTO 8000,9000,10000,11000,12000,13000,14000
280 GOTO 140
290 STOP
300 PRINT "SELECT YOUR MACRO PLEASE";:INPUT M$:M9=0
310 M8=2
320 M9=M9+1
330 IF M9>LEN(M$) THEN M9=0:M8=1:GOTO 150
340 K$=MID$(M$,M9,1)
350 PRINT TAB(12,32);M$
360 PRINT TAB(M9+11);"^"
370 GOTO 160
380 INPUT K$
390 GOTO 160
400 CLS:PRINT "USE :-"
410 PRINT " I for Instructions"
420 PRINT " M to define a new Macro"
430 PRINT " X to eXecute a current macro"
440 PRINT " Q to Quit"

```

```

450 PRINT " 1 FOR PROCEDURE 'GET PRINCIPAL'"
460 PRINT " 2 FOR PROCEDURE 'GET INTEREST RATE'"
470 PRINT " 3 FOR PROCEDURE 'GET TERM'"
480 PRINT " 4 FOR PROCEDURE 'GET REPAYMENT'"
900 GOTO 140
1000 REM ** PROCEDURE GET PRINCIPAL **
1010 CLS
1020 PRINT TAB(10) "CALCULATING PRINCIPAL":PRINT:PRINT:PRINT
1030 INPUT "INTEREST RATE ";I:I=I/100
1040 INPUT "TERM IN YEARS, MONTHS ";Y,M:TERM=Y+M/12
1050 INPUT "MONTHLY REPAYMENT ";R:R=R*12
1060 PRINT:PRINT:PRINT
1070 ON ERR GOTO 1100
1080 P=R/(I+(I/((1+I)^TERM-1)))
1090 FMT 6,2
1100 PRINT "PRINCIPAL AMOUNT ";P:GOTO 1120
1110 PRINT "OUT OF RANGE":OFF ERR
1120 PRINT @ 0,20,"PRESS ANY KEY TO CONTINUE":A$=INCH$
1999 GOTO 140
2000 REM ** PROCEDURE GET INTEREST **
2010 CLS
2020 PRINT TAB(8) "CALCULATING INTEREST RATE":PRINT:PRINT:PRINT
2030 INPUT "PRINCIPAL ";P
2040 INPUT "TERM IN YEARS, MONTHS ";Y,M:TERM=Y+M/12
2050 INPUT "MONTHLY REPAYMENT ";R:R=R*12
2060 TEMP=0.1
2070 REM LOOP
2080 I=TEMP
2090 PRINT
2100 ON ERR GOTO 2150
2110 TEMP=R/P-(I/((1+I)^TERM-1))
2120 IF ABS(TEMP-1)>.000001 THEN GOTO 2070
2130 FMT 2,3
2140 PRINT "INTEREST RATE ";(I*100):GOTO 2160:REM SKIP ERROR MESSAGE
2150 PRINT "OUT OF RANGE":OFF ERR
2160 PRINT @ 0,20,"PRESS ANY KEY TO CONTINUE":A$=INCH$
2999 GOTO 140
3000 REM ** PROCEDURE GET TERM **
3010 CLS
3020 PRINT TAB(12) "CALCULATING TERM":PRINT:PRINT:PRINT
3030 INPUT "PRINCIPAL ";P
3040 INPUT "INTEREST RATE ";I:I=I/100
3050 INPUT "MONTHLY REPAYMENT ";R:R=R*12
3060 PRINT:PRINT:PRINT
3070 ON ERR GOTO 3110
3080 TERM=LN(P*I/(R-P*I)+1)/LN(1+I)+1/24
3090 Y=INT(TERM):M=INT((TERM-INT(TERM))*12):FMT 2,0
3100 PRINT "TERM IS "Y" YEARS, "M" MONTHS":GOTO 3120:REM SKIP ERROR MESSAGE
3110 PRINT "OUT OF RANGE":OFF ERR
3120 PRINT @ 0,20,"PRESS ANY KEY TO CONTINUE":A$=INCH$
3999 GOTO 140
4000 REM ** PROCEDURE GET REPAYMENT **
4010 CLS
4020 PRINT TAB(6) "CALCULATING MONTHLY REPAYMENT":PRINT:PRINT:PRINT
4030 INPUT "PRINCIPAL ";P
4040 INPUT "INTEREST RATE ";I:I=I/100
4050 INPUT "TERM IN YEARS, MONTHS ";Y,M:TERM=Y+M/12
4060 PRINT:PRINT:PRINT
4070 ON ERR GOTO 4110
4080 R=P*(I+(I/((1+I)^TERM-1)))/12

```

```

4090 FMT 4,2
4100 PRINT"MONTHLY PAYMENT IS "R:GOTO 4120:REM SKIP ERROR MESSAGE
4110 PRINT"OUT OF RANGE":OFF ERR
4120 PRINT @ 0,20,"PRESS ANY KEY TO CONTINUE";:A#=INCH#
4999 GOTO 140
5000 PRINT "PROCEDURE 5"
5999 GOTO 140
6000 PRINT "PROCEDURE 6"
6999 GOTO 140
7000 PRINT "PROCEDURE 7"
7999 GOTO 140
8000 PRINT "PROCEDURE 8"
8999 GOTO 140
9000 PRINT "PROCEDURE 9"
9999 GOTO 140
10000 PRINT "PROCEDURE 0"
10999 GOTO 140
11000 PRINT "PROCEDURE A"
11999 GOTO 140
12000 PRINT "PROCEDURE B"
12999 GOTO 140
13000 PRINT "PROCEDURE C"
13999 GOTO 140
14000 PRINT "PROCEDURE D"
14999 GOTO 140
15000 REM SET COMMON SUBROUTINES HERE
16000 REM SET DEFINED FUNCTIONS HERE
17000 REM SET DATA STATEMENTS HERE
20000 END

```

GLOBAL

Ready

MAP OF IRELAND  
by  
MARTIN PAGE

The third BASIC listing is a very neat drawing of IRELAND which was sent in by MARTIN PAGE. Martin is working on other maps, and we hope to be able to publish those, as they become available.

MANDELBROT SET

The forth BASIC listing is just to tempt you with what is in store in future Newsletters. We hope that you will get some enjoyment from what is produced, and that it will whet your appetites.

## LIST

