

YESTERDAY'S NEWS

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30 Years Ago...

Historical Information taken
From Bill Gaskills TIMELINE

FEBRUARY 1988:

The Telco terminal emulator is released by Charles Earl.

Richard Fleetwood, of the Forest Lane Users Group in Dallas, TX, reporting in the group's March newsletter, offers the following February 28th status report on the group's GRAND RAM orders. "Yesterday I called DaTaBioTics again to get the status of our order for six Grand Rams. After talking to Bill Moseid, he transferred me to Mike Evanbar, who is responsible for keeping track of all orders and shipments. Mike and I talked at length about the Grand Rams, Innovative Programming, Galen Read and DaTaBioTics. He was quite helpful and seemed very sincere in his answers, and he held nothing back, answering some very pointed questions.

According to Mike, the Grand Rams have actually started shipping. Quantity? An even dozen - 6 the first week and 6 this past week. After 2 months of heavy testing of the boards, they finally passed all final tests and beta usage. The biggest delay has been caused by Innovative Programming, run by Galen Read. Galen was contracted to write the software for the card, after development and hardware was done by Paul Urbanus. Galen screwed up, didn't do what he promised, and broke the terms of the contract. DaTaBioTics yanked all work away from Galen, and contracted again with Paul (Urbanus) to finish the software. While all this was going on, Innovative Programming was still taking orders for the Grand Rams, upwards of \$10,000 worth according to Mike (over \$2,000 just from two local Dallas Users Groups, us and DTIHCG). I.P. gave DataBioTics a down payment of \$1,500, a partial list of customer orders and nothing else. At this moment DaTaBioTics is preparing a lawsuit against Galen to recover all the names and cash. For those who ordered and haven't received anything, contact DaTaBioTics. Mike said that DaTaBioTics will see to it that all orders will be filled, and is accepting the loss (if there is one) on this first year of production. As for shipping dates, Mike

INSIDE INFORMATION



ELEMENTS OF BASIC #4	Page 1
TI CASINO REVIEW	Page 2
GRAM KRACKER SO WHAT!!	Page 3
MINI-MEMORY NOTES	Page 4

said they are taking delivery of the first big production of 100 boards this week (March 1st thru 5th), which will take 7-10 days for stuffing and testing. Docs for Kits and complete boards are not complete yet either, but will be done shortly. Mike says that outstanding orders will be filled in 3 to 4 weeks. More news next month. =RAF ="

Bud Mills purchases the rights to the HORIZON RAMDISK from Ron Gries and David Romer.

Myarc announces that it will protect some Geneve software.

DISK MASTER and 4A/TALK are slated for porting to the Geneve 9640 computer according to DaTaBioTics spokesperson Bill Moseid.

Rave 99 MX/01 MEMORY ENHANCEMENT card is released.

The first ever MULTI USER GROUP CONFERENCE is announced by the Lima, Ohio User Group, set to occur on May 21, 1988.

Key Notes newsletter for users of EZ-Keys debuts from Asgard Software.

DaTaBioTics renames the Miniwriter word processor series to Wordwriter.

Marty Kroll Jr. releases CATALOGING LIBRARY COMPANION v1.0 on February 20, 1988.

Linear Aesthetic Systems Box 23 Cornwall, CT 06796 (203-672-6360) releases THE CUBE and QUADCUBE entertainment programs for TI-99/4A cassette tape users.

The phones are disconnected at the National 99 User Group offices in Florida.



ELEMENTS OF BASIC

By Dave Howell

COURTESY OF THE EARLY 99'ERS

PART 4

Program Mode:

```
Statement: 10 PRINT "HELLO THERE!"
Statement: 20 CALL CLEAR
Statement: 30 END
```

Immediate Mode:

```
Command: PRINT "HELLO THERE!"
Command: CALL CLEAR
```

COMMANDS and STATEMENTS

Commands are different from statements. Commands are not part of the program, and they do not have line numbers. Instead, commands instruct the computer to do specific tasks. The TI BASIC commands are:

