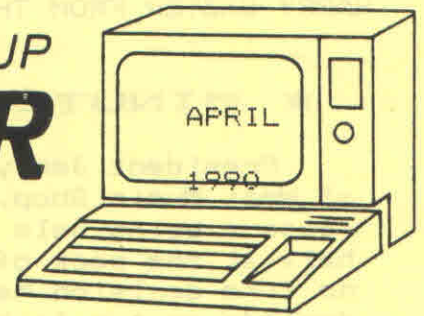


CEDAR VALLEY 99'ER USER GROUP

NEWSLETTER



CEDAR RAPIDS/MARION, IOWA

OFFICERS

PRESIDENT:

Jerry Canady
6616 Kent Dr. NE
Cedar Rapids Iowa 52402
(319) 377-9382 (Home) or
(319) 395-2494 (Office)

VICE PRESIDENT:

Gary Bishop
3270 28th Ave.
Marion, Iowa 52302
(319) 377-9574

SECRETARY:

Bill Paeth
923 Owen St. NW
Cedar Rapids, Iowa 52405
(319) 396-6470

TREASURER:

Bruce Winter
702 Fernwood Dr. NE
Cedar Rapids, IA 52402
(319) 393-0610

COMMITTEES

PROGRAM:

Ed Edwards
102 N. Davis St.
Anamosa, Iowa 52205
462-2329

PUBLICITY:

Paul Mortensen
301 Pebble Lane
Hiawatha, Iowa 52233
393-6022

EDUCATION/LIBRARIAN:

John Johnson
398 Forest Dr. SE
Cedar Rapids, Iowa 52403
366-4541

EDITOR:

Jim Green
377 Cambridge Dr. NE
Cedar Rapids, Iowa 52402
377-4073 (Home) or
395-1898 (Office)

****NEWSLETTER TOPICS****

1. Future Meeting Dates
2. Next Meeting Notes
3. Minutes from the March Meeting
4. Tips from the Tigercub #59
5. Modems!
6. More Modems!
7. 4-D Graphics Revisited
8. New Officers Elected

****FUTURE MEETING DATES****

Please mark the following dates on your calendar for future meetings:
APRIL 9, MAY 14, JUNE 11.

*****NEXT MEETING*****

The regular monthly meeting will be Monday, April 9, at West Music, Cedar Rapids, with open discussion starting at 6:30 PM. Jerry will talk about how to use the Formatter section of TI Writer found on your Funnelweb disk. Learn how to control your printer's output!

* MINUTES FROM THE MARCH MEETING *

President Jerry Canady called the meeting to order on March 12, 1990 at West Music Shop. He announced that due to the continuing piano lessons being held in our usual room, we would have to meet again in the hall at the back of the store. Jerry had been in contact with them but no firm decision had been made yet. A return to our usual meeting room depends on two factors: 1. The piano class may move to another evening. 2. We may move to another evening or location. A discussion followed. Several other locations were mentioned but the majority felt that a move to Tuesday evening would be best. Jerry will keep in touch with West Music and set up our meeting schedule. Expect to be notified in the next NEWSLETTER about our meeting location and date.

Finally it was time for the first order of business. There were 13 members present at the meeting. We also welcomed a new TI user and signed her on as a member. Welcome to the UG Betty Hobel!

It was moved, seconded, and passed that the minutes for February be accepted as printed in the NEWSLETTER.

The treasurer then read his report. It was moved, seconded and passed that the report be accepted as read.

OLD BUSINESS: 1. Jerry reminded us that tonight was election for the new officers to run the UG for the next year. Several of the old officers can not continue with their duties and other members have placed conditions on their being included on the slate of candidates. More on this later. 2. John reported that the video tape of FUNNELWEB has not been ordered. A check was issued by the treasurer but was placed on hold because Jerry found a written instruction on CONFIGURATION in a UG newsletter received this month. His demo tonight was on this instruction. The subject of the video purchase will be brought up again next month.

NEW BUSINESS: None was forthcoming.