```
10 CLS32:BCOL1:TCOL8
200 FORL=23T05STEP-1
201 A=1
210 READX
220 FORJ=1TOX
230 READX#
240 SHAPE 143+J,X#
250 NEXTJ
260 READX
270 L#=MUL$(" ",X)
280 READX
290 GOSUB1284
310 READX
320 GOSUB1320
330 READX
340 GOSUB1284
350 READX
360 GOSUB1320
480 PRINT@B,L;L#;
490 NEXTL
500 TCOL2:GCOL8
510 FILL130,11,8
515 REM I.O.MAN
520 READA,B
530 FORJ=1TO15:READA1,B1:DRAW A,B TO A1,B1:A=A1:B=B1:NEXTJ
540 FILL127,72,8
550 REM IRELAND
560 READA,B
570 FORJ=1TO144:READA1,B1:DRAW A,B TO A1,B1:A=A1:B=B1:NEXTJ
580 FILL80,30,8
590 SHAPE140,"006CFEFEFE7C3810"
600 MAG0
610 SPRITE4,152,50,6,140
620 FORJ=1TO500:NEXTJ:SPRITEOFF:FORJ=1TO500:NEXTJ:GOTO610
999 PRINT@0,0;:END
1000 REM SUBROUTINES
1284 IFX=0THENGOTO1311
1285 FORK=ATO(A+X-1)
1290 L#=L#+CHR$(143+K)
1300 NEXTK
1310 A=K
1311 RETURN
1315 IFX=0THENGOTO1325
1320 L#=L#+MUL$(" ",X)
1325 RETURN
2020 DATA4,"020C304058240302","076890C080408000","A445020000000000","408080000
0000000",6,4,0,0,6
2030 DATA7,"0000000000000001","02020C3020408000","0000000000000018","00332C102
0404040","008076ADC6000000","E15E209060000000"
2031 DATA"30F8F87020000000",6,7,0,0,3
2040 DATA8,"0000000203020202","073820C000000000","028E700000000000","000000000
1000000","0000008042A5DAE7"
2042 DATA"0000000001C6380","000000000102E418","0304086898000000",7,3,1,5,0
2050 DATA8,"030100000000000000","07C4586000000000","C0449A7100000000","00000
007C8310202"
2052 DATA"3050A02040800000","0000030000000000","00956A807A050000","C08000031EE
20201",6,5,2,3,0
2060 DATA4,"0000000003010102","030C10E000000000","0000000001020201","041820608
```

```

000C040",6,2,6,2,0
2070 DATA2,"10100810102020E0","0201010101020404",8,1,6,1,0
2080 DATA5,"00000003040B1400","C080800060901010","0404040601000000","08235C800
0000000","00C0201804040202",7,2,4,3,0
2090 DATA4,"0000000003070708","00000000198F3140","08080804046A9600","080402020
1010202",7,3,3,1,2
2100 DATA3,"1202060C0A020408","0000030403000000","2010906898482410",9,1,2,2,2
2110 DATA4,"0101000000000000","0000804040402729","0402010000000000","000000804
0301020",8,2,2,2,2
2120 DATA6,"0001000000000000","A041899452512810","C121928C800000000","E02020404
0408080","0402020101020201"
2122 DATA"000000000000C038",6,4,1,2,3
2130 DATA3,"1509010000000000","8884880810202020","1010101008080804",6,2,3,1,4
2140 DATA4,"2013142412141214","A020402020201088","2018060100000000","000000804
0402010",6,2,2,2,4
2150 DATA4,"44C8648810081010","0000000000304890","540300031C608CF3","000080000
0008040",6,2,1,2,5
2160 DATA5,"000A1F1F1E0F0702","40204083442992C4","000000C020C00000","000000000
01F2068","1020408080000000",5,3,1,2,5
2170 DATA3,"060300040E1E0800","4080402040804080","0202040408081010",5,2,3,1,5
2180 DATA6,"00040E060E0C0004","000000040E070F0F06","2040808040808040","01020C3
1429CA0C0","00033CC000000000"
2181 DATA"0098640202010102",4,3,1,3,5
2190 DATA5,"040F1F0F07030F06","FCF8F8F0E0C08000","010204020404021C","000000000
302040E","1020408000000000",4,3,1,2,6
2200 DATA4,"000000400E1C1C3C","0000005BA4804080","1021D60800000000","00D028081
0080810",5,1,1,3,6
2300 REM DRAW DATA
2310 DATA125,68,126,68,127,69,128,70,129,71,129,72,128,73,128,74,127,75,126,74
,126,73,125,72,125,71,125,70,124,68,124,67
2350 REM IRELAND DATA
2360 DATA80,28,85,30,98,36,98,38,106,39,107,40,108,39,112,40,109,42,109,43
2370 DATA110,42,111,43,112,44,113,57,114,58,114,59,113,60,113,61,114,62,112,63
2380 DATA112,65,111,66,111,67,112,68,114,68,113,69,112,70,116,70,116,71,117,71
2390 DATA118,72,119,73,119,74,118,74,118,76,117,77,118,78,119,77,120,76,119,80
2400 DATA117,80,116,79,115,80,115,83,118,83,114,89,111,89,110,90,107,90,106,89
2410 DATA104,89,104,90,105,91,104,92,103,92,102,91,102,89,101,88,100,89,100,90
2420 DATA99,91,94,91,93,90,93,88,92,87,91,86,91,85,90,84,89,83,90,83
2430 DATA90,81,91,81,92,82,93,81,94,80,98,79,92,79,91,78,90,77,87,77
2440 DATA86,76,85,75,84,76,82,76,81,77,78,77,76,76,76,72,77,71,80,70
2450 DATA79,69,79,68,75,64,73,64,73,61,74,61,75,60,75,59,76,58,82,58
2460 DATA83,59,84,60,86,60,87,61,87,60,87,58,86,57,85,56,83,56,81,54
2470 DATA82,54,79,50,76,49,74,47,75,48,81,48,82,49,84,49,85,48,86,47
2480 DATA82,47,81,46,76,46,75,45,74,44,71,44,70,43,69,42,70,41,75,41
2490 DATA75,40,70,35,69,35,69,36,70,34,75,35,75,34,73,31,74,31,77,33
2500 DATA78,32,76,30,78,30,79,29,77,28

```

Ready

LIST