BREAK	CONTINUE	PRINT#
BYE	DELETE	RANDOMIZE
CALL CLEAR	DIM	REM
CALL CHAR	DISPLAY	RES
CALL COLOR	EDIT	RESEQUENCE
CALL GCHAR	END	RESTORE
CALL HCHAR	LET	RUN
CALL JOYST	LIST	SAVE
CALL KEY	NEW	STOP
CALL SCREEN	NUM	TRACE
CALL SOUND	NUMBER	BREAK
CALL VCHAR	OLD	UNTRACE
CLOSE	OPEN	
CON	PRINT	

TI BASIC statements, on the other hand, are usually found in program lines. They are:

BREAK	DEF	ON GOTO
CALL CHAR	DIM	OPEN
CALL CLEAR	DISPLAY	OPTION BASE
CALL COLOR	ELSE	PRINT
CALL GCHAR	END	PRINT#
CALL HCHAR	GOSUB	RANDOMIZE
CALL JOYST	GOTO	READ
CALL KEY	IF THEN	REM
CALL SCREEN	INPUT	RESTORE
CALL SOUND	INPUT#	RETURN
CALL VCHAR	LET	STEP
CLOSE	NEXT	STOP
DATA	ON GOSUB	UNTRACE

The commands and statements above are known as "reserved words."

Many of the statements are identical to certain commands. Those statements become commands when used in the immediate mode. Compare the following:

VARIABLES

A variable can be defined as a name that can represent a value. Variables consist of a letter followed by additional letters and/or numbers. The following example program uses the variables A and B:

```
10 LET A=5.0
20 LET B=7.0
30 LET A=A+B
```

The variable A is initially assigned a value of 5.0 and B is assigned a value of 7.0. In line 30, the variable A is assigned a new value equal to the sum of variables A and B, which is 12. The previous value of 5.0 for A is erased.

The LET statement in the program above is used to assign a value to a variable. However, the LET statement need not actually be used in such programs on many computers including the TI. Both of the following statements have the same effect:

```
10 LET A=5
20 A=5
```

TI BASIC allows any group of up to 15 characters to be used as a variable name - as long as the first character is a capital letter and the name does not duplicate any of the reserved words (commands and statements listed above and the "functions" found below).

The following are examples of valid BASIC variable names in TI BASIC:

A A7 B2A AMOUNT PRICE CRAZY

The following are NOT valid variable names:

1A 3M 25PP7 LET RUN COS

Variable names can also be used to represent strings of alpha characters. These are known as string variables. To represent alpha characters, variable names must be followed by a string character (\$). For example:

D\$ D3\$ PEP\$ ADA\$ MEN\$ T777\$

10 LET POPS\$="DAVE"
20 X\$="GRAMCRACKER"

Quotes are used around the strings much the same way as with PRINT statements.

Reserved words in TI BASIC also include the following functions:

ABS	EOF	POS	SQR
ASC	EXP	RND	STR\$
ATN	INT	SEG\$	TAB
CHR\$	LEN	SGN	TAN
COS	LOG	SIN	VAL

D.H.



Since the early days of the 99/4 there have been lots of entertainment gambling games available. One of the earliest TI-manufactured modules was Milton Bradley's BlackJack and Poker. Lots of "junky Basic" gambling games written in TI Basic and Extended Basic formed early parts of the IUG's software library. In 1984 Funware sold Video Vegas, a slot machine game in module format, and Ramssoft sold and then released to the public domain an excellent Computer Craps game. None of this software resembles the total Las Vegas gambling experience you get with Notung Software's TI Casino. TI Casino's concept differs from all other single game gambling software for the 99/4A. The program simulates a visit to a fancy Las Vegas casino. A variety of gambling games are available and the player can move from one game to another, gambling with the same bankroll of money. The player can also visit the live entertainment offered by the casino, eat meals and drink complimentary drinks while playing Keno in the restaurant and interact with a variety of interesting people employed by the casino. It's a real experience!