DISCUSSION: 1. A question from the floor, "How do I load MAJOR TOM?" led to a general discussion of Ed's disc of the month. The answer, "Use option 3 of Editor Assembler, then at the prompt 'WHAT NEXT' use LOTS as the connecting link to load the rest." 2. John announced that he has received the first section of a tutorial on assembly language by Mac McCormick. Would any one want to join him in a SIG to learn about assembly? 3. Jim made mention of the article he included in the last NEWSLETTER. Can we help this teacher and her new UG of elementary school children? Her address is available from Jim or Bruce. 4. Jerry has found a source for half height disc drives. He will make a mass buy if enough are wanted. 5. A discussion on the FCC "regulation" to control MODEMS was held. It is believed to be a false rumor at this time.

ELECTION: Gary Bishop volunteered to run for President if someone would be on the slate with him. John Johnson was nominated from the floor. Gary was elected. John was then nominated for the V.P. position and was elected by acclamation. Bruce Winter had agreed to continue as treasurer and was affirmed in that position. The position of secretary was a little more complicated. Bill Paeth could not continue in the position because of a conflict in half of the Monday meeting nights. With the possibility of changing to Tuesday he agreed to run. Bob Wahlstrom agreed to run for the Monday night possibility. Both were affirmed by voice vote with the one to take office in May to be determined by the meeting night.

The demo tonight was by Jerry. He showed how to CONFIGURE using FUNNLEWEB vn4.13.

Submitted by Bill Paeth, Secretary

MODEMS!

(Or what does a 4700 ohm resistor have to do with anything anyhow?)

I am an electronics technician by trade and a computer programmer by hobby. I have from time to time toyed with the idea of getting into amateur radio. That is as far as that ambition has ever gotten. While down loading a program for this computer club from a BBS (Bulletin Board System), it occurred to me to substitute working BBS's for my ham radio aspirations. The phone lines aren't free, but neither are the air waves if you count equipment costs. Besides, I already had a computer and a 300 baud modem. Yes, it all seemed very logical and economical at the time.

The next Saturday brought low phone rates and a chance to try out my idea. I got on the BBS Tenex has to retrieve a file I had noticed earlier. That down load was interrupted by a family member picking up another phone. What were they doing up that time of the morning anyhow? The next call produced another half down load due to a mysterious drop out on the phone lines. Five calls later, I found a loose connection in the phone plug. Finally I got my file. I also called the PUG BBS and spent another half hour there. A few weeks later the phone bill arrived. Twenty seven dollars for my BBS phone calls! Not acceptable.

Time to rethink and make this thing logical and economical. Well, half the bill was because the phone connection was bad (\$14). I didn't know the BBS procedures well (\$12). Still too much. A 1200 baud modem would cut the time to one fourth (\$3). Better. The only way to go!

Two weeks later I had purchased a 1200 baud modem for under \$50 from a fellow club member (economical). It worked on his TI system. It worked on the club's system. It would not work on my system! I read the book on the modem. I called several club members for advice. I called the modem manufacturer's 800 number and talked to their technicians. I called a certain club member three days in a row asking advice. The third day I called I opened the conversation with "Boy, am I having fun!" He responded by asking if I had my clothes on. Despite all the help and advice, it took three more nights of labor to discover that the Myarc RS232 in my PE box would not accept the 12 volt data levels going into it from the modem. A 4700 ohm resistor in that line dropped the levels to something it could handle. I don't know if this is a bad board or engineering flaw or what. Anyway, it all works OK now, my wife doesn't have that hurt look in her eye any more and my sons have stopped mumbling between themselves about Dad's at it again. So all is well that ends well. I haven't gotten another phone bill yet, but calculating at 15 cents an hour so far my calls this month should run right at \$3.50.

Conclusion...Now that it all works, I have given some thought to operating sans clothing. We just finished Winter. Too cold. Still, in the Summer with the air conditioner off.....the nude programmer.....Na.....EOF

J Johnson CR

Modems! (Auto Dialers)

So the modem works and I have some familiarity with BBS commands. What next? Get the auto dialer working. After my call to the modem manufacturer, I know my modem is not Hayes compatible. Since Telco comes with Hayes defaults in its commands, this explains the horrible things that happen when I try to use the Telco auto dialer.

