VOLUME 4 NUMBER 1 JANUARY 198~~6~~ 86

Next meeting February 8th
At the Hurst Public Library
9 am till 11 am

The reviews, evaluations and opinions contained in articles in this newsletter are the authors' own and do not reflect the views of the NET 99er HCUG.

Northeast Tarrant Home Computer Users' Group

Devoted to the

TI-99/4A

President's Page

One of the first jobs as your new President is to write in the news letter. It seems hard, but I hope it get's easier as time goes on. I would like to thank everyone who voted for me. A couple of years ago I felt great going to the President's house. I just started out. I had a computer and a tape recorder. Leroy way the President and he helped me alot. And to repay him he told me to help someone else. Well the time came and I accepted to run for the Presidency. As President one thing I ask is to lend your knowledge to someone else. Even if it's how to load a program through a tape recorder.

We all benefit from it.

I would like to thank Jo Lambert for her leadership this past year and hope I can do as well. I would also like to thank Robert Stone for the donation of the TI Writer. Gary Fuquay has decided to move on to another computer. Gary was our past Newsletter Editor. I think he did a great job over the last year and I wish him well in his new endevor. Since we needed a new Editor, I have asked Jeff Gatlin to take his place. I would ask that we give Jeff our full support and help with this new job. Any contributions to the Newsletter should be directed toward Jeff.

We are also faced with a problem on a meeting date. The Dallas Group joined with the Dallas Computer Counsel. They also have their meeting on the second Saturday of each month. I heard it was a hard decision and they didn't want a conflict, but we all know that a good meeting place is hard to find. In order to promote the 99/4A I would like to suggest that we change our meeting date to the first Saturday of the month. This would not only help our friends in Dallas, but we might benefit from the Info Mart Group. I hope you will all think about it and we can discuss this at the next meeting.

TO ALL USERS GROUPS

If you haven't received our newsletter every month, Please let us know. Also any Users Group who would like to receive our newsletter let us know. Remember: We all have to stick together.

MINUTES
NET 99ER HCUG
JANUARY 11, 1986

The Net 99er Home Computer Users Group met Saturday, January 11, 1986, at 9:00 A.M. in the Hurst Public Library, with President Jo Lambert presiding. A motion was made and approved to accept the minutes of the last meeting as published in the newsletter.

The treasurer's report was given by Charles Bathman. He reported a net of $186.23 for the month of December and a net of $839.50 for the year 1985. A motion to accept the report was seconded and approved.

President Lambert reported that the last two copies of GRAPH X had been distributed. She then made a brief report concerning her year of presidency.

Gerry Myers presented the report of the nominating committee, composed of Myers, LeRoy Thompson, and Tom Hall. President Lambert reported that the Chair was open to nominations from the floor. Their being none, the club accepted the slate of officers as presented by the nominating committee by acclamation. The officers for the coming year are as follows:

President -- Ken Dominiec (817) 656-1473
Vice President -- Lee DeForest (817) 237-9746
Treasurer -- Jim Stewart (214) 370-0922
Secretary -- Lexie Glenn (817) 232-2852

President Lambert reminded the group that there are many volunteeer and appointed posistions available to continue with the smooth running of the organization. John and Jo Lambert have volunteered to continue with bulk mailing of the newsletter. Jeff Gatlin has volunteered to edit the newsletter.

Robert Stone has donated a TI WRITER to the group to be raffled. After a discussion of whether to include this donation with today's planned raffle, a motion was made and approved to continue with the policy of one raffle per meeting.

This month's winner of the drawing for a TI WRITER was Ray White.

After a brief buy and sell session, several announcements were made by members:

First Saturday Flea Market in Dallas has hardware, cables, etc. for TI. This Flea Market is located at Ross Central Expressway, between Wholesale Electronics and Heathkit. It was suggested that those interested arrive by 6:30 A.M.

INFOMART has a good supply of TI in the basement.

Bill Duncan told of a noiseless fan for the PEBox that works. It is the E G G Rotron Fan and sells for $15.50 + $1.50 shipping (or $17.00).

Statco Inc.
P. O. Box 145
Townsend, Maine 01469-1045

Computer Age in Prestonwood Mall still has TI software.
Toys R Us Northeast has TI joysticks.

Fulton Cook gave a demonstration of extending the distance between the TV and the computer by adding coaxial cable to the RF modulator. He also added an audio jack to the modulator.

Before taking a break, members expressed their appreciation for

the hard work, time, and effort of the outgoing officers.

After the break, a short question and answer time was held. Answers from members included how to make efficient use of the library, the possibility of a new BASIC class forming, and the need for a PASCAL SIG.

Our next meeting will be Saturday, February 8, 1986, at 9:00 A.M. in the Hurst Public Library.

President Lambert adjourned the meeting.