When you enter the casino you find yourself at the cashier area. If you have banked winnings from a previous game (equivalent to "save game") you may withdraw money from your account. Although only one player can play TI Casino at a time, the casino's bank keeps on disk records of up to 5 player accounts. Each has password protection. If you are a first-time player or have no money in the bank TI Casino will let you borrow money any time you need it in

generous \$1,000 amounts. You can obtain multiple \$1,000 loans in the same session, enough to satisfy anyone's gaming addiction. The female cashier winks at you when she hands over your money.

Leaving the cashier with your money you find yourself in the TI Casino lobby. From here you can move to any of the casino entertainments. The amount of cash you have is displayed numerically and graphically as chips. You move a hand shaped sprite with the joystick to any of the gaming or entertainment areas displayed on screen. The entire game is controlled by joystick. With a few exceptions there are no keyboard keys to press while visiting TI Casino.

Available games include Acey Deucey, Baccarat, BlackJack, the Craps Table, Draw Poker, Keno, Roulette and the Slot Machines. You can move from one gambling area to another as often as you wish. If you run out of money you can go back to the cashier for another loan. Full color graphics and authentic betting odds are always featured. The Las Vegas odds usually favor the house. For example, the roulette wheel has a zero and a double zero space. If you are at all unfamiliar with a game, read the documentation! The documentation booklet is entertaining and for each game provides a well researched history as well as a description of the rules. Sometimes helpful hints are also provided. For example, there is a handy table in the Craps section that illustrates the odds of rolling any particular number with a pair of dice. Another handy table in the BlackJack section that says in effect, "if the player's hand totals --- and the dealer's upcard is _ _ then this is what the player should do." This information is nice to know because the BlackJack game shuffles a "4 deck shoe" to limit the abilities of card counters.

One of the things that makes TI Casino a bit different from any other TI gambling game is playing Keno at Jocko's Green Parrot Restaurant. (Ken Gilliland, TI Casino's author, actually has an Australian ring-neck parrot named Jocko.). You can either just play Keno or you can have dinner and drinks. A good looking waitress arrives and takes your order. After a few Keno games your food is delivered. She also brings you complimentary drinks. When you are thirsty or hungry just press W to call the waitress. When you are finished with your meal and wish to leave the restaurant and return to the lobby you had better pay for the meal and give the waitress a nice tip, or she may have some nasty words for you.

If you are tired of gambling, you can attend the stage show at Club Notung. Tickets are rather expensive, and if you don't give the maitre'd something extra for a good seat you may end up seated at a back table behind a couple of fat people who belch a lot. The currently booked entertainer is a bald stand up comedian who tells one joke after another. Many of these jokes are quite funny, and a couple relate directly to the 99/4A computer.

When you are ready to leave the TI Casino for the night you go from the lobby to the cashier area. Unpaid loans should first be paid off because if you owe money when you try to exit TI Casino the bouncer will appear. This rather large person will politely remind you of your unpaid debt and encourage you not to leave until the debt is paid to the cashier. If you still insist on leaving while owing TI Casino money, the bouncer will give you an itemized account of which and how many of your bones will be broken to pay for your debt.

If you have made a profit after paying off your loans you have three choices:

1. Just exit the TI Casino. In this case your money disappears and is unavailable for future use.

2. Deposit your money with the cashier in a numbered account with your own secret password. This is equivalent to "save game."

3. Have TI Casino write you a check on your printer for all your cash. Your printer will print a very realistic check, complete with Ken Gilliland's signature, payable from the "Bank of TI Casino, 9944 Wayward Ave, Las Vegas, NV." Each check printed has a different check number. If you owe TI Casino money and you ask for the "write a check" option, the printer will grind out a very real looking bill stating the dollar amount you owe to the casino.

An undocumented feature: You can alter the device name from PIO to DSKx and the casino will create a D/V 80 file called "CR" on drive x (DSKx.CR) which can be used later to print multiple copies of your check.