Looking in the Telco docs index under auto dialer lists page number 14 only. Rereading that page yields no clue what to do next. The next several days involved rereading the modem manual, using a sector editor to read the auto dialer program, etc. Rereading the Telco docs produces the setup example on the auto dialer at the rear of the document. Unfortunately, these do not address the problem I am working on. Finally after almost deciding to let the problem go for some future date, I accidentally (what else) stumbled onto a section of the setup procedure labeled simply "modem setup". Bingo! All the setups here seem to be auto dialer setups. Most of the items are Greek to my uneducated eye except the line labeled predialer string. I know my modem's auto dialer needs a "D" in front of the phone number to work. The default values "ATDT" were confusing my modem. Changing that item to simply "D" started me on the road to success.

At this point I will end the endless details of my trials and get to the good stuff. What I found out while getting the thing working. Since I used Telco, these are terms from those docs. I hope they will apply to other programs as well.

1. Initialization string - These characters are sent to the modem when your software program starts running. My modem looks for the letters "EN" to start up the auto dialer.
2. Predialer string - Characters sent prior to each phone number before it is dialed. I put a "D" for dial and "1170" to disable my call waiting.
3. Disconnect string - Characters sent to the modem to tell it the program has sensed a disconnect. This is used when a predetermined character is sent at disconnect time.
4. Number time - The length of time before the program stops looking for the modem to acknowledge the last number sent to it.
5. Redial Time - Time wait for redial. I set this and #4 to max and worked down from there. Be prepared to wait for some slow dialing if you do this.

So far, I haven't gotten 100% handshaking between Telco and my modem's auto dialer. Telco won't recognize when the BBS has come up. So I have settled for having Telco's auto dialer dump the number into the modem's memory slot number one and I use the modem auto dialer from there on. Good enough for now...EOF

J Johnson CR

Look for the next installment in John's tales of telecommunications in next month's NEWSLETTER!

MORE ON 4-D GRAPHICS by Jim Peterson

It seems that my previous article on creating 4-dimensional graphics has created some controversy. Programmers have reported no success in creating these graphics, and some have even questioned my logic.

In fact, these programmers may have succeeded without knowing it. I regret to report that a program to create 4-D graphics will result in nothing more than a blank screen because I have now learned that 4-D objects are invisible!

The proof of this is found, not in the laws of geometry, but in the study of natural science. I refer to that rare and elusive reptile known to the Indians as Wig-Lum-No-See-Um, which translates as "The Snake That Has Never Been Seen". As all Indians know, when this snake is in danger of being observed, it grabs its tail in its mouth and swallows itself, thereby becoming invisible. When the danger has passed, it spits itself out and again becomes visible but unseen. For this reason, it has never been described by biologists.

Now, my hypothesis was that a 4-D object could be created by the rotation of a 3-D object. A snake is obviously a three-dimensional object, and it must obviously rotate in order to swallow itself. Since this causes it to become invisible, we may safely assume that all four-dimensional objects become invisible while being created.

*** NEW OFFICERS ***

Congratulations to the newly elected officers of the Cedar Valley 99er User Group! They will take office effective May 1, 1990.

President: GARY BISHOP

Vice-Pres: JOHN JOHNSON

Treasurer: BRUCE WINTER

Secretary: BILL PAETH/BOB WAHLSTROM

TIPS FROM THE TIGERCUB

#59

Tigercub Software
156 Collingwood Ave.
Columbus OH 43213

I am still offering over 120 original and unique entertainment, educational and utility programs at just \$1.00 each, or on collection disks at \$5.00 per disk.

The contents of the first 52 issues of this newsletter are available as ready-to-run programs on 5 Disks REDUCED TO \$5 each!

My three Nuts & Bolts Disks, ARE NOW REDUCED TO JUST \$10 EACH. Each contains over 100 subprograms for you to merge into your own programs to do all kinds of wonderful things.

My catalog is available for \$1, deductible from your first order (specify TIGERCUB catalog).

