North Texas PC NEWS

August, 1984

Vol 3 North Texas IBM Personal Computer Users Group No. 8

Special Interest Programs

Programmers

Rumors of IBM's next PC continue to be one topic of discussion in the monthly round table exchange. At the last meeting we discussed hard disks and the power supply for the original 64k motherboard PC. Compaq's power supply problems and the fact that Compaq has not published a technical reference manual were also mentioned. Members received a short report on the Lotus A-B-C user supported package which offers a topical index to all articles published in various PC magazines. Neil gave a short talk on keyboard scan codes and on decimal arithmetic. There was considerable discussion of the Macro Assembler, its current problems and whether the new Microsoft version is an improvement. One member offered the following tip: When assembling a new routine to check for syntax errors, direct the object to the null device to avoid having to run CHKDSK to recover lost disk space after the assembler detects one or more errors. The command line would be: "MASM file-name,NUL:"/

The August meeting will be in our standard, open topic, format. There should be even more discussion of IBM's next PC, which is supposedly due sometime between now and this Fall, and all the other wild and wonderful rumors.

Carrington Dixon

Business Applications

New time for the Business Applications meeting is from noon until 1:30. This gives us a much needed additional half-hour to conduct our business. During the first half hour we will have an open-forum, with questions and answers about your business needs (both software and hardware), topics for future group presentations, and any other business/computer subjects anyone cares to bring up.

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ACM SIGGRAPH and IBM's 3270-PC

by Tom Prickett

The Association for Computing Machinery held its graphics special interest group - SIGGRAPH conference in Minneapolis on July 23 thru 27. I had the privilege of attending the first part, and would like to report some impressions as well as some significant ramblings in the IBM-PC graphics arena.

This was the largest SIGGRAPH ever, and there have been 11 of the annual events. On Wednesday, the third day of the conference, they set a new reord of 18K people. I don't know what the final tally was, not bad for a specialty conference. The exhibits were bewildering, but the highlight for me was an awesome display of graphics in a two night "Electronic Theatre" that totalled approximately five hours. There was a potpourri of images and sounds. Many of the computer world's computer graphics gurus were represented in over 55 separate pieces from nine countries. There were lots of entries from Japan and France, but most were U.S. Dallas was even represented by a firm called Acme Graphics.

The films ranged from the very political "Wag the Flag" to the very finest in computer art, television commercials, children's entertainment, educational, instructional, silly, funny, trite, and sometimes boring and repetitious. The most innovative thing I saw was intended for a college level course in Physics produced by the California Institute of Technology. As the physics concepts were explained verbally, you also got to see it happen on the screen. There was a live dance

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Agenda

Not determined at press time.

Next Meeting August 11, 1984

Jesuit College Preparatory School
12345 Inwood Road, Dallas, Texas

(Schedule on page 4 - Map on page 8)

North Texas PC NEWS

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Deadlines:
All material for publication in PC NEWS (articles and ads) must be received by the NEWS staff no later than the fourth Friday of the month prior to publication.

Articles:
Column width is 56 characters. Article submission is preferred by modem or disk (ASCII format). Double-spaced, typewritten written copy is acceptable.

North Texas IBM Personal Computer Users Group

A non-profit, independent group, not associated with IBM Corporation. The Group meets on the second Saturday of each month. See page 1 for meeting time and place.

Officials:

President	Chris Morgan (acting)	
President Elect	Chris Morgan	(214)739-5895
Program Chairman	Charles Kroboth	(214)739-5895
Treasurer	Bill Hood	(214)739-5895
Secretary	Charles Kroboth	(214)739-5895

Special Interest Groups:

Beginners & BASIC	Mike Durbin	(214)271-8779
Business Applic.	Sharlene Talbott	(214)386-5596
	& Ricky Burke	(214)276-5003
Disk of the Month	Doug Windham	(214)271-5727
Programmers	Neil Bennett	(214)238-7650
Comp. Aided Instr.	Dean Powell	(214)995-5061
Beginning Assembly	Charles Schultz	(817)566-3919

Telephone (during business hours) (214)361-0304
Bulletin Board SYSOP: Mark Collard (214)223-0983
(24 hrs, download & upload, messages, 300/1200)

Dues: Regular Membership - $24.00 year
Student membership - $12.00 year
Payable in January. Dues are prorated for balance of year when applicant joins after January. Mail dues to: Treasurer, NT IBM PC UG, 10400 N. Central Expwy #210, Dallas, TX 75231

PC NEWS Financial Report

24 July 1984

January through June 1984 Issues
(June Printing 460 copies)

INCOME:	
Balance from Dec 1983	$ 167.23
Adv, Labels, Misc	1114.70
Cash from Treasury	1300.00
Total Income	$2581.93
EXPENSES:	
Office Supplies	$ 33.79
Misc Copies	19.68
Print, Dist & Mail	2200.40
Art Supplies	2.77
Telephone Calls	42.69
Total Expenses	$2299.33
Balance 15 June 1984:	$ 282.60
	$2581.93

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Our main presentation, starting at 12:30, will feature John Laningan, president of Cardinal Computers, who will discuss the concepts and applications of using bar codes to improve business operations. He will discuss new and unique ways to locate, process and manipulate data using bar codes, readers and software.