```

10 REM PROGRAM TO TEST BIT IMAGE GRAPHICS
20 REM DIRECT THE OUTPUT TO THE PRINTER
30 PRINT#1
40 REM SET LINE SPACE TO 4/216ths INCH
50 PRINT CHR$(27)+"3"+CHR$(4);
60 REM PRINT 100 LINES OF DOTS OR BLANKS
70 FOR J=1 TO 100

```

```

80 REM SET PRINTER TO FIRE ONLY PIN 1
90 PRINT CHR$(27)+"K"+CHR$(0)+CHR$(1);
100 REM SET 256 PRINT POSITIONS
110 FOR I=1 TO 256
120 REM GENERATE A RANDOM NUMBER
130 REM WHICH IS EITHER 1 OR 0
140 C=RND(19)
150 C=INT(C/10)
160 REM PRINT EITHER A DOT OR A BLANK
170 REM AS DETERMINED BY THE VALUE OF C
180 PRINT CHR$(C);
190 NEXT I
200 REM CODE FOR LINE FEED
210 PRINT CHR$(10);
220 REM START THE NEXT TLINE OF DOTS
230 REM OR BLANKS
240 NEXT J
250 PRINT CHR$(10);
260 REM HOPEFULLY IT WORKED
270 END
280 REM REMEMBER TO TURN THE PRINTER
290 REM OFF THEN ON TO REGAIN NORMAL
300 REM PRINTER OUTPUT (CLEAR PRINTER
310 REM MEMORY).

```

Ready

#### LIST

```

10 REM PROGRAM "JULIA" (XBAS)
20 REM REF "INFINITE EXPOTENTIALS"
30 REM P.J. RIPPON (OPEN UNIVERSITY)
40 REM MATHEMATICAL GAZETTE, 195.
50 REM X and Y are the co-ordinates of t
60 REM A and B are the starting values
70 REM for iteration.
80 REM S is the scale value for plotting
90 REM N is the number of iterations.
100 X=-0.92
110 Y=0.380
120 A=-1
130 B=0
140 S=50
150 DRAW 0,71 TO 220,71
160 DRAW 81,0 TO 81,200
170 FORN=1 TO 300
180 PLOT 81+S*A,71+S*B
190 R=EXP(X*A-Y*B)
200 T=X*B+Y*A
210 A=R*COS(T)-1
220 B=R*SIN(T)
230 NEXT N
240 PRINT TAB(20);S;X;Y;N
250 END
260 REM BEST RESULTS WHEN X SQUARED + Y SQUARED IS CLOSE TO 1.0

```

Ready

# USING SERIES AS ICONS

by  
CHRIS GILES

As usual when I get what I think is a good idea, it always seems to fall down about my ears. Why not, I thought, use my joysticks, purchased from Cuckridge Computer Supplies, instead of an expensive MOUSE to position a Sprite on the screen and then by pressing the Fire button making my selection. Well if you have tried it you will know where I had problems. The joystick pots. are so noisy electrically that the sprite jumps about the screen like my daughter when I'm trying to type. Don't despair, I thought, sample it several times with a loop and take the average. So I averaged five readings but the sprite still jumped everywhere, so I averaged it 10 times and it still jumped. Eventually I got it to stabilise after averaging 200 readings. Well in basic that takes a long time. There was only one answer--'machine code' (Oh I hate machine code) but here's the result:-

LINE	LOCN	M/CODE	LABEL	OPCODE	REMARKS
1				ORG 08BFCH	;Highest memory location available
2	DFBC	0E04	START:	LD C,4	;First port to sample
3	DFBE	CDE1DF		CALL SAMPLE	;Get average of 256 samples
4	DFC1	21FCDF		LD HL,PORT0	;Basic reads it from here
5	DFC4	72		LD (HL),D	;Save it for basic
6	DFC5	0E05		LD C,5	;Second port to sample
7	DFC7	CDE1DF		CALL SAMPLE	;Get average
8	DFCA	21FDDF		LD HL,PORT1	;Basic here
9	DFCD	72		LD (HL),D	;Save it
10	DFCE	0E06		LD C,6	;Third port to sample
11	DFD0	CDE1DF		CALL SAMPLE	;Get sample
12	DFD3	21FEDF		LD HL,PORT2	;Basic here
13	DFD6	72		LD (HL),D	;Save it
14	DFD7	0E07		LD C,7	;Fourth here
15	DFD9	CDE1DF		CALL SAMPLE	;Get sample
16	DFDC	21FFDF		LD HL,PORT3	;Basic here
17	DFDF	72		LD (HL),D	;Save it
18	DFE0	C9		RET	;Return to basic
19	DFE1	210000	SAMPLE:	LD HL,0000H	;Zero the accumulator register
20	DFE4	1600		LD D,0	;Zero the MSB of the sample register
21	DFE6	0600		LD B,0	;Load loop counter
22	DFE8	79	LOOP:	LD A,C	;Get analogue port to read
23	DFE9	D338		OUT (38H),A	;Tell the port to prepare to read
24	DFEB	3E07		LD A,7	;;;This bit gives a delay
25	DFED	3E07		LD A,7	;;;of 40 micro-seconds to
26	DFEF	3D	DELAY:	DEC A	;;;allow the input value
27	DFF0	FE00		CP 0	;;;to settle to a steady
28	DFF2	20FB		JR NZ,DELAY	;;;state
29	DFF4	DB38		IN A,(38H)	;Read the port
30	DFF6	5F		LD E,A	;move to sample register
31	DFF7	19		ADD HL,DE	;Keep running total in HL
32	DFF8	10EE		DJNZ LOOP.	;256 times
33	DFFA	54		LD D,H	;By summing 256 samples, no calculation needs to be done