TI-PD LIBRARY

I have selected public domain programs, by category, to fill NOW OVER 300!! disks, as full as possible if I had enough programs of the category, with all the Basic-only programs converted to XBasic, with an E/A loader provided for assembly programs if possible, instructions added and any obvious bugs corrected, and with an auto-loader by full program name on each disk. These are available as a copying service for just \$1.50 post-paid in U.S. and Canada. No fairware will be offered without the author's permission. Send SASE for list or \$1, refundable for NEW 11-page catalog listing all titles and authors. Be sure to specify TI-PD catalog.

The first few disks that I distributed of my Tips #58 had a poor version of my Datewriter program. Those which are titled TIPS #58.1 have the correct version. If you received the bad one, please ask me for another.

In Tips #42 I published this algorithm and asked why I could not get C to equal 9 or 12 or 99.

```
100 CALL CLEAR
110 DISPLAY AT(18,1):"A? " :
: ACCEPT AT(18,4):A :: DISPL
AY AT(20,1):"B? " :: ACCEPT
AT(20,4):B
120 IF A=2 THEN IF B=2 THEN
C=4 ELSE IF A=2 THEN IF B=3
THEN C=6 ELSE IF A=3 THEN IF
B=3 THEN C=9 ELSE IF A=3 TH
EN IF B=4 THEN C=12 ELSE C=9
9
130 DISPLAY AT(22,1):"C=":C
:: GOTO 110
```

A couple of programmers wrote to tell me the error I was making. This way it will work -

```
120 IF A=2 THEN IF B=2 THEN
C=4 ELSE IF B=3 THEN C=6 EL
E C=99 ELSE IF A=3 THEN IF
B=3 THEN C=9 ELSE IF B=4 THEN
C=12 ELSE C=99 ELSE C=99
```

If an IF is not true, the program execution jumps to the first ELSE which is not already paired with an IF. If there is no such unpaired ELSE, execution jumps to the next program line. In the correct example, IF B=2 is paired with ELSE IF B=3, and IF B=3 is paired with the first ELSE C=99, so if A=2 is not true then execution jumps to ELSE IF A=3. The second IF B=3 is paired with ELSE IF B=4 and IF B=4 is paired with the second ELSE C=99, so if A=3 is not true, execution jumps to the final ELSE C=99.

Here's a bit of a new idea

in a spelling program. If your word has the correct number of letters but some are wrong, it shows you the wrong ones.

```
100 DISPLAY AT(3,11)ERASE AL
L:"SPELLIT" !by Jim Peterson
110 DATA HIPPOPOTAMUS,CRITIQ
UE,KHAKI,IRIDESCENT,ARCHAIC,
PNEUMONIA
120 !add as many DATA statem
ents as you want
130 FOR CH=97 TO 122 :: CALL
CHARPAT(CH-32,CH):: CALL C
HAR(CH,CH):: NEXT CH :: CAL
L COLOR(9,8,2,10,8,2,11,8,2,
12,8,2)
140 DATA END
150 READ M$ :: T=100 :: IF M
$="END" THEN CALL CLEAR :: S
TOP
160 GOSUB 230 :: ACCEPT AT(1
2,1)SIZE(-28)BEEP:Q$
170 IF Q$=M$ THEN CALL SOUND
(100,392,5):: CALL SOUND(200
,523,5):: DISPLAY AT(12,1):"
" :: GOTO 150
180 FOR J=1 TO LEN(Q$):: IF
SEG$(Q$,J,1)=SEG$(M$,J,1)THE
N 210
190 DISPLAY AT(12,J):CHR$(AS
C(SEG$(Q$,J,1)+32);
200 T=T+50 :: IF LEN(Q$)=LEN
(M$)THEN GOSUB 230 :: GOTO 2
10 ELSE DISPLAY AT(12,J+1):"
" :: J=LEN(Q$):: GOTO 160
210 NEXT J
220 T=T+50 :: GOTO 160
230 DISPLAY AT(10,1):M$ :: F
OR D=1 TO T :: NEXT D :: DIS
PLAY AT(10,1):"" :: RETURN
```

