Tutorial: Using Machine Storage in Bally Text Area Without REM Statements.....

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My view of the Bally Text Area, -24576 to -22777 goes something like this.. The text area has a divider, %(20050), seperating the front, or basic program area and the back.. %(20050) is also the SZ counter.. Every numbered line statement as entered into the basic text area, moves the %(20050) divider backward or plus. When a numbered line statement is taken out, the %(20050) moves forward, or minus,. the number of memory spaces removed.. SZ decreases or increases accordingly.. All numbered line statements are kept in numerical order, regardless of order of entry.. %(20050) just keeps moving back and forward, keeping track of SZ.. Because of this, the front, or basic area, is not suitable for poking and peeking, unless the spaces are assigned to a line number to keep them stable.. REM statements..

The back part of the text area, that part behind %(20050) is a different story. Everything poked into memory locations there, remains put, until changed, or overrun by an increase in the front, or basic area. So, if we set up a program in the basic area and don't add any more to it, the poked information can be used.. We can poke and peek without disturbing the basic program.. All sorts of possibilities of its use comes to mind.. Note: The poked information uses memory spaces just like the basic part, but the SZ does not change.. (The poked memory can be attached to a line statement and become part of the basic program, but then you lose the versatility of being able to change the basic program without disturbing the poked information..)

To demonstrate this method, we will use it in programming <u>The Bally 3 Voice Music Composer-Player.</u> To prevent repetition, we will use the Music Input Program notes and duration as listed on page 63, Vol .. To help understand how the program works, the important variables are listed, with their function.. R..Remember where the music starts.. M..Memory storage space.. N..Note.. L..Line for notes.. T..Tempo.. B..chord-Bar of inputs.. P..Peek or Play.. We will use the term measure instead of Line Bar..

1. Enter the program into your Bally..
2. (Optional) Before running, record it.. Saves reprogramming sometimes..
3. RUN.. You should see: -nnnnn:n:A. The first number is M, the first storage space number of your music.. M will increase as you input.. It is also R, which will remain unchanged as the beginning storage space of your music.. The second number is the number of the bar-chord of 3 voices and 1 duration input.. The letter A is the first voice of the 3 voices.. As you input it will change to B, C and D, the duration input..

4. Input your first note and continue until you have completed a measure.. Enter any number greater than 256.. Enter tempo T and push GO.. Listen to the music.. If you have made no goofs and wish to continue, input Ø.. Continue for another measure, etc.. When you find that a correction needs to be made, input either -1 or -4 as needed.. Minus one will go back 1 input and minus four will go back four inputs, an entire chord-bar.. You make needed correction and proceed from that point again.. You can input 'go back' inputs from both modes.. When in the T input mode, you will be switched back to the note input mode.. Continue until you have completed all inputs for your song..

5. HALT the computer.. Have it PRINT R,M,SZ.. Make a note of them.. You don't need all of the basic program to play your music.. As we can remove SZ without disturbing the poked information, remove all line statements except 11Ø, 12Ø, 13Ø and 14Ø.. Enter these sample new line statements, or make up your own.. You must use 8Ø, as it is a GOTO..

7Ø CLEAR; B(=nn; F(=nn; NT=Ø; T=n; A=Ø; R=-nnnnn; M=-nnnnn; PRINT"Music Name
8Ø A=A+1; IF A=2 STOP

You can change the basic program in any way that you wish, just don't use more SZ than was in the original basic program.. Your music started using memory storage spaces immediately after %(20050).. More SZ will overun it..
When you LIST the program, all you will see is the program with numbered line statements.. You cannot see your music by listing, but it is there. Try this:
>FOR A=R TO M; PRINT A,%(A)," ";;TV=%(A); PRINT; NEXT A You will see machine numbers of your music. If you want to see the entire program start with
>FOR A=-24576 TO M