```

34      DFFB  C9          RET          ;with the result, just take the
35      DFFC  00      PORT0:  DB  0          ;MSB
36      DFFD  00      PORT1:  DB  0          ;Return
37      DFFE  00      PORT2:  DB  0          ;Access point for basic
38      DFFF  00      PORT4:  DB  0          ;Access point for basic
39                                     END

```

The above is a full source code listing for the program and when assembled can be saved as a COM file with ZEN. This can then be reloaded as an Object file for use by basic. To read a port from basic a CALL to &DFBCH will sample all four ports and leave the values in locations &DFFCH to &DFFFH to be read later by PEEKs.

#### HEX DUMP OF OBJECT CODE

224 Neutral.		ADDRESS	DATA
76 ↓		DFBC	0E 04 CD E1 DF 21 FC DF
223 ↑		DFC4	72 0E 05 CD E1 DF 21 FD
75 →		DFCC	DF 72 0E 06 CD E1 DF 21
		DFD4	FE DF 72 0E 07 CD E1 DF
225 ↗		DFDC	21 FF DF 72 C9 21 00 00
		DFE4	16 00 06 00 79 D3 38 3E
		DFEC	07 3E 07 3D FE 00 20 FB
		DFF4	DB 38 5F 19 10 EE 54 C9
		DFFC	00 00 00 00

For those of you who do not have an assembler the way to get the above program to operate from basic is as follows:-

- 1) Load basic in the normal way.
- 2) Type MOS<enter> to get into MOS.
- 3) Type M DFBC<enter> this will give the display DFBC FF with the cursor flashing over the first 'F'.
- 4) Enter each of the data bytes as listed in the hex dump with a carriage return between finishing with a period after the last data byte.
- 5) Type Y<enter> to return to basic.
- 6) Type SAVE"0:JOYS.OBJ",&DFBC,&DFFF

This will save the area of memory just modified to disk as an object file.

To use this in a basic program first of all the area must be protected by use of the CLEAR instruction and since the program is designed to run at &DFBC then CLEAR &DFBB should be used as the program will be loaded at the location immediately following the cleared location. Then the program can be loaded with a line such as:-

```
100 LOAD"0:JOYS.OBJ"
```

The machine code program can then be used by using CALL &DFBC and reading the values of the ports with PEEK(&DFFC) for port 0 etc.

Using this method I managed to use the joystick as a mouse type input device and coupled with sprites produced a passable Mackintosh type program.

## PLOTTING

This month we have a number of methods of plotting to the screen.

Elsewhere in this issue is a BASIC program from MARTIN PAGE. In his program he shows how to use the basic plot command and how to build a picture by printing strings. The following listing is a machine code program using Martin's data for Ireland and shows that even though the plot command is fast (and it is fast) machine code is even faster.

Having conquered the UK this month, next month the WORLD!! in BASIC (with go-faster stripes).