When I'm not writing programs, I like to write songs but the only way I can get anyone to listen to my music is to program it. Lucie Dorais of the Ottawa U6 made this neat routine to program waltz music, and I plugged one of my songs into it.

```
100 CALL CLEAR :: CALL SCREE
N(2):: FOR X=4 TO 12 :: CALL
COLOR(X,16,2):: NEXT X
110 CALL CHARPAT(39,A$,44,B$
,38,C$):: CALL CHAR(61,A$,96
,B$,64,C$)
120 DISPLAY AT(2,7):"SEDUCTI
```

```
ON WALTZ:"": "Words @ music
Program by": "by Jim Peters
on Lucie Dorais"
130 FOR D=1 TO 700 :: NEXT D
140 CALL CLEAR :: CALL START
(95,23,95,199)
150 LB=123 :: LC=131 :: LD=1
47 :: LE=165 :: LF=175 :: LG
=196 :: LA=220 :: B=494 :: C
=523 :: D=587 :: E=659 :: F=
698 :: G=784 :: A=880
160 HB=988 :: HC=1047 :: RV=
5 :: CV=9
170 DIM M$(16):: FOR J=1 TO
16 :: READ M$(J):: NEXT J
180 GOTO 190 :: A$,TIME,X,Y
:: CALL DELSPRITE :: !@P-
190 FOR TIME=1 TO 4
200 Y=Y+1 :: DISPLAY AT(1,1)
:M$(Y):: CALL BAR(RV,CV,-RV,
-CV,G,C,C,LC,LE,LG)
210 CALL BAR(0,CV,0,-CV,C,D,
D,LC,LE,LG)
220 CALL BAR(-RV,CV,RV,-CV,C
,E,E,LC,LE,LG)
230 CALL BAR(-RV,0,RV,0,E,E,
E,LC,LE,LG)
240 Y=Y+1 :: DISPLAY AT(1,1)
:M$(Y):: CALL BAR(-RV,-CV,RV
,CV,G,C,C,LC,LE,LG)
250 CALL BAR(0,-CV,0,CV,C,D,
D,LC,LE,LG)
260 CALL BAR(RV,-CV,-RV,CV,C
,E,E,LC,LE,LG)
270 CALL BAR(RV,0,-RV,0,E,E,
E,LC,LE,LG)
280 Y=Y+1 :: DISPLAY AT(1,1)
:M$(Y):: CALL BAR(-RV,CV,RV,
-CV,G,A,A,LF,LA,LC)
290 CALL BAR(0,CV,0,-CV,A,F,
6,LF,LA,LC)
300 CALL BAR(RV,CV,-RV,-CV,A
,G,A,LF,LC,LA)
310 CALL BAR(RV,0,-RV,0,G,E,
E,LC,LE,LG)
320 Y=Y+1 :: DISPLAY AT(1,1)
:M$(Y):: CALL BAR(RV,-CV,-RV
,CV,G,G,D,LG,LB,LD)
330 CALL BAR(0,-CV,0,CV,F,E,
B,LG,LB,LD)
340 CALL BAR(-RV,-CV,RV,CV,D
,C,C,LC,LE,LG)
350 CALL BAR(-RV,0,RV,0,C,C,
C,LC,LE,LG)
360 CALL PATTERN(#1,132,#2,1
28):: CALL MOTION(#1,0,0,#2,
0,0)
370 NEXT TIME
380 CALL BAR(RV,0,RV,0,5,5,D
,LG,LB,LD)
```

```

390 CALL BAR(RV,0,RV,0,F,E,H
C,LG,LB,LD)
400 CALL BAR(RV,0,RV,0,HB,HC
,HC,LC,LE,LG)
410 CALL DELSPRITE(ALL)
420 CALL BAR(RV,0,RV,0,HC,HC
,HC,LC,LE,LG)
430 DISPLAY AT(24,11):"AGAIN
? Y" :: ACCEPT AT(24,18)SIZE
(-1)VALIDATE("YN"):A#
440 IF A#="N" THEN END ELSE
DISPLAY AT(24,11):" " :: Y=0
:: CALL START(95,23,95,199):
: GOTO 190
450 !@P+
460 DATA Dance with me by th
e light of the moon,And swa
y to the throbbing guitars
.The love that we feel is a
love that is real
470 DATA And it's witnessed
by only the stars,Is it wro
ng to love and be loved?,Is
it wrong to kiss and ca
ress?,Is it wrong to rest in
the arms'
480 DATA Of the one you love
the best?,What's the di
fference what others may sa
y?,Does it matter who is to
blame?
490 DATA When the wind of sp
ring's in your hair,And the m
oon makes your hearts be
at the same
500 DATA "Come with me' let
us run' let us go",In the
darkness and no one will se
e.Come with me to a place th
at I know
510 DATA On this wild night
of love stay with me
520 !@P+
530 SUB START(R1,C1,R2,C2)
540 CALL CHAR(128,"070F0A0B0
B0307070F0F1F1F3F3F021C1C0
3FC1CFC1C1C9C8C8C8E8E8E8E18"
)
550 CALL CHAR(132,"3B3B103F3
83F3B3B3911131317171718E0F05
0D0D0C0E0E0F0F0F8F8FCFC40")
560 CALL CHAR(136,"030301030
303030307070F0F1F1F1F02B0B00
0B0B0B0B0C0C0C0E0E0F0F0F080"
)
570 CALL MAGNIFY(4):: CALL S
PRITE(#1,128,8,R1,C1,#2,132,
10,R2,C2):: SUBEND
580 SUB BAR(R1,C1,R2,C2,T1,T
2,T3,B1,B2,B3)

