

The Atlanta Computer Society

PRESENTS

CoNets

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EDITOR'S ECHO
By Russ Keller

This is December 1994 and the letter is late this month. The President's article was not in so the newsletter was not completed till I got back from a couple of goof-off weeks.

This month there is an article from Al Dages, a construction article from Terry Dodson and an article from Carl England. part IV on Modular Programing.

I have been looking into the Apple Macintosh Power PC. and since Microware came out with OS-9 for it, I'll get it. It is a pie in the sky dream at the moment but it'll happen eventually. I want to go back to Conneticut and start a business building equipment from scratch (to order). There are IBM PC programs to design, layout, print out P.C. boards and print them out using a laser printer. The printing is directly on the board, Thus eliminating a silk screen and problems with silk sceens. The program will drill the boards also. A NC machine would be needed. Kepro Mfg. in St. Louis has the machinery to etch and put slugs in the boards for plated-thru double-sided boards.

I'm going to Conneticut next Summer to talk to some people I know about it. They are programmers and metal workers. The state of Ga. is anti-business. If you want to start a bar or restaurant, the enviroment is good. One can close down within 24 hours. Of course, one could have an office in Ga. just to cordinate things and have the production elsewhere.

There are only corporate offices moving to Ga. They employ only paper pushers. Since there is a shift in Washington, the business climate could be more favorable in the future. All would just be in the talking stages till the '96 elections. After that, a positive or negative decision will be made.

There are problems with having the boards done out of house with

no control of quality. One is captive of an outside supplier and is subject to production delays at his whims. A revision is instant when you control everything. The use of modems would eliminate most problems.

In production, one would have delivered X amount of raw material in the morning and ship X amount of material out that night, thus eliminating stock. If one were to build to order, production, as such, would be invalid.

I have had insights as to government contracts to shun them with distain. The government would rope you in and change the design in the middle of production.

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The Pentium CPU

By Alan Dages

The following is an extract of a message found on the FIDO ECHO.

For those out of the loop, errors have been identified in the FDIV (floating point divide) command of Intel's Pentium chip. Apparently Intel has known about this for some time and chose to keep it quiet while they designed new chips. Intel has not announced any plans to replace the bad chips already distributed, and has instead released a press release saying that the problem shouldn't bother most people.

Q&A: THE PENTIUM FDIV BUG

Q: How many Pentium designers does it take to screw in a light bulb?

A: 1.99904274017, but that's close enough for non-technical people.

Q: What do you get when you cross a Pentium PC with a research grant?

A: A mad scientist.

Q: What's another name for the "Intel Inside" sticker they put on Pentiums?

A: Warning label.

Q: What do you call a series of FDIV instructions on a Pentium?

A: Successive approximations.

Q: Complete the following word analogy:

Add is to Subtract as Multiply is to

- 1) Divide
- 2) ROUND
- 3) RANDOM
- 4) On a Pentium, all of the above

A: Number 4.

Q: What algorithm did Intel use in the Pentium's floating point divider?

A: "Life is like a box of chocolates." (Source: F. Gump of Intel)

Q: Why didn't Intel call the Pentium the 586?

A: Because they added 486 and 100 on the first Pentium and got 585.999983605.

Q: According to Intel, the Pentium conforms to the IEEE standards 754 and 854 for floating point arithmetic. If you fly in aircraft designed using a Pentium, what is the correct pronunciation of "IEEE"?

A: Aaaaaaaiiiiiiiiiieeeeeeeeeee!

TOP TEN NEW INTEL SLOGANS FOR THE PENTIUM

-
- 9.9999973251 It's a FLAW, Dammit, not a Bug
 - 8.9999163362 It's Close Enough, We Say So
 - 7.9999414610 Nearly 300 Correct Opcodes
 - 6.9999831538 You Don't Need to Know What's Inside
 - 5.9999835137 Redefining the PC--and Mathematics As Well
 - 4.9999999021 We Fixed It, Really
 - 3.9998245917 Division Considered Harmful
 - 2.9991523619 Why Do You Think They Call It *Floating* Point?
 - 1.9999103517 We're Looking for a Few Good Flaws
 - 0.9999999998 The Errata Inside

