KENTUCKIANA 99/4 COMPUTER SOCIETY

NEWSLETTER

JANUARY 1983

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LAST MEETING

Dur last meeting was held December 11,1982 at Carrithers Middle School. Thanks to Bob Shull for his talk covering input statements and to Dwight Lefevre for demonstrating LOGO. Joe Schoenbaechler initiated a survey to find out what the most popular software is. Joe will also be our keeper of high scores. More about that later.

NEXT MEETING

Our next meeting will be held:

Sunday-January 23, 1983 Time-3:00 PM Place: Professional TowersBlda. Room 180 (basement level) 4010 Dupont Circle Lou. Ky. 40207

DIRECTIONS:

Exit I-264(Watterson Expressway) at Breckinridge Lane and travel North to the first stoplight (Dutchmans Lane; CSC is on the corner) Turn right on Dutchmans Lane and proceed to Dupont Circle. Turn right again and go to the large red brick bldg. where Harlows used to be. SURVEY RESULTS

At our last meeting we conducted a survey to find out what our members' most popular and highest ranking cartridges are. Each cartridge was rated 1 to 5 with 5 being the highest rating. All ratings were then averaged to establish a ranking. The 27 questionaires that were returned produced the following results:

CARTR	IDGES	OWNED	ΒY	MOST	PEOPLE
(MUST	н OP UL	AR)			

- 1. Parsec
- 2. Munch Man
- 3. Extended Basic
- 4. TI Invaders
- 5. Terminal Emulator II
- 6. Aaventure
- 7. Hunt The Wumpus
- 8. Personal Record Keeping
- 9. Tombstone City
- 10. Hangman

HIGHEST RANKING BY DWNERS

- I. Extended Basic
- 2. Parsec
- 3. Addition/Subtraction
- 4. TL Invaders
- 5. Hangman
- 6. Terminal Emulator II
- 7. Personal Record Keeping
- 8. Adventure
- 9. Munch Man
- 10. The Attack

Keep in mind that these are only the TDP 10 in each catagory and will change with time. Joe Schoenbaechler has done the work for us on the project and will be keeping the survey up to date. Please cooperate with him so that the results are representative. Joe will also keep a record of high scores attained on the games if you report them to him, so come to the next meeting armed with those high scores or contact Joe at 13004 Pine Hill Court, Prospect, Ky. 40059, Tel.# 228-3966. Only the highest score attained for each game will be published. Thanks Joe, we appreciate your work.

MEMBERSHIP DUES

There are still some people who have not paid their dues but have been on the mailing list for some time. Our dues are only \$15.00 per year. Please make checks payable to Kentuckiana 99/4 Computer Society and send them to Ric Graves at 4407 Lockridge Pkwy., Lou., Ky. 40299.

DON'T FORGET

BASIC Statements

BASIC Statements General Statements	PET	Apple 2	TRS-80	Ateri	T1 98/4	Sorcerer	ZX80
END					*		
,		in a	ù		CALLCLEAH		-
CALL address		*			•	EN	
CALLUMAN				COLOR	*		
CALL JOYSTK				STICK	*		
CALLSCREEN		HCOLOR=		SETCOLOR	*		
CALLSCUND				SOUND	•		
CLOSE	10						
nata	и Э	*	*	*	*	*	
DEF FN (nams)	far	*			DEF		
DEFINT			ûr				
DEFDBL			и 				
OEFSNG SEETE			w 9				
nila melen	*	*		*	*		*
DISPLAY					*		
OFIAWTO		HPLOT		*			
DSP vær		*	•	-	9	*	
	8	72	-	-	*		
EREAR (mm)			à				
FOR TO STEP, NEXT	•	•	*	*	•	•	*
General Statements						•	
GOSUB linenum, RETURN	*	*	*	*	*	*	-
	•	*	-	-	-		
GRAPHICS				*			
HLINAT					CALLHCHAR		
IF expr THEN linenum	*	র	1 2	a	*	*	*
IF expr THEN ELSE	-	-	*		2 0	•	
IF expr GOSUB HE I UHN	*	*			e	•	
IN (port)		IN # expr	*		-	•	
INPUT "msg", var	*	*	*	*	*	•	*
产"T萨n.var	*	RECALL	18 •	4 1	*	*	*
L /ar = expr	* ,	t.	*	*		-	-
NEXTvar			-				*
ON ERROR GOT linenum		ONERR	•	TRAP	e		
ON expr GOSUB, RETURN	*	*	*	•	*	*	
ON expr GOTO linenum	*	*	*	*	*	*	
	•				*		
OUT portnum, val		PR#expr'	*				
PADDLE		PDL		\$			
PEEK	10	*	*	str.	CALL GCHAH	ŵ	*
PONT		•	¥	17			
POKEloco val	•	•	•	, (e)	Call Load	•	
PRINT "mso" or PRINT var		•	•	*	•	•	•
PRINT@	-	-	•	POSITION (c)	Display At		~
PRINT#I	*	*	*		*	*	
PRINTUSING			ŧs		e		
FIHKJ DEADwar war		*	*	*	•		
PECALL	*	*	•	*	×	-	
NEM	*	*	*	*	*	*	*
HESET (x.y)			*				
RESTORE	*	*	*	•	•	•	
SET (2 V)			*	PLOT			
SPEED = expr		*					
STOP	*	*	*	*	*	*	*
STORE		*					
JEA3 IVR	2	*	\$		*	*	
IPDATE		*			•		
VLINAT		\$P			CALL VCHAR		
VYA.EJ (x)		*					
WAIT A.B.C	*	*				*	