```

```

590 P2=128-4*(P1=128):: P1=1
28-4*(P2=128)
600 CALL PATTERN(#1,P1,#2,P2
):: CALL MOTION(#1,R1,C1,#2,
R2,C2):: FOR T=1 TO 4 :: DAL
L SOUND(-999,T1,5,T1*1.01,5,
B1,10):: NEXT T
610 FOR T=1 TO 6 :: CALL SOU
ND(-999,T2,5,T2*1.01,5,B2,10
):: NEXT T :: CALL PATTERN(#
1,136,#2,136)
620 FOR T=1 TO 4 :: CALL SDU
ND(-999,T3,5,T3*1.01,5,B3,10
):: NEXT T :: P1=P2 :: SUBEN
D

```

If you're watching your diet -

```

100 DISPLAY AT(1,1)ERASE ALL
:"NUTRITION LABEL INTERPRETE
R": " by Jim Peterson": "
:" To help you understand t
hemandatory FDA nutrition
labels on food packages."
110 DISPLAY AT(8,1):"Calorie
s per serving?" :: ACCEPT AT
(8,23)VALIDATE(NUMERIC)BEEP:
C
120 DISPLAY AT(10,1):"Grams
of fat?" :: ACCEPT AT(10,15)
VALIDATE(NUMERIC)BEEP:F
130 DISPLAY AT(12,1):"Grams
of sucrose & other": "sugars?
" :: ACCEPT AT(13,9)VALIDATE
(NUMERIC)BEEP:S
140 DISPLAY AT(15,1):"Grams
of starch and other": "carboh
ydrates?" :: ACCEPT AT(16,16
)VALIDATE(NUMERIC)BEEP:K
150 F=INT(F*9/C*100+.5):: S=
INT(S*4/C*100+.5):: K=INT(K*
4/C*100+.5)
160 DISPLAY AT(18,1):STR$(F)
&"% of calories from fat":ST
R$(S)&"% of calories from su
gars":STR$(K)&"% of calories
from": "starches and carbohy
drates"
170 DISPLAY AT(22,1):STR$(10
0-F-S-K)&"% of calories from
dietary fiber."
180 GOTO 110

```

I came across this beauty of a routine in the Summer 1989 newsletter of the Lehigh 99'er Computer Group. Assemble it with only the R option, as TRACK/D.

```

*****
* BOOT TRACKING *
* Adrian Robinson *
* May 1989 *
* CALL LINK("TRACK",A#) *
*****

```

```

DEF TRACK
STRASS EQU >2010
VMBR EQU >202C
MYWS BSS 32
H30 BYTE >30 >3011
BYTE 11
DSK BSS 11
EVEN
TRACK LWPI MYWS
LI R0,>3FF5
LI R1,DSK
LI R2,11
BLWP @VMBR
AB @H30,@DSK
CLR R0
LI R1,1
LI R2,DSK-1
BLWP @STRASS
LWPI >B3E0
CLR @>B37C
B @>70
END

```

When you load a program, the DOS saves its drive number at >3FF5 and the filename in the next 10 bytes. By recovering this drive number, you can write your program to open and read files from whatever drive the program may be loaded from.