THE TOP TEN REASONS TO BUY A PENTIUM MACHINE

- =====
- 10. YOUR CURRENT COMPUTER IS TOO ACCURATE
 - 9. YOU WANT TO GET INTO THE GUINNESS BOOK AS "OWNER OF MOST EXPENSIVE PAPERWEIGHT"
 - 8. MATH ERRORS ADD ZEST TO LIFE
 - 7. YOU NEED AN ALIBI FOR THE I.R.S.
 - 6. YOU WANT TO SEE WHAT ALL THE FUSS IS ABOUT
 - 5. YOU'VE ALWAYS WONDERED WHAT IT WOULD BE LIKE TO BE A PLAINTIFF
 - 4. THE "INTEL INSIDE" LOGO MATCHES YOUR DECOR PERFECTLY
 - 3. YOU NO LONGER HAVE TO WORRY ABOUT CPU OVERHEATING
 - 2. YOU GOT A GREAT DEAL FROM JPL

And now for the #1 reason to buy a Pentium machine:

- 1. IT'LL PROBABLY WORK

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CONSTRUCTION ARTICLE
By Terry Dodson

Friends , CoCoists , and fellow CoCo-Nuts !! Lend me your ears.

Well , so much for greerings.

Your friendly club librarian here with a little something to help your CoCo keep it's cool, and "CHEAP" too.

(#1)- Take a disk box (5 1/4"). Preferrably one that has two (2) halves. one "inner half"like picture #3, and one "outer half" like picture #1. I prefer 3-M 5 1/4" DSDD disk boxes because they are sturdy and the perfect size.

(#2)- Remove all disks. - Remove inner insert and invert it to slide it into the outer half , identical to the outer half's shape , see picture #1 and #3.

(#3)- Take any 3 1/2" (or smaller) muffin fan and bolt , or glue , or use two-sided sticky foam , or whatever method you prefer to attach the fan to the side of the box as shown in picture #3. I used bolts for my fan-mod assembly and a 110-v WAFER 3 1/2" fan w/5 blades.

(#4)- Before proceeding to bolt or glue your fan to it's box , be sure to trace the outline of the fan's support structure onto the box with a pen or marker in order to cut this tracing out so as to allow for the fan to push it's air into the box. While doing this step , be sure to cut away as little material as possible in order to keep the box rigid enough for long use.

(#5)- I wired my fans straight to a plug and wire then to my power strip. You can add a simple (110-v./ or less volts) switch to the box side for ease of use also.

Which ever way you decide to use your fan , I'm sure you'll see it's usefull-ness in cooling down your CoCo ,or Multi-Pak ,or Disk Drives ,or possibly in cooling your Hard/Drive or Printer.

ENJOY.

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Modular Programming - Part IV

User Interface - Part II

Last Month's module was a user interface. Because of the size of the module, I did not include any documentation or a program to test the module. That I saved for this month.

The user interface module named DIR reads a disk directory and displays up to 32 files on the text screen. If more than 32 files are contained in the directory, then the additional files can be displayed by pressing the shifted down arrow (up to 4 pages--that's 128 files!). To return to the previous page, press shift up arrow.

The currently selected file is marked with a pointer. To exit the user interface, press either SPACE or ENTER. The key that you pressed to exit is passed to the calling program in the register A. The pointer to the selected file is passed by register X. The file data contains the following information:

Bytes	0-7	File Name
Bytes	8-10	Extension
Byte	11	File Type:
		0 = BASIC Program
		1 = DATA
		2 = Machine Language
		3 = Source Code

Byte	12	ASCII Flag
		0 = Binary
		255 = ASCII
Byte	13	First Granule in File
Bytes	14-15	Length of Last Sector in File

This information is passed to your main program for various reasons. You can only RUN File Type 0 programs, and you can only EXECute File Type 2 programs. ASCII files are used by most word processors. Some of the things that you may want to do with your selected file are LOAD and RUN, LOADM and EXEC, COPY, KILL, RENAME. This module has two exit conditions (ENTER and SPACE). You may want each condition to treat the file differently--I leave that up to you.

The other keys used by this module are BREAK and the numbers 0 thru 3. Pressing BREAK restarts the module allowing you to change diskettes without exiting the module. The number keys switch drives and restarts the module.

Following is a program to test the DIR module. To use it, you must also have modules CLH, PRINT and DISKIO.