General comments

I and two of my children have each spent literally hours playing TI Casino. It really is a lot of fun and keeps your attention. The game is written for the most part in Extended Basic, so execution is somewhat slow. The entire game requires one DSSD disk, or two SSSD disks. All parts of the game boot from DSK1, and you sometimes have to wait for what seems a long time for the disk drive to load different parts of the casino into memory. If you have to change SSSD disks this adds to these booting times. The only times you need to use the keyboard are to type in account passwords or your name and the date for check printing, in each case followed by pressing ENTER. The joystick fire button does not enter these particular data. In all other cases, except calling the waitress, input is via a joystick.

TI Casino's author Ken Gilliland is a very interesting person. I sat next to him at the banquet following the November 1991 Chicago Faire and we had a chance to talk. You can get an idea of Ken's personality by reading the TI Casino documentation booklet. It is not boring. Ken

includes in the documentation booklet a reprint of a newspaper article describing his other part-time business besides computer programming. He is an artist, and has exhibited his paintings in one-man shows at Los Angeles galleries. As you might expect, it is hard to make a good living selling either 99/44 software or one's own paintings. So Ken has another full time job. Unless you know you will never guess what it is. Ken is a southern California termite inspector.

GRAM KRACKER **SO WHAT!!** RANDY'S
RUMOR RAG
by Randal Ainsworth 2/16/86

Some of you may be wondering what all the fuss is about over GRAM KRACKER. Of course you can save your modules to disk, but that's only the tip of the iceberg.

I suppose some technical talk is in order for many of you to fully appreciate what we have here.

The TI99/4A has a 16-bit address buss. If you convert 16 binary bits to the equivalent decimal number you will discover that the CPU (Central Processor Unit) which is the brain of the computer can access 65536 memory locations.

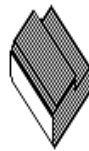
Much of this memory does not exist in the TI console but instead in the P-Box (32K) and the GROM port (8K). In fact, there is only 256 bytes of CPU addressable RAM in the console. The 16K that comes with the console is not directly accessible by the CPU, but is a memory mapped device. Most computers make use of mapping to expand the memory capabilities beyond the capability of CPU address space.

The mapped devices generally communicate with the CPU by having several common addresses. One (or several) addresses tell the mapped device what address in it's space you want to communicate with. Other common addresses are used to transport data back and forth. If a device is RAM, it can be both written to and read from. If a device is ROM it can only be read from.

The TI is sort of like an octopus with arms extended to devices in all directions. In particular is the concept of GROM which is one of the mapped devices in our machine that has had so much to do with the 99's history and uniqueness in the computer world.

GROM is sequentially accessed memory which has some unique characteristics relative to other areas of the machine. First, the GROM chip itself is proprietary and was basically TI's method of keeping control of the software. The use of GROM in modules was intended to stop piracy and to control software for the machine.

The use of GROM in the console was a memory space saver,



MINI-MEMORY NOTES

Unknown Author

Updated
9/15/84



and enabled coding a large part of the operating system and console BASIC in GPL. Graphic Programming Language (GPL) is an assembly type language. It's characteristics are somewhat different from 9900 assembly in that it's a byte oriented language (8 bits =1 byte) as opposed to 9900 code which has both byte and word (two byte) instructions. GPL seems to make widespread use of macros (canned routines which can be CALLED in any program) and supposedly is easier to program in than 9900 code.

TI never came out with a GRAM version of GROM. You see, GRAM can be reprogrammed just like RAM, and GROM and ROM cannot.

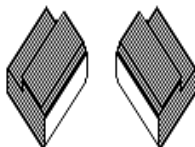
What all this means is that the 99/4A has been described as having closed architecture. Architecture refers to the way the electronic building blocks (CPU, RAM, ROM) are interconnected to form a computer. A machine with open architecture with the same addressing capability as ours would have 64K of RAM that could be addressed by the CPU. Any ROM (such as the operating system code which is the wake-up routines in the machine) would be dumped to RAM on power-up. It would be simple to change this code. It would also be simple to download any module, so TI gave us a closed machine.

The GRAM KRACKER has opened it back up!!! It is now possible to change the operating system which resides in GROM 0 because GK has a GRAM 0. As more programmers become familiar with GPL code, you'll see more changes becoming available to the TI community.