Respectfully submitted,
Lexie Glenn, Secretary

RANDOM ACCESS

by LeRoy Thompson

I was quite sorry that I had to miss the last meeting. However, since I worked on the nominating committee, I had a preview of what was going to happen. I had the opportunity of talking with most of the newly-elected officers before they were elected. I feel that we have elected an excellent crew to lead our group for the next year. Let's all of us give them the support that they deserve. VOLUNTEER and help when it's needed.

I can go no further without stopping to give thanks to our outgoing officers. They have done a great job for us. I think that Jo (who was railroaded somewhat into the job) did us a great service and enjoyed herself in the process. It was really nice to have a feminine viewpoint for a change.

Thanks to Robert Wessler we get news of the TICOFF (TI Computer Owners Fun Fest) which will be held in early March in New Jersey. This location is in Myarc's back yard and the new machine will be demonstrated there (we all hope). Also from Robert, we hear of the 99 Fest-West 86 scheduled for March 12 in LA. This event promises to be a BIG one with both Myarc and Miller in attendance. We should all keep our ears open for any news associated with these events. In that vein, the latest rumors are that rumors are difficult to get from the Myarc direction. The only thing flowing is the rumor about production (?) starting on . . . (I don't know either).

I have heard from both the Lubbock direction and the New Jersey direction that Unisource in Lubbock is no longer in business. IT is a pity to lose one of our few suppliers. However, firms like Tenex must be going strong since I just received my second 'Everything Book'.

I have just run across an excellent amortization program which was written by a friend at work. He originally wrote it some years ago and it has been on various main frame computers over the years.

Right now it is in IBM-compatible form. I plan to translate it soon and make it available for us in the TI XB form. It has an excellent printed output. It was so good that I decided to run another amortization schedule for my house. What is really amazing is how well the numbers correlate with those that I hacked with a calculator some 11 years ago. This is program to look forward to.

I enjoyed one other event during the holidays. I received a very unexpected phone call. I was called by Jim Horn who is the leader of the TI Forum on Compuserve. He was passing thru town and was given my number as a person to call. The news from him at that time was that the first folks to get Gram Krackers were beginning to report about them on Compuserve. The reports were all favorable. It was sad that I had to tell him that I didn't think that I could trust myself on Compuserve not to run up an exhorbitant bill. All in all, it was a pleasant chat that was totally a surprise.

LeRoy Thompson

THE MUSIC CORNER
by Jeff Gatlin

I always had a secret desire to write a column for the newsletter that would cause people to say "Hey that's somethin! Wish I had known that sooner." Well, maybe someday I will but for right now I'll settle for a slap on the back from the editor (a personal friend of mine) and a few people saying "Gee Jeff, your column wasn't TOO bad." So with that in mind I now make an attempt to jump in the lake of informative writing without splashing to much confusion on everybody. (If you get splashed, feel free to ask me for a towel.)

Whenever I think about programming music on the 4a, I think about how much time its going to take to key in all those CALL SOUND statements. Forever is usually my first conclusion, especially since I don't really know how to type (so far I've gone from "hunt and peck" to "very fast hunt and peck"). So, after putting it off a few times, I finally get "the itch" to do it no matter how long it takes.

My next concern is which programming trick will I use to make the desired song 'sing' through the computer instead of spit and hiccup its way through. So far I have encountered 4 distinctive methods. These methods are (as I call them): 1)The CALL SOUND method, 2)The DATA method, 3)The GOSUB method, and 4)The ARRAY method.

The CALL SOUND method is simple enough to explain: A series of CALL SOUND statements, each with different information.
Example:

```
100 CALL SOUND(800,147,10,220,10,370,10)
110 CALL SOUND(800,165,5,247,5,415,5)
120 CALL SOUND(1600,110,0,227,0,440,0)
```

This produces smooth, precise sounds but gets very tiresome for the non typist. My first variation was setting up variables for all

the notes to avoid constantly refering to the manual for the appropriate frequency. It worked, but it didn't save me any typing time or memory.
So what else can I try?

The DATA method. This method involves setting up DATA statements which contain the notes, a READ statement to assign the notes to variables, a single CALL SOUND statement with variables read from data, and a clever FOR TO NEXT statement.
Example:

```
100 FOR REP=1 TO 4
110 READ A,B,C
120 CALL SOUND(400,A,0,B,0,C,0)
130 NEXT REP
140 RESTORE
150 GOTO 100
200 DATA 110,40000,40000,139,330,440,147,40000,40000,165,277,440
```

The notes with frequencies of 40000 are used to create silence without having to key in a seperate CALL SOUND statement with only one note. You remember, those high pitched frequencies which we humans can't hear but make your dog tilt its head.(Don't worry about your pet. Most speakers cannot produce this frequency).