A word of warning--Make sure you have a backup of your modules before you assemble. Due to a bug in Disk EDTASM, sometimes the INCLUDE statement can cause files to be garbled. Many times this can be remedied by changing the order of the program (This program works, but if I had placed the INCLUDE statements at the end of the program, it would cause a disk crash). When the INCLUDE statement causes problems, it usually manifests as a BAD LINE NUMBER in your source code or a ?FS ERROR when attempting to load the assembled program.

```

00100 ***** TEST *****
00110          ORG      $2600
00112          INCLUDE CLH
00114          INCLUDE PRINT
00116          INCLUDE DISKIO
00118          INCLUDE DIR
00120 START   JSR      DIR
00130          PSHS    A
00140          JSR      CLH
00150          LDU     #YP
00160          CLRA
00170          JSR      PRINT
00180          PULS    A
00190          CMPA   #32
00200          BNE    S1
00210          LDU     #SPACE
00220          BRA    S2
00230 S1      LDU     #ENTER
00240 S2      CLRA
00250          JSR      PRINT
00260          LDU     #FN

```

00270		JSR	PRINT
00280		LDB	#8
00290	S3	LDA	,X+
00300		JSR	[\$A002]
00310		DECB	
00320		BNE	S3
00330		LDA	#\$2E
00340		JSR	[\$A002]
00350		LDB	#3
00360	S4	LDA	,X+
00370		JSR	[\$A002]
00380		DECB	
00390		BNE	S4
00400		LDU	#FT
00410		CLRA	
00420		JSR	PRINT
00430		LDA	,X+
00440		BNE	S5
00450		LDU	#BASIC
00460		BRA	S8
00470	S5	DECA	
00480		BNE	S6
00490		LDU	#DATA
00500		BRA	S8
00510	S6	DECA	
00520		BNE	S7
00530		LDU	#ML
00540		BRA	S8
00550	S7	LDU	#SOURCE
00560	S8	CLRA	
00570		JSR	PRINT
00580		LDA	,X+
00590		BNE	S9
00600		LDU	#BIN
00610		BRA	S10
00620	S9	LDU	#ASCII
00630	S10	CLRA	
00640		JSR	PRINT
00650		LDU	#FIRST
00660		JSR	PRINT
00670		LDB	,X+
00680		CLRA	
00690		BSR	NUMBER
00700		LDU	#LAST
00710		CLRA	
00720		JSR	PRINT
00730		LDD	,X
00740		BSR	NUMBER
00750		LDU	#BYTES
00760		CLRA	
00770		JSR	PRINT
00780	LOOP	JSR	[\$A000]
00790		CMPA	#3

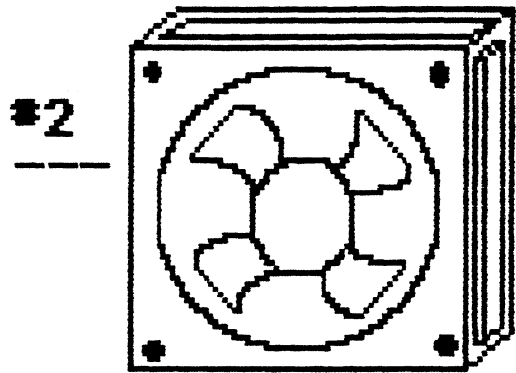
00800		BNE	LOOP
00810		LBRA	START
00820	NUMBER	CLR	COUNT
00830	N1	INC	COUNT
00840		SUBD	#10000
00850		BCC	N1
00860		BSR	NUMOUT
00870		ADDD	#10000
00880	N2	INC	COUNT
00890		SUBD	#1000
00900		BCC	N2
00910		BSR	NUMOUT
00920		ADDD	#1000
00930	N3	INC	COUNT
00940		SUBD	#100
00950		BCC	N3
00960		BSR	NUMOUT
00970		ADDD	#100
00980	N4	INC	COUNT
00990		SUBD	#10
01000		BCC	N4
01010		BSR	NUMOUT
01020		ADDD	#10
01030	N5	INC	COUNT
01040		SUBD	#1
01050		BCC	N5
01060	NUMOUT	PSHS	D
01070		LDA	COUNT
01080		ADDA	#47
01090		JSR	[\$A002]
01100		CLR	COUNT
01110		PULS	D, PC
01120	COUNT	RMB	1
01130	SDRIVE	FCB	0
01140	DDRIVE	FCB	0
01150	YP	FCC	/YOU PRESSED THE /
01160		FCB	0
01170	SPACE	FCC	/SPACEBAR/
01180		FCB	0
01190	ENTER	FCC	/ENTER KEY/
01200		FCB	0
01210	FN	FDB	\$D0D
01220		FCC	/FILE NAME: /
01230		FCB	0
01240	FT	FDB	\$D0D
01250		FCC	/FILE TYPE: /
01260		FCB	0
01270	BASIC	FCC	/BASIC PROGRAM/
01280		FCB	0
01290	DATA	FCC	/DATA/
01300		FCB	0
01310	ML	FCC	/MACHINE LANGUAGE/
01320		FCB	0

01330	SOURCE	FCC	/SOURCE CODE/
01340		FCB	0
01350	ASCII	FCB	13
01355		FCC	/ASCII/
01360		FCB	0
01370	BIN	FCB	13
01375		FCC	/BINARY/
01380		FCB	0
01390	FIRST	FCB	13
01400		FCC	/FIRST GRANULE = /
01410		FCB	0
01420	LAST	FCB	13
01430		FCC	/LAST SECTOR CONTAINS /
01440		FCB	0
01450	BYTES	FCC	/ BYTES/
01460		FDB	\$D0D
01470		FCC	/PRESS BREAK TO CONTINUE/
01480		FCB	0
01530		END	START

This program tests all the functions of the DIR module.