The code is already there to bypass the color bar screen, auto-start a menu option, slash the zeroes in both console and Extended Basic. Similarly, GRAMs1 & 2 of GK can be used to modify console Basic. The remaining 56K in GRAM KRACKER simulate the GROM and ROM that the modules use.

The point is that not only can the modules be copied, but they can also be altered. Already a number of changes have been offered (most by Millers Graphics), but look for a major overhaul of Extended Basic. We already have such new commands as CALL CLOCK and CALL CAT, as well as the ability to change the default screen/text colors. The number of possibilities is almost endless. You can now customize the modules to YOUR liking and to adapt to specialized situations and applications.

Hopefully you can see that the GRAM KRACKER represents a major step in the evolution of our dear orphan.



While playing around with the Minimem module, made some interesting finds with the help of some article found in The Miller Graphic News Letter.

While the MM manual states that files can be saved to an area in Memory Expansion called EXPMEM2, and it is well known that programs can be saved to the battery-backed RAM in the module, programs can also be saved to EXPMEM2, freeing the VDP RAM for other programs.

This can be handy if you are doing a lot of work in TI BASIC, but would like to have something like a disk directory program handy. Just load your directory program, do a SAVE EXPMEM2, and you can then type NEW or anything else and your program will stay tucked away in the Memory Expansion.

When you want to use it, you can go get it with, OLD EXPMEM2, and then perform a RUN (no, it cannot be MERGED with a program already in memory).

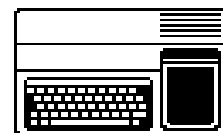
How stable is this program? Heres what I did to find this out, I entered a program into EXPMEM2, executed a BVE, removed my Minimem, inserted the Extended BASIC module and when it was running typed CALL INIT (wipes out everything in memory, right?). I then exited Extended BASIC, went back to Minimem and typed OLD EXPMEM2, and (you guessed it) the program was still there!

There is also another location called EXPMEM1, apparently located in low memory at >2000 (more tech talk), and completely undocumented in the Minimem manual! It looks as though it might be possible to have files open in the Minimem RAM, and in EXPMEMs 1 and 2 at the same time. Or, how about two different BASIC programs, one in E1 and the other in E2.

One last Minimem trick, this one by way of Miller's Graphics. You can use the "save to EXPMEM2" trick to run cassette programs that will not run because your disk system ties up VDP RAM. Here's how: First, enter the program from tape (everyone probably has a few of these that you never load anymore because you know when you type RUN you're going to get "MEMORY FULL IN XXX"). Next type "SAVE EXPMEM2". Now type CALL LOAD(-31888,63,255), which "disables" your disk drives and gives you back the memory they took (you DID remember to plug in your Minimem, didn't you?), and type NEW. Last, type OLD EXPMEM2, and like magic your unRUNable program moves into the expanded VPD and will run. Nifty, no?



Yesterdays News Information



Yesterdays News is a labor of love offered as a source of pleasure & information for users of the TI-99/4A & Myarc 9640 computers.

TI-99/4A HARDWARE

Black & Silver computer
Modified PEB
WHT SCSI card with SCSI2SD
Myarc DS00 FDC
Myarc 512K Memory Card
Horizon 1.5 meg Ramdisk
TI RS232 card
Corcomp Triple Tech Card
1 360K 5.25 floppy drive
1 360K 3.50 floppy drive
1 720K 5.25 floppy drive
1 720K 3.50 floppy drive
80K Gram Kracker
Samsung Syncmaster 710mp

TI-99/4A SOFTWARE

PagePro 99
PagePro Composer
PagePro FX
PagePro Headline Maker
PagePro Gofer
TI Artist Plus
GIFMania

PC HARDWARE

Compaq Armada 7800 Notebook
Compaq Armadastation
Samsung Syncmaster 710mp

PC SOFTWARE

Dead,Dead,Dead Windows 98se
FileCap
prn2pbns
Infanview
Adobe Distiller
Adobe Acrobat

Yesterdays News is composed entirely using a TI-99/4A computer system. It consists of 11 PagePro pages which are "printed" via RS232 to PC to be published as a PDF file.



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