```

0100          1
0100          2 ;MACHINE CODE SCREEN PLOT USING
0100          3 ;MOS ROUTINES
0100          4 ;AND ASSEMBLED ON GEN80
0100          5
FBA8          6 DOTON          EQU    0FBA8H          ;SCHPAD LINE
FBA9          7 DOTOF          EQU    0FBA9H          ;TYPE LOCATIONS
FBAA          8 DOTON2         EQU    0FBAAH
FBAB          9 DOTOF2         EQU    0FBABH
FB96         10 PL2X          EQU    0FB96H          ;X,Y COORDINATE
FB97         11 PL2Y          EQU    0FB97H          ;LOCATIONS
0100 3E0C     12          LD      A,0CH          ;CLEAR
0102 CF       13          RST      8
0103 9E       14          DEFB    9EH          ;SCREEN
0104 3E50     15          LD      A,80
0106 3296FB   16          LD      (PL2X),A          ;SET UP START
0109 3E1C     17          LD      A,28
010B 3298FB   18          LD      (PL2Y),A          ;POINTS
010E 3EFF     19          LD      A,0FFH
0110 32A8FB   20          LD      (DOTON),A          ;AND
0113 3E00     21          LD      A,0
0115 32A9FB   22          LD      (DOTOF),A
0118 32AAF8   23          LD      (DOTON2),A          ;LINE
011B 32ABFB   24          LD      (DOTOF2),A          ;TYPE
011E ED4B6802 25          LD      BC,(LENGTH) ;DATA LENGTH
0122 214601   26          LD      HL,POINTS          ;DATA START
0125 1802     27          JR      LOAD          ;JUMP
0127 CF       28 DISP          RST      8
0128 C8       29          DEFB    0C8H
0129 DD2A96FB 30 LOAD          LD      IX,(PL2X)          ;TO HERE.MOVE
012D FD2A98FB 31          LD      IY,(PL2Y)          ;START TO REGS
0131 1196FB   32          LD      DE,PL2X          ;LOAD NEXT POINT
0134 EDA0     33          LDI     ;INTO SCRATCH PAD
0136 1198FB   34          LD      DE,PL2Y
0139 EDA0     35          LDI
013B B9       36          CP      C          ;SEE IF THAT IS ALL
013C 2802     37          JR      Z,DCHK          ;DOUBLE CHECK
013E 18E7     38          JR      DISP          ;NO: DO IT AGAIN
0140 B8       39 DCHK          CP      B          ;FOR>255 DATA POINTS
0141 20E4     40          JR      NZ,DISP          ;KEEP GOING
0143 C35500   41 LOOP          JP      55H          ;END HERE
0146 551E6224 42 POINTS        DEFB    85,30,98,36 ;DATA START
014A 62266A27 43          DEFB    98,38,106,39
014E 6B286C27 44          DEFB    107,40,108,39
0152 70286D2A 45          DEFB    112,40,109,42
0156 6D2B6E2A 46          DEFB    109,43,110,42
015A 6F2B702C 47          DEFB    111,43,112,44
015E 7139723A 48          DEFB    113,57,114,58

```

0162	723B713C	49
0166	713D723E	50
016A	703F7041	51
016E	6F426F43	52
0172	70447244	53
0176	71457046	54
017A	74467447	55
017E	75477648	56
0182	7749774A	57
0186	764A764C	58
018A	754D764E	59
018E	774D784C	60
0192	77507550	61
0196	744F7350	62
019A	73537653	63
019E	72596F59	64
01A2	6E5A6B5A	65
01A6	6A596859	66
01AA	685A695B	67
01AE	685C675C	68
01B2	665B6659	69
01B6	65586459	70
01BA	645A635B	71
01BE	5E5B5D5A	72
01C2	5D585C57	73
01C6	5B565B55	74
01CA	5A545953	75
01CE	5A535A51	76
01D2	5B515C52	77
01D6	5D515E50	78
01DA	624F5C4F	79
01DE	5B4E5A4D	80
01E2	574D564C	81
01E6	554B544C	82
01EA	524C514D	83
01EE	4E4D4C4C	84
01F2	4C484D47	85
01F6	50464F45	86
01FA	4F444B40	87
01FE	4940493D	88
0202	4A3D4B3C	89
0206	4B3B4C3A	90
020A	523A533B	91
020E	543C563C	92
0212	573D573C	93
0216	573A5639	94
021A	55385338	95
021E	51365236	96
0222	4F324C31	97
0226	4A2F4B30	98
022A	51305231	99
022E	54315530	100
0232	562F522F	101
0236	512E4C2E	102
023A	4B2D4A2C	103
023E	472C462B	104
0242	452A4629	105
0246	4B294B28	106
024A	46234523	107
024E	45244622	108

DEFB	114,59,113,60
DEFB	113,61,114,62
DEFB	112,63,112,65
DEFB	111,66,111,67
DEFB	112,68,114,68
DEFB	113,69,112,70
DEFB	116,70,116,71
DEFB	117,71,118,72
DEFB	119,73,119,74
DEFB	118,74,118,76
DEFB	117,77,118,78
DEFB	119,77,120,76
DEFB	119,80,117,80
DEFB	116,79,115,80
DEFB	115,83,118,83
DEFB	114,89,111,89
DEFB	110,90,107,90
DEFB	106,89,104,89
DEFB	104,90,105,91
DEFB	104,92,103,92
DEFB	102,91,102,89
DEFB	101,88,100,89
DEFB	100,90,99,91
DEFB	94,91,93,90
DEFB	93,88,92,87
DEFB	91,86,91,85
DEFB	90,84,89,83
DEFB	90,83,90,81
DEFB	91,81,92,82
DEFB	93,81,94,80
DEFB	98,79,92,79
DEFB	91,78,90,77
DEFB	87,77,86,76
DEFB	85,75,84,76
DEFB	82,76,81,77
DEFB	78,77,76,76
DEFB	76,72,77,71
DEFB	80,70,79,69
DEFB	79,68,75,64
DEFB	73,64,73,61
DEFB	74,61,75,60
DEFB	75,59,76,58
DEFB	82,58,83,59
DEFB	84,60,86,60
DEFB	87,61,87,60
DEFB	87,58,86,57
DEFB	85,56,83,56
DEFB	81,54,82,54
DEFB	79,50,76,49
DEFB	74,47,75,48
DEFB	81,48,82,49
DEFB	84,49,85,48
DEFB	86,47,82,47
DEFB	81,46,76,46
DEFB	75,45,74,44
DEFB	71,44,70,43
DEFB	69,42,70,41
DEFB	75,41,75,40
DEFB	70,35,69,35
DEFB	69,36,70,34

Ø252	4B234B22	109	DEFB	75,35,75,34	
Ø256	491F4A1F	110	DEFB	73,31,74,31	
Ø25A	4D214E2Ø	111	DEFB	77,33,78,32	
Ø25E	4C1E4E1E	112	DEFB	76,3Ø,78,3Ø	
Ø262	4F1D4D1C	113	DEFB	79,29,77,28	
Ø266	1C5Ø	114	DEFB	28,8Ø	
Ø268	22Ø1	115	LENGTH		;ENTER LENGTH HERE
Ø26A		116	END		

## GAME REVIEW

by

VIC DAY      AGE:-    Mature

GAMES :-    MONOPOLY and SCRABBLE  
SUPPLIER :-    LEISURE GENIUS  
COST :-    15:95p each

By nature, I am not a Computer Games fanatic, after 5 minutes of shooting down aliens, or trying to mangle frogs with a 30 ton lorry, I am reduced to a state of utter boredom. However, they have a great following and, hopefully, will introduce many to other joys of computing. The only game I became slightly hooked on, in the Einstein 'Bumper' package of programs, was 'OTHELLO', which required thought, rather than manual dexterity, or pressing keys or wagging a joystick.

I was interested when MONOPOLY was announced, since I was a fan of this game for more years than I care to remember. So I invested in a copy. It boots up without any action, other than <CTRL-BREAK>, and in seconds the game is up and running. The simulation of the game is excellent and up to 6 can play. Any of these, or all, can be played by the computer. It is quite interesting to set the game up for 2 players, both of which are the computer, and to walk away and leave the game to run itself. There is a facility for a short version of the game (you choose the actual duration). In this short version, the computer allocates a number of properties to the players, so that the game starts with each player holding some real estate.

I was, therefore, interested when Leisure Genius announced the SCRABBLE program. So I sent off to Einstein for it. On arrival it wouldn't boot as the MONOPOLY did. I returned it to Einstein who returned it saying it was OK, but it still wouldn't boot. I then began to suspect that the problem lay in the fact that I had the 80 Column mod, which booted up in the 80 Column mode, whilst the SCRABBLE program runs in the 40 Column mode. I tried to set it to the 40 Column mode before inserting the SCRABBLE disc, but all I got was a fault indication. I returned it again to Einstein, asking them to test it on an 80 Column machine. It came back with the same story, that there was nothing wrong with it, but they had made a fresh copy on the other side of the disc.

Using the 1: side of the disc, the program booted up immediately, but the 0: side (the original side) still refused to boot. Solution, copy the 1: side of the disc onto the 0: side. Result, the program now boots. Moral, don't believe everything the manufacturers tell you.

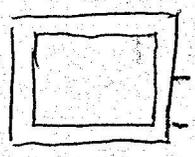
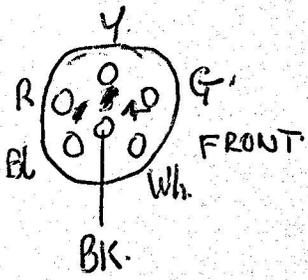
However, back to the game itself, again, it is an excellent simulation of the Scrabble board, and you have several options, such as being able to see the tiles of other players, noises on or off, and if the computer is playing to see what he is thinking before he (sorry, it) makes its move. This is a quite interesting feature as it lists the word and score it is thinking about and then moves on to other words with different scores. It doesn't always take the highest score. It appears to me that if it passes a word, it can't go back. It may, however, be some devilish plan to think ahead for a higher score next time!! I'm sure that many human players use that ploy, I know I do, and quite often come unstuck when your partner takes advantage of your play!!

Left to itself, the computer plays a mean game with

itself, and produces a well-matched game. The computer has a vocabulary of some 12,000 words, and will challenge you if your word is not in its vocabulary. It's a pity that your challenged word isn't automatically added to the computer's vocabulary, perhaps this could be the subject of a rethink by Leisure Genius.