This Basic language reference chart may be of some use in transposing programs from one computer's Basic to another's. Stars indicate the existance of the command listed at the left for a particular computer. A small (e) in the 99/4A column indicates the existance of a command in Extended Basic.

System Commands

System	PET	Apple II	TRS-80	Atari	TI 99/4	Sorcerer	ZX80
AUTOmm.n		*	*		Number		DDEAK
BREAKmm					*		DISEN
CLEAR	CLR	*	*	*		*	-
CLEARIN			*				1040
CLOAD	LOAD	LOAD	*	*	OLD	*	LUAD
CLOAD?	VERIFY		+				CONT
CONTINUE	CONT	CONT	CONT	CONT	* _	CONT	CONT
CSAVE	SAVE	SAVE	*	*	SAVE	*	SAVE
DELETEMO		DEL	*		*		
FDITmm	cursor	CUISOF	*	cursor	CUISON		cursor
HOME		*					
HIMEN		*					
LIST mm-on	*	*	*	*	*	*	*
LOMEM		*					
MAN		*					
NEW	*	*	*	*	*	*	*
RESECTIENCE mm. nn					*		
RUNmm	*	*	*	*	*	*	*
CVSTEM	SYS	CALL - 151	*	BYE	BYE	BYE	
THORE	0.0	NOTRACE	*		UNTRACE		
TOON		TRACE	*		TRACE		
					+		
(Castas Egenal)	40 hu 24	40 by 24	64 by 16	40 by 24	32 by 24	64 by 30	32 by 24
(Character Resolution mby a)		7bv8	2 by 3	8 by 8	8 by 8	8 by 8	
(Total pixels)	128 full-screen	280 by 192	128 by 48	320 by 192	256 by 192	512 by 240	

String Functions

Svatem	PET	App ie H	TRS-80	Atarl	TI 99/4	Sorcerer	ZX80
String Functions							
ASC (string)	+	*	•	*	*	*	
CHRS (code)	+	*	*	+	*	*	*
CODE (string)							*
FRE (XS)	*		*	*		*	
INKEYS	GET	GET	*		CALLKEY		
LEFTS (string, n)	*	•	*		-	*	
LEN (string)	*	*	*	*	*	*	
MIDS (string, p.n)	*	*	*		SEGA	*	
POS (str 1, str2, n)					•		
RIGHTS (string,n)	*	*	*			*	
STRS (expr)	*	*	*	*	*	*	*
STRINGS (n.char)			•				
TLS (string)							. *
VAL (string)	*	*	*	*	*	*	
VARPTR var			*	ADR			