You can load this routine by a CALL LOAD, but that must be preceded by a CALL INIT which will wipe out the record in >3FF5, so you will need to start the program with this line -

```

100 CALL INIT :: DISPLAY AT(
12,1)ERASE ALL:"DRIVE NO.?"
:: ACCEPT AT(12,12):D# :: CA
LL LOAD("DSK"&D#&".TRACK/O")
:: CALL LINK("TRACK",A#)

```

Then, when you want to open a file, OPEN #1:"DSK"&SEG\$(A#,1,1)&". "&(the filename)

However, if you imbed this routine in your program with Todd Kaolan's invaluable ALSAVE routine, you can omit the LOAD routine!

And to fill the column -

```

100 CALL CLEAR :: FOR J=1 TO
12 :: CALL COLOR(J,16,2)::
NEXT J
110 CALL SCREEN(2):: DISPLAY
AT(3,5):"SNOWFALL ON GANYME
DE": " " " THE SNOWFLAKES ON
THE THIRD": " " " "MOON OF JUPI
TER ARE LARGE"
120 DISPLAY AT(12,1):"AND IN
MANY COLORS, BUT LIKE": " " "
"THOSE OF EARTH THEY ARE": "
" " "ALWAYS SYMMETRICAL AND NO
"
130 DISPLAY AT(21,1):"TWO AR
E EVER THE SAME."
140 C=3 :: Y=1 :: CALL MAGNI
FY(3):: RANDOMIZE :: FOR CH=
40 TO 120 STEP 4
150 FOR J=1 TO 8 :: FOR K=1
TO 8 :: Z=INT(12*RAND+2):: X=
INT(Z*RAND+1):: X#=#X#STR$(AB
S(X=Z)):: Y#=#STR$(ABS(X=Z))&
Y# :: NEXT K
160 CALL BIN_HEX(X#,H#):: A#
=#A#&H# :: B#=#B#&B#
170 Y#=#SEG$(Y#,2,7)&"0" :: C
ALL BIN_HEX(Y#,H#):: C#=#C#&H
# :: D#=#H#&D# :: X#,Y#="" ::
NEXT J
180 CALL CHAR(CH,A#&SEG$(B#,
3,14)&"00"%C#&SEG$(D#,3,14))
:: CALL CLEAR :: CALL SPRITE
(#Y,CH,C,150,150,15*RAND-15*RN
D,15*RAND-15*RAND)
190 A#,B#,C#,D#="" :: C=C+1+
(C=16)*14 :: Y=Y+1 :: NEXT C
H
200 GOTO 200
210 SUB BIN_HEX(B#,H#):: HX#
=#0123456789ABCDEF :: BN#=#
0000X0001X0010X0011X0100X010
1X0110X0111X1000X1001X1010X1
011X1100X1101X1110X1111"
220 L=LEN(B#):: IF L/4<>INT(
L/4)THEN B#=#0#&B# :: GOTO 2
20
230 FOR J=L-3 TO 1 STEP -4 :
: X#=#SEG$(B#,J,4)
240 X=(POS(BN#,X#,1)-1)/5 ::
T#=#SEG$(HX#,X+1,1)&T# :: NE
XT J :: H#=#T# :: T#="" :: SU
BEND

```

NEXT MEETING

MONDAY, APRIL 9

6:30 PM --- WEST MUSIC COMPANY

CONTINUING WITH FUNNELWEB

EXPLANATION OF THE FORMATTER

**Cedar Valley 99'er Users Group
377 Cambridge Dr. NE
Cedar Rapids, Iowa 52402**

Send To:

**GARY BISHOP
124-222
3270 28TH AVE
MARION IA 52302**