I think that these two games will be the sum total of my purchases of Games Software, but who knows, perhaps I will be tempted, as I think many of you will be, by the two games I have mentioned.

If I appear to be too fulsome in my praise for these two programs, perhaps I should make it clear that I don't work for Leisure Genius, in fact, I am enjoying retirement away from the rat-race.

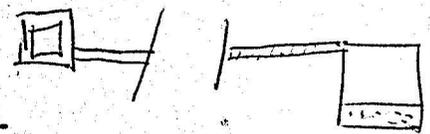


HINTS & TIPS

MATHS

Here is a tip from Martin Page when doing calculations, using ^ for raising a number to a power seems to be rather inaccurate so if accuracy is what you are after use X\*X as this is better.

HMSelustriacus 80 COLUMN CARD MODIFICATION  
by  
RICHARD FOULSER-0903-  
WORTHING -31204-



After being faced with the expense of the 80 Column Card, I was none too pleased with the fact that the connecting leads were an addition to the total price, adding a further 20:00p to the cost of the upgrade.

Looking inside the box revealed that a simple two-way switch was the workings to which this great expense was placed. On further investigation, I found that it was possible to mount the switch on the cover of the 80 Column Card, thereby making an altogether neater job of it.

To make the lead, it is necessary to cut the existing monitor display lead in half. Then cut back the black protective sleeve to about 1 inch, making sure that the insulation around the wires underneath is not damaged in the process. This must be done to both halves of the lead. It is now necessary to make up the Phono Plug and the two-way screened lead, which may be purchased, already made up. The outer sleeving on this must also be stripped to reveal the screening underneath.

Four holes must be drilled in the cover of the 80 Column Card, one to accommodate the switch, the others for the leads, three in number. The leads must pass through these holes before soldering them.

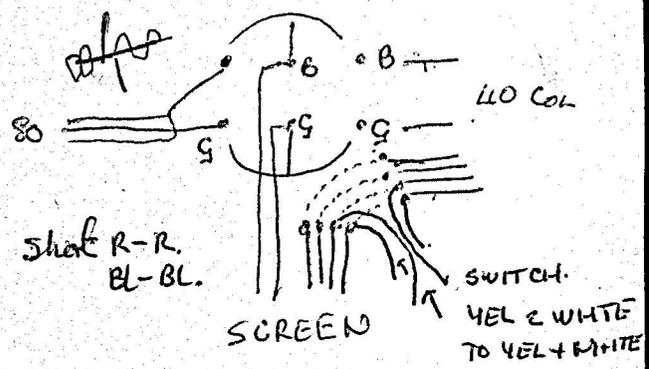
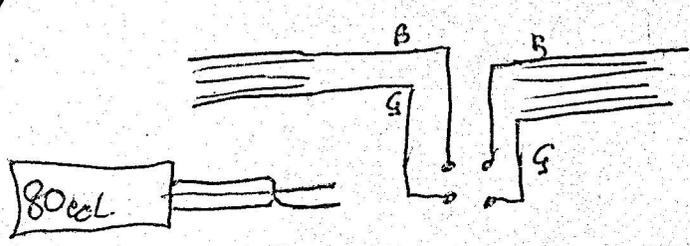
The two wires, BLUE and GREEN of one lead must be soldered to one end of the switch and the BLUE and GREEN of the other lead to the centre two terminals of the switch (BLUE next to BLUE, GREEN next to GREEN). Each of the remaining wires should then be soldered to its corresponding colour, i.e. RED to RED etc:.

It is now necessary to connect the lead with the Phono Plug to the switch by connecting it to the two remaining terminals on the switch. The centre wire of the Phono Plug should be connected to the terminal corresponding to the GREEN wire, and the outer screening to that of the BLUE.

Finally, the whole switch insulated to prevent contact with the 80 Column Card. An easy way to do this is to use insulating tape.



BACK.



## WDPRO versus TASWORD

by  
ROBIN DURANT

I run a small business, and use a Word Processor for Letters, Statements, Invoices and other documents, and have tried both WDPRO and TASWORD and have made the following observations:-

First of all, may I mention WORDSTAR, which is, in my opinion, the only one suitable for the larger business, where there is a person, specially employed to carry out the job of letter writing etc:. My concern is with the type of business where the Proprietor does most of the jobs, or where the number of times the Word Processor is used during the week is few.

### TASWORD

I found this very easy to use, for, what you see on the screen is the same as the written letter will be. The program customisation is useful, as you can set it up to suit your own business requirements. There are options as to the style of print, should you require them, from LECTURA to COMPACTA, providing you have a Tatung TP80 Printer, and there are two Help pages, should you forget the commands etc:.

The major disadvantages I found were first, that it is only a maximum of 64 characters per line, where an A4 sheet of paper takes 80, and second, that it has no PROMPT code.

Otherwise it is a reasonably priced, sophisticated program.

### WDPRO

This program is based on entering your text with codes, prefixed with a 'blob', using the ESC Key. Once you have learned these codes, it is very easy to write, but not so easy to see what you have written, as the way the text is displayed is not the way it will be printed.

However, there is a command SETV, which will display your text in the correct manner, if you wish, or you can space the text in a way that can be more easily read.

WDPRO allows you to configure it to the features of your own Printer and lists 6 major manufacturers. It also allows you to set it at 40 or 80 Column.

Another nice feature is the ability to program the 8 Function Keys on the Einstein (16 with shift), to each of the commands, this saves time when operating.

The one feature which requires consideration is the PROMPT code. This enables you to enter a short text from the keyboard into the output while printing, i.e. if one letter is being sent to many people, then the PROMPT will ask "Name", "Address", which you will enter. It also is very useful if using the Processor for Statements or Invoices etc:, which differ each time. I know that other programs enable you to alter the variables, but this one reminds you what the alterations are.

The variations in Script style are restricted to Double Width and Emphasised on this program, but others can be obtained by use of other codes.

### CONCLUSION

There are, of course, many more facilities on each of the programs, which I have not mentioned, but I have tried to name

the main points which would be important to the small businessman who may not be interested in the finer attributes of a program, but more in the effectiveness and simplicity of it, related to his own requirements.

I feel that, if only standard Reports or Letters are required then, the TASWORD for around 20:00p is for you, but if you are going to use it for other uses, such as non-standard Letters or Invoices etc., then it is going to cost you around 58:00p for the WDPRO.

PS

I have had trouble in getting the Centreing Code, Blob C, to work. If you are also having the same problem, try the following:-

Blob C, (text), Blob M, Blob C-.

That is, putting the M Code before the cancelling C Code.

**INTERCOMMS**  
by  
**ROBIN DURANT**

There is a new type of Intercomm on the market which plugs into the Mains, and uses the interconnecting wiring to communicate with the other units, thus dispensing with other wiring.

This type of Intercomm should NOI be connected into the same Ring Main as a Computer. I have found out, to my cost, that, if the Computer and Intercomm are operating at the same time, the Intercomm will be damaged.

I suggest that, if such an Intercomm is contemplated, you ask the dealer if it is compatible with Computers, and receive a written statement of confirmation, or you may find your Guarantee will be null and void.

## LETTERS

This part of the Newsletter was devoted to letters from Users in the previous issue. We intend to change that slightly, and, although this is still the Letters Section, some of the letters have queries, so it has become a 'CAN YOU HELP?' Section also.

Ed

## JEWELLED INSECTS

Since your address appeared in the Tatung Newsletter, I expect you have been inundated with letters, asking for details of the Group.

However, as well as asking for details, I am also asking for help.

There is a 'bug' in XTAL Basic 4.2. If an INCH\$(N) command is used, it corrupts the EOF detection, so that the ON EOF GOTO does not work. The program will fail with a BREAK error (not end of text, as you would expect if you had no EOF trap.).

I have been in touch with CRYSTAL RESEARCH who have admitted that this 'bug' exists and have promised to send me the Patch details to correct the error.

Unfortunately they have not done so, even though I have reminded them since. Therefore, if you have details of this Patch, I would be most grateful to receive it.

S.G. VOINA  
Gravesend

I have been in touch with CRYSTAL RESEARCH about this, and have received the following reply.

To correct your fault, run up DOS and do a LOAD XBAS.COM, noting the number of blocks (60). Next, go into MOS, and do the following :-