Next month's module sets your system defaults--everything from printer BAUD rate to double-sided floppy drives.

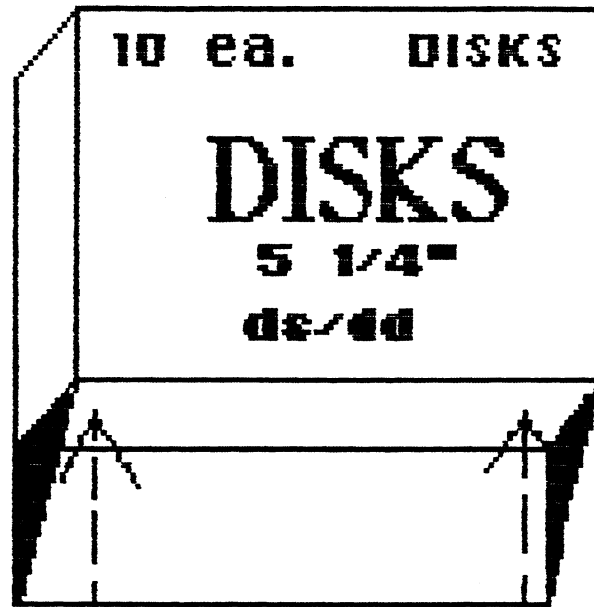
'till next month
 Carl England



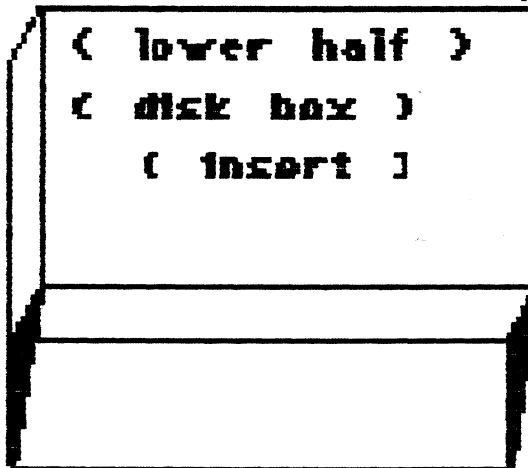
#2

3 1/2"

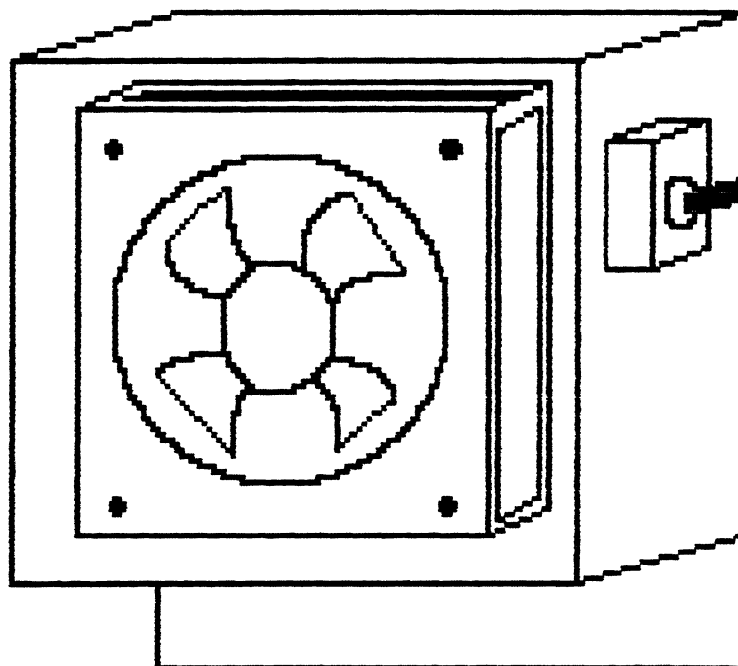
10V. muffin fan



1



3



3

Fan installed onto
disk boxes with
shaded areas of boxes
cut off.