The disadvantage of this method is when you have a program with oodles of data (lots of notes), you occasionally get hiccups. The cause lies somewhere in the BASIC language. I've been told that basic generates garbage that has to be taken out occasionally. When the garbage is dumped the computer hiccups causing the flow of the music to be interrupted. However, it usually takes quite a bit of data or an extreme tempo (speed) to cause hiccups.

The GOSUB method was introduced to me by Gerry Myers. It involves keying in one or more CALL SOUND statements(as needed) and follow them with a RETURN statement. Once done, your programming consists of redefining the CALL SOUND variables, and adding a GOSUB statement to initiate the sound.Just to make things easier, set up variables for each note within an octave(see lines 100-110 below). Now instead of having a variable for every note, you alter the base variable(is this making sense). For example: BF is B flat, BF*2 is B flat 1 octave higher, BF*4 is 2 octaves higher, BF*8 is 3 octaves higher and so on. BF/2 is 1 octave lower, and BF/4 is 2 octaves lower. Explanation: well there is one, its just that if I try to explain it correctly you'll probably put down the article and grab the TV guide. Very simply: double the frequency of any note and you'll have a note one octave higher, half the frequency of any note and you'll have a note one octave lower.
Example:

```
100 B=493.88 :: AS,BF=466.16 :: A=440.00 :: GS,AF=415.30 :: G=392.00 :: FS,GF=369.99 :: F=349.23
110 E=329.63 :: DS,EF=311.13 :: D=293.66 :: CS,DF=277.18 :: C=261.63 :: R=40000 :: L=250
120 FOR REP=1 TO 3
130 X=G*2 :: Y=E*2 :: Z=C :: GOSUB 500
140 X=F*2 :: Y=D*2 :: GOSUB 500 :: X=G*2 :: Y=E*2 :: GOSUB 500
150 Z=G/2 :: GOSUB 500 :: X=A*2 :: Y=F*2 :: Z=C :: GOSUB 500 :: GOSUB 500
160 X=BF*2 :: Y=G*2 :: Z=G/2 :: GOSUB 500 :: X=A*2 :: Y=F*2 :: GOSUB 500
170 X=BF*2 :: Y=G*2 :: GOSUB 500 :: GOSUB 500 :: GOSUB 500
```

```
180 X=A%2 :: Y=F%2 :: GOSUB 500
190 NEXT REP
200 X=6%2 :: Y=E%2 :: Z=C/2 :: GOSUB 510
499 END
500 CALL SOUND(L,X,0,Y,0,Z,0):: RETURN
510 CALL SOUND(L%7,X,0,Y,0,Z,0):: RETURN
```

In the above example, "L" is the defined length of the note. Notes longer than "L" can be lengthened with successive GOSUBs or altered in a seperate SOUND statement (as in line 510). The 'voices' are defined as X,Y,Z. X is the highest voice, Y is the middle, and Z is the bass. Although it is not neccesary to keep them in that order, it does help make the editing of mistakes easier. Once a voice is defined, it will remain until you change it. This causes the illusion of sustained notes behind moving notes(lines 130,140). Once again 40000 can be used for silence (defined as R but not used in the example).

The final method (so far) is the ARRAY method. It is similar to the DATA method in that all the notes are in DATA statements. However, instead of reading each voice then playing them, the notes are read into ARRAYs then played via a FOR TO NEXT statement. Even better, each array can be a musical line. The melody can be one array, countermelody in another, and bass line in a third.

Combining this method with a negative 'duration' within the SOUND statement creates a remarkably smooth and incredibly fast musical line. When a negative duration is specified, the previous sound is stopped and the new sound is started immediately. The first question that comes to mind is how do you use negative values without getting ridiculously fast music? Easy! Just put some sort of delay between the SOUND statements. In the Bach Invention below, I've used a math function that I saw used in a program by Robert Gagle. The statement "P=2^50" causes the computer to think for a few extra milliseconds before it plays the next sound. A higher number than fifty creates a longer delay and thus a lower number creates a shorter delay. Why? It's a mystery to me but it works like a charm so I don't complain. (To get an idea of how fast the 4a can play, change Line 240 to read "FOR N=1 TO 128 :: CALL SOUND(X,A(N),V1,B(N),V2):: NEXT N", remove line 270 and run the program.)

Once you've completed your data statements you can write the data to a disk file to conserve program memory. This can allow you to create programs that execute extremely long songs without running out of memory while in the middle of programming(it happened to me. Really!)

In the program below, I've added the option of changing the volume of either voice while the program is running and without sacrificing the smoothness of execution(well... maybe a little...occasionally). Hope you enjoy the program and I hope this article has helped someone.