BASIC Math and other Functions

BASIC FUNCTIONS	PET	Apple II	TRS-80	Atari	TI 99/4	Sorcerer	
(Precision)	9	10	6 OF 16	10	14	8	
ABS (expr)	*	*	±	*	*	•	-
ATN (expr)	*	*	*	*	*	*	
CINT (expr)			*				
CDBL (expr)			*				
CLOG (expr)		*		*			
CSNG (expr)			*				
COS (expr)	*	*	*	*	*	*	
ERL(expr)			≜ ,				
ERR (expr)			*				
EXP (expr)	* .	*	*	*	*	*	
FIX (expr)			*				
FRF (expr)	*		+ (also MEM)	*		*	
INT (expr)	*	*	±	*	*	*	
LOG (expr)	a	*	*	*	*	*	
MOD (expr)		*					
POS (expr)	*	*	*			*	
RANDOMIZE	RANDOM		HANDOM				*
RND (0)	*	RND	*	*	HNU(1)	*	
RND (expr)		•	*				-
SCRN(x,y)		*					
SGN (expr)	*	*	*	•	*	•	
SIN (expr)	*	*	*	*	*	*	
SPC (expr)	*			NH 44 1			
SPC (num)		*		NULL			
SQR (expr)	*	*	*	*	*	*	
TAN (expr)	*	*	*		*	-	
TI (expr)	*					•	
USR(X)	*	+	*			*	
AND, OR, NOT	*	*	*			-	*

INTRODUCING EXTENDED BASIC

The Extended Basic command module adds many new or changed functions for the more serious programmer. Extended Basic is a different (expanded) version of TI Basic. Some programs written in TI Basic will not run in Extended Basic. No program written with the enhancement of Extended Basic will run on a 99/4 or 99/4A computer without an Extended Basic module.

"Sprites", available in Extended Basic are graphics defined by a "CALL CHAR" statement. These graphics characterics can be made to move on the display screen in a much smoother way than in TJ Basic. Up to 28 sprites may be displayed and defined. Unce sprites are set in motion by a program statement, it continues until altered by the program. Each sprite is independent of all others in definition, velocity, and direction of travel. There are, understandably, some limitations.

Editing features are also enhanced. After typing and entering the "LIST" command the program listing scrolls in the usual way. The listing can be halted or resumed by pressing a single key. Program lines may be easily duplicated. A new line number can be given to the statement and alterations made as needed. The original line from which the duplicate

was made remains unchanged, thereby making program typing less tedious. Programs may also be written more efficiently and function faster by multiple statements in a single program line. Multiple statement lines may also be entered in command mode, such as: FOR X=1 TO 20 :: PRINT X :: NEXT X

Direct screen control of input and output via "ACCEPT AT" and "DISPLAY AT" statements allow much more professional programs with less work and greater program speed. greater program speed. greater program speed.

There are over 40 new or expanded commands, statements, functions and sub-programs available in Extended Basic.

As an added bonus this module does access the resident vocabulary of the speech synthesizer.

These are but a few of the advantages of Extended Basic, but should be sufficient to spark an interest in the experienced programmer, and to give a better understanding of what Extended Basic represents to the novice. Extended Basic also allows the novice to use more sophisticated software

on tape, such as smoother and faster acting games.

Charles Coolev

FUR SALE

Model PHP 2200C 32K Memory Expansion unit. This is a freestanding unit. The Peripheral Expansion Box is not required. BRAND NEW! Retail cost \$400. will ell for \$200. If interested contact Ron Lively at 459-2311.

MAKING IT COUNT An introduction to computer science titled, "Making It Count" will be aired on Kentucky Educational Television, January 17 thru April 9, 1983. KET will televise two half-hour programs per week: Monday 6:30 PM EST Tuesday 6:30 PM EST The programs will be repeated on each following Saturday: 3:00 PM EST 3:30 PM EST If you are interested in obtaining undergraduate college credit, contact KET offices. The following modules are for sale. If interested contact Bob Shull at 937-1516

Munch Man\$20Home Financial Decisions\$15Personal Record Keeping\$20Reading Fun\$25Addition/Subtraction II\$20LOGO\$60

Hunt The Wumpus\$15Household Budget Management\$20Music Maker\$20Reading Roundup\$25Multiplication I\$20

CLASSIFIED ADDS

Any member may have classified adds published in the newsletter at a rate of about 25 words for \$1.00. This rate applies to members only and not to commercial enterprises.

LETTERS

HP Benchmarks Dear Editor:

The readers of *Popular Computing* might be interested to learn the results of a comparison based on George Stewart's benchmark program for the HP-86/87 computers ("Hewlett-Packard Computers," November 1982, page 47).

Mr. Stewart tested the precision of the SQR function: I added tests of trigonometric functions. I used several versions of BASIC for the HP-87 and Apple II. Results are shown in table 1.

The point is not to make a quality judgment between the four languages based on these simple tests; accuracy to the *n*th digit is not always required. However, the results stress the need to choose the right tool for the job. Our company's aviation software requires extremely accurate trigonometry, for example.