6. Taping the entire program.. See Dave Itach's tutorial on page 24 of Vol 3.. You must use this method as modified.. Each place where FOR N=A TO B is used, use instead FOR N=A TO M.. %(20050)=B remains the same.. IMPORTANT, After you have recorded the program on tape, DO NOT RESET until you have tested the :INPUT.. If you have made an error in the taping program, it will not input, and it is very difficult to get the recorded program back into the computer.. For this reason I recommend that the program be split in two parts, so that more information can be used.. This is what I use.. (Spaces are for clarity)

>:PRINT; TV=Ø; TV=nn; PRINT'.'; PRINT'A=-24576; B=-nnnnn; M=-nnnnn; :RETURN;
:INPUT nn (Start tape moving, push GO.. Stop tape when cursor appears)
>:PRINT; TV=Ø; TV=nn; PRINT'.'; PRINT'FOR N=A TO M; %(N)=KP; NEXT N; %(20050)=B;
:RETURN; NT=Ø; RUN'; FOR D=1 TO 750; NEXT D; FOR N=A TO M; CY=Ø; TV=%(N); NEXT N;
:RETURN (Start tape moving, push GO).. Don't Forget.. TELL COMPUTER values of A and B

The FOR D delay leaves enough space on the tape between the taping instructions and the program to make error corrections, which I am ALWAYS making..

You can poke more than one piece of music and play them one after another, or make a menu to select them individually, by using variables in the basic program. You can also put on tape, one basic program, using variables and record any number of pieces of music on tape, just the notes.. The tape would need to be started and stopped by the computer or you can use George Moses method of just letting the tape run the same amount of time it takes to play the preceeding piece before recording another. Inputing only notes and change of variables would take much less time than inputting the entire program each time.. Thats it, any comments about poking in the back yard of Bally will be appreciated.. Jim

Credits: File Search, page 4, Vol 3..
Music Input Program, page 62, 63, Vol 3..
The Music Synthesizer, page 62, Vol 1..
Program Title and Instructions w/o using Memory, page 20, Vol 3
Taping Memory, page 24, Vol 3

My wife does not like for us to mark her sheet music.. With the work sheet as below, all we need to do now to her sheets is put a small number over each chord-bar..

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
A	67	53	53	53	101	101	101	101	101	101	101	67	67	67	67	67	67	67	90	90	90
B	0	67	67	67	80	80	80	39	50	44	67	53	53	53	53	67	53	53	44	60	60
C	0	67	53	44	33	39	39	80	80	80	80	44	44	44	67	53	53	44	71	71	71
D	50	50	50	50	150	150	100	60	50	50	50	150	150	100	50	50	50	50	150	150	50

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It also makes inputing much easier. Keeping track of where you are..

I recorded two programs twice each. The first two on the tape was recorded on a portable recorder.. The second two was recorded on a professional recorder.. My Bally inputs both with loudness about 1/2 to 3/4 full on..

:INPUT 10 Sample Music (On Top Of Old Smokey)
Time to start: 00:00
Time it takes to input: 1 minute (No listing after recording instructions)

:INPUT 20 Bally 3 Voice Music Composer/Player
Time to start: 01:15
Time it takes to input: 00:35

:INPUT 30 Bally 3 Voice Music Composer/Player
Time to start: 02:03
Time it takes to input: 00:32

:INPUT 40 Sample Music(On Top Of Old Smokey)
Time to Start: 02:50
Time it takes to input: 00:49

I have not seen any mention of the use of the Text Area for machine storage in any of the back issues. I have been playing with it since I got the Hackers Guide about a year OR SO ago.. I have no need for one, but If someone put his mind to it,, this method would make a dandy computer.. It beats the heck out of putting in all those REM statements, ie: 1. 1234567890123456789O.....

Personal:: I have been retired for about 5 years. Have a lot of time to spend playing (When my wife will let me).. Have been thinking about opening up a home centered computer store.. If Bally is expanded to what they say it will be, seems to me that it would be the primary item to carry.. Any ideas on the subject?

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