```
M 051F      enter 00 3E
M 2B84      enter 11
M 3E00      enter AF 32 CB 01 C3 E9 12
G0
```

Now, back in DOS, do a SAVE 61 XBNEW.COM.

To check your work, do XBNEW from DOS and try your programs.

Thanks to CRYSTAL RESEARCH for their quick reply to this question, and we hope that this has helped some of the Group.

Ed

-o-o-o-

## DOING THE SPLITS

I am desperately searching for the uses of the Scratchpad locations FB4C - FC4E in an attempt to split the 80 Column screen and scroll the two halves separately, for use in

Amateur Radio RTTY applications.

I. CROSSFIELD  
Stocksfield

Any offers?

Ed

-o-o-o-

IQ AUTOEX OR NOI IQ AUTOEX

Keith Stokes uses fixed addresses in his Machine Code programs, and these tend to change with different versions of DOS, if the AUTOEX program doesn't work as you might expect, try changing the DOS version.

P. BURGESS  
Liverpool

-u-o-o-

PRINTER OR GOBBLYDEGOOK

I have an Einstein Computer which I bought from DIXONS, about a month ago, also a TP100 Dot Matrix printer. I got these two items from DIXONS of LEWISHAM, but I'm not getting any help from them as nobody there seems to know how to use them.

I can't seem to get the Printer working, or sometimes I will get a Code Number when I use the Software for the Computer. I would like to inform the Group, and could do with some help myself.

D. CUMMINS  
Ladywell

It sounds daft, but you might try putting the Printer lead into the Einstein, upside down. Anybody else got any ideas?

Ed

-o-o-o-

DISAPPEARING DOS

The DOS on one side of one of my discs will not load on 'Power up' and <CTRL-BREAK> from MOS. I have tried to format the disc but that does not help. If I load the DOS from the other side, and enter Basic, then I can call the DOS from Basic, but if I enter MOS, it is gone. I then have to use the other side again. In all other ways the disc is working fine.

S. PETERSEN  
Aalborg, Denmark

Any offers folks?

Ed

-o-o-o-

### PRINTER PAINS

I have been battling with the problem of running programs on a Serial Printer, the BROTHER EP44 which, if you are not familiar, is a portable typewriter with Computer interface RS232C. It, however, has given me nothing but problems in getting it to run (my inexperience).

With a lot of help from other people, it has now been sorted out, except for running programs, to date KUMA DATABASE and TASWORD, they just won't print.

I enter the suggestions from Hints and Tips and they still won't work. As per the advice, I get on the screen FA3D 79, then, with the cursor on the 7, I then enter A0, then Y and enter the program but it will not print. Can you help? I am getting very exasperated, as I spend hours on trying to sort it out and nothing seems to work. KUMA suggests I list the program and change the Print Instruction to Serial, but, not only would I not know where to start but, as they say, neither would KUMA!!!!

A.F. COAKLEY  
Hertford

The answer to the TASWORD problem may lie in changing the Program Customisation. Under the Printer Type, '5' is for the Parallel Printer Port and '6' is for the RS232 Port. As far as the other program is concerned, has anybody out there got any thoughts?

Ed

-o-o-o-

### CONVERSATIONS

Could anyone give me advice on the advantages of using the Einstein Speech Synthesiser?

Is the Amstrad software program DLAN compatible with the Einstein? If not, is there a similar program available for the Einstein?

B. ELLACOTT  
Westcliff-on-Sea

Any advice?

Ed

-o-o-o-

### WINDSWEPT

I am interested in real-time simulation of machines. I have a simulation running of a wind turbine, which can be controlled against fluctuating windspeeds. In BASIC it runs too slowly. In PASCAL it seems alright, but, so far, I have not been able to read the Analogue Input Ports from the PASCAL version.

My son has a Commodore 64 and I am wondering if I can

simulate that machine on the Einstein, so as to be able to transfer a program from one to the other?

O. DUMPLETON  
Washington

Not got a clue on this one, but an interesting thought, any offers?

Ed

-o-O-o-

### MATHS TRAPS

Perhaps through your Newsletter Columns you may wish to point out a couple of mathematical traps I've fallen into, in sublime ignorance, namely :-

- 1)  $X*X = X^2$
- 2)  $SQR(X) = X^{(1/2)}$

Both these expressions are mathematically correct, but, due to the accuracy of XTAL BASIC, problems can occur. For example, the following three line program calculates the first 100 square integers:-