Jeff Gatlin

```
10 ! THIS PROGRAM USES
20 !ONE SOUND STATEMENT!!!
30 !AND TWO SIMPLE ARRAYS!!
40 !
50 ! PROGRAMMED BY
```

```
60 ! JEFF GATLIN
70 !
80 !
90 !
100 CALL CLEAR
110 PRINT TAB(5):"INVENTION NO.13"
120 PRINT
130 PRINT TAB(7):"BY BACH"
140 FOR T=1 TO 5 :: PRINT :: NEXT T
150 PRINT "PROGRAMMED BY JEFF GATLIN"
160 PRINT
170 PRINT "CONTROL VOLUME OF VOICES   USING '1'&'2' FOR LOUDER  AND  'Q'&'W'  FOR SOFTER"
180 DIM A(128):: DIM B(128)
190 FOR N=1 TO 128 :: READ A(N):: NEXT N
200 FOR N=1 TO 128 :: READ B(N):: NEXT N
210 X=-999 :: V1=10 :: V2=10 :: P=0
220 INPUT "READY! PRESS ENTER.":UU$ :: GOTO 240
230 INPUT "PLAY AGAIN? PRESS ENTER.":UU$
240 FOR N=1 TO 128 :: CALL SOUND(X,A(N),V1,B(N),V2):: P=2^58
250 CALL KEY(0,K,S):: IF K=49 THEN V1=V1-1 ELSE IF K=50 THEN V2=V2-1 ELSE IF K=81 THEN V1=V1+1 ELSE IF K=87 THEN V2=V2+1
260 IF V1<0 THEN V1=1 ELSE IF V1>30 THEN V1=29 ELSE IF V2<0 THEN V2=1 ELSE IF V2 >30 THEN V2=29
270 NEXT N
280 GOTO 230
290 DATA 40000,659,880,1047,988,659,988,1175,1047,1047,880,880,831,831,659,659
300 DATA 880,1047,1319,1047,880,1047,740,880,1047,880,740,880,622,1047,988,880
310 DATA 831,988,1175,988,831,988,587,698,831,698,587,698,494,698,659,587
320 DATA 523,659,880,659,523,659,440,523,622,523,440,523,370,523,494,440
330 DATA 415,415,988,988,831,831,659,659,40000,659,880,1047,988,659,988,1175
340 DATA 1047,880,1047,1319,1175,988,1175,1397,1319,1047,1319,1568,1397,1319,117 5,1047
350 DATA 988,1047,1175,1319,1397,1175,1661,1175,1976,1175,1047,1760,1397,1175,98 8,1175
360 DATA 831,988,1047,880,659,880,988,831,988,659,523,659,440,440,440,440
370 DATA 523,523,440,440,415,415,330,330,440,330,440,523,494,330,494,587
380 DATA 523,659,880,659,523,659,440,523,370,440,523,440,370,440,311,370
390 DATA 330,330,415,415,494,494,415,415,330,330,247,247,208,208,165,165
400 DATA 220,220,262,262,330,330,262,262,220,220,262,262,156,156,40000,40000
410 DATA 40000,494,415,330,294,494,415,294,262,262,330,330,208,208,330,330
```

The following are the names of members who need to pay their dues at the next meeting.

Charles D. Ashley
Bill Beekman
Mark Bishop
Mike Bowen
Philip Cantrell
Mildred Carr
Marylee Catalano
Dann Clark
James Clay
Thomas F. Crabtree
James Crosson
Dan Diamond
Ken Dominaic
D.A. Dougherty
Franklin M. Fest
Bill Germany
David Gore
Larry M. Hayes
Leo Hendersin
David E. Holt
Charlie D. Howard
E.B.(Ben) Hurdle
Joe Barton King
Trent A. Marion
James P. Morrisroe
Jim R. Mullens
Gerry Myers
Brett Pijan
Dean Powell
Marc F. Robinson

Larry Fick
John Flowers
Curtis Fredeck Jr.
Ron Sallabedra
John Wells

There were no new members at the January 11, 1986 meeting.

Congratulations to the following members for renewing their memberships:

Charles Clines	M11/86
Bob Wallace	M08/86
Peter Rokkas	M11/86
Ron Woolf	M11/86
John McCann	M01/87

DELETIONS:

Wayne Clovis
John Deluna
James Dieb
Albert Johnson
Arthur Murray
Norman Smith
R M (Bob) Stephens
Michael Trombley
Larry Ulmer

CHANGES:

Ron Woolf M11/86
2111 Madison
Arlington, Tx 76011
461-4930
280-3614

Richard W Beckman M11/86
5628 Fox Hunt Dr
Arlington, Tx 76017
465-1561
261-2716

(Editor's Note:)
I'd like to thank Gary Fuquay for helping me get started as your new editor. Any suggestions, comments, or columns for the newsletter? Contact Jeff Gatlin (me) at (214) 264-2925. Startext MC60053.