Computers are probably the most powerful tools ever used so it makes sense to know and use them wisely and efficiently. Ward Silver University City, MO

Dear Editor:

I ran your accuracy test on several computers and found the results quite surprising (see table 2).

It is interesting that the orphan among microcomputers, the TI-99/4A, scores perfectly on this test, and the two "business" computers, the ALSPA and NEC, perform least well. *Robert Wegener Denver, CO*

For those who missed the article, here's the benchmark program. It squares each number from 1 to 1000 and compares the square roots of the squares with the original numbers.

10 K-0

- 20 FOR I-1 TO 1000
- 25 REM—R SHOULO EQUAL O EVERY TIME 30 R=SOR(I+I)-I
- 40 PRINT "FOR": 1; "THE ERROR IS"; R 45 REM-K ACCUMULATES THE ERROR IF ANY
- 50 K K + ABS(R)
- 60 NEXT I
- 60 NEXT I 70 PRINT "CUMULATIVE ERROR IS"; K 80 ENO

What's In a Name? Dear Editor:

Let me congratulate George Stewart on his excellent review of TK!Solver (October 1982, page 53). We at Miller Communications (public relations adviser to Software Arts, creator of TK!Solver) were delighted that you wrote such a complete and accurate description of the product.

I do, however, have one correction. The exact name of the program is TK!Solver and the exclamation point in the middle is extremely important. First, it is part of the trademarked name, and second, it represents a key element of the program itself-the exclamation point is the key users press to "solve" problems when using TK!solver. William Gurley

Miller Communications Boston, MA

Popular Computing routinely "normalizes" tradenames that use eccentric spelling or punctuation. We discuss so many different products in each issue that observing each manufacturer's stylistic preferences would make our text look like a foreign language.

Table 1 Results of Silver's program to test the accuracy of BASIC functions.

FUNCTION TESTED

ы

CUMULATIVE ERROR

(Apple II)	Applesoft BASIC (Apple CP/M)	MBASIC 5.0 (HP-87 CP/M)	CBASIC 2.0 (HP-87)	HP BASIC
SQR([*]) = 1 For L = 1 to 1000	2 91E-04	8 11E-02	4.25E- 0 9	0 (no error)
$SIN(I)^2 + COS(I)^2 - 1$	5.50E-07	1.43E-04	2 16E-10	2 28E-10
ATN(TAN(I)) - I	5.93E-08	4.37E-05	4 41E-06	1.42E-10
For $l = .001 \cdot \pi / 2$ to $.999 \cdot \pi / 2$ in steps of $.001 \cdot \pi / 2$				

Table 2: Results of the original benchmark program on various computers.

COMPUTER	LANGUAGE	NUMBER OF ERRORS	CUMULATIVE ERROR
ALSPA ACI-2	BASIC-80	· 822	0.0811372
Apple II	Applesoft	954	0.0002908
NEC PC-8001A	BASIC-80(?)	848	0.0982087
TI-99/4A	TI Extended BASIC	0	0 (no error)

February 1983 Popular Computing

The Technical Side of Modems Dear Editor:

Although a highly technical explanation of the telecommunication network might not be necessary for the majority of your readers, I feel that some statements are misleading in Stan Miastkowski's article "Modems: Hooking Your Computer to the World," (November 1982, page 88).

First, not all of the nationwide telephone network is maintained by the Bell System. Many independent telephone companies serve large areas of the nation.

Second, the network is not just a telephone network nor is it analog only. Data of all types constitutes a reasonable percentage of total traffic nowadays, and a considerable portion of the network (especially the long-distance or toll portion) is digital. Even though almost all telephones are connected via a pair of wires to a central office and carry only analog signals between the central office and the phone, numerous digital central offices exist now and more are being installed each day.

Third, the terms bits per second (bps) and baud are not interchangeable.

I hope this helps clarify the subject. Your magazine is excellent; keep up the good work.

Richard G. Nichols Vienna, VA

The word band (derived from the name of a French telegraph officer, J.M.E. Baudot) measures the number of times the state of a communications line changes in a second. In most low-cost modems, baud is effectively the same as bit rate. But in more expensive, highspeed modems, baud does not correspond to bit rate. For example, 400 baud may produce a bit rate of 1200 bps. The word band is gradually being replaced by the more accurate term bits per second.

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