```
10 FOR J = 1 TO 100
20 PRINT#1;J^2
30 NEXT J
```

If you run this program you will see that the numbers 74, 84, 86 and 97 have not computed accurately enough to give the expected integer values. Then, by inference, real numbers must also be inaccurate. The solution therefore is to use the  $X*X$  for squares and  $X*X*X$  for cubes etc.:

The second expression also uses the 'raised to the power' function, which we have shown above to be troublesome. The square-root of -1 does not exist (in the real number world), however, the following semantic error can catch you out. It should give Error 5.

$$I = (-1)^{(1/2)}$$

The value of I returned was -1, which, if squared, gives 1, not -1 as required.

I hope this information can save other Group Members some of the man hours it has cost me.

To something completely different. I've heard a story that a Mark II version of the Einstein will be being launched towards the end of next year, with a load of extra goodies on board, like better accuracy. If this is the case, I hope that TATUNG will consider the pioneer purchasers of the Mark I version with either an upgrade kit, preferably free of charge, or a replacement mother board, at minimal cost, so as to be innovative enough not to build in obsolescence into an otherwise splendid piece of hardware.

M. PAGE  
Birmingham

How about it TATUNG, is there any truth in the rumour,  
and if so, how are the 'Pioneers' going to be treated?

Ed

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#### STARGAZING

Are there any programs on Astrology which will run on  
the Einstein?

D. CUMMINS  
Ladywell

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#### REVIEWING

For next month's Newsletter I will be reviewing 'SPACE  
TRAP', the new game from Solo Software, and also an exciting new  
possibility from FORCE 4, which is called 'SDUMP', and is a  
Graphics Dump program.

It will be reviewed using Tatung's PICPEN Drawing  
program, which, if it works, will open up a complete new world to  
you architects and artists out there.

J. BRADBURY  
Brighton

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Well, thats it for this Letter Section. Any replies  
back to the Secretary please, and we're looking for more Letters  
and Queries for our next Newsletter. Ed.