Cardinal Computers develops innovative solutions for a variety of business needs using the IBM PC, XT and compatibles.

Ricky Burke

Beginning Assembly Language

During our last meeting a lively discussion developed concerning levels of the operating system available to the assembly language programmer along with the compatibility issue. Most of the SIG members took part in Jeanne Pitz's class after the general session.

Those of you attending the Assembly Language session should study the handouts provided by Jeanne. If you have any questions, bring them to the SIG where we're sure to find someone with the answers. Material in Lafore's book also should provide useful discussion during the meeting.

The format of our next SIG meeting will continue in open-ended free-for-all questions and answers.

Charles Shultz

APL Classes

The SouthWest APL Users' Group meets on the first Tuesday of each month at the Park Cities Inn, 6101 Hillcrest (across from SMU) at 7:30 PM. Recent presentations have included the demonstration of an array processor using APL as the operating system as well as the main language, a report on the 1984 international APL conference at Helsinki, Finland, and general discussions on APL education. Visitors are most welcome. To be sure of the meeting date, call:

Stuart Yarus 867-8012(H) 320-7263(W) or
Don Hatfield 271-7380(H) 320-7248(W).

APL (a Programming Language) is a fourth-generation language useful for modeling, data-base search and on-line and batch production. APL was used to create an on-line reservations system for a major airline and to write the text on this page. Originally developed to design computers in the early 1960's, APL is now found in all segments of business - from research at oil companies to enhancing clerical productivity at insurance companies.

APL is available on:

- IBM computers from 3081's to PC's
- IBM compatibles (Compaq, Corona, Columbia)
- Time-sharing systems
- Cray's
- Digital Equipment Corporation (DEC's)
- Data General's
- PRIME's
- Apple II's
- TRS-80's
- Commodore Super Pet's
- At least 20 MC 68000-based machines (Sage, Wicat, Fortune, Ampere, Corvus, Cromemco, Sord, Apollo...)

APL vendors include:

- IBM
- STSC
- I P Sharp Associates
- Digital Equipment Corporation
- TSR
- Data General
- Analogic
- Interprocess Systems
- The University of Waterloo
- The Computer Company

APL for the PC (and compatibles) is available from

- IBM
- STSC
- I P Sharp Associates
- The University of Waterloo

PC LETTERS

Route 2, Box 162
Detroit, Texas 75436
July 4,1984

Dear Sirs:

Our remote rural area (150 miles ne of Dallas) does not offer any contact with PC users....if there are any. Since your group seems to be the nearest, we thought we would contact you to discover if your club programs are available for sale to outsiders like ourselves. If so, could you provide us a program listing and the costs involved in the enclosed SASE?

In addition, we have three porgrams which were a part of our purchase of the Columbia 1600-4 (PC_XT clone) which we would like to sell. The following programs and documentation have not been used and are available on a "best offer" basis:

1. PERFECT LINK, MPC Asynchronous Communications Program. This is a program for a telephone modem which we are not able to use since our rural area does not have private telephone line service, nor is it available in the forseeable future. Our phone company advises that we may not use a modem on our party line. Therefore, this program is useless to us.

2. THE HOME ACCOUNTANT PLUS. A home budgeting, checkbook program. This is a very simplified program which anyone can use...except that I am a retired accountant and find our farm accounting better serviced via my spreadsheet design.

3. CP/M-86...An operating system user's guide, programmer's guide, and system guide. I don't know anything about this program except that it is another operating system and, as a computer novice, I an having more than enough trouble just learning the MS-DOS system all by myself.

If you are able to assist me or offer advice on the above matters, I shall appreciate it greatly.

Sincerely,
Dorothy Wright (Mrs.)

(Information has been passed along to Mrs. Wright about our disk program. If you are interested in the software she has for sale, contact her directly. Ed.)

Eastfield College offers a 3-hour APL course for credit this Fall. The time is 6:55 to 8:10 PM Mondays and Wednesdays, with individually scheduled labs on IBM-PC's. Registration begins August 21. For more information, call 324-7198.

Stuart Yarus

Room Assignments

Morning:

Room #	9:00 - 9:55	9:00 - 10:25	10:00 - 11:30	10:30 - 11:55
105	Beginners - IBM	-	-	open
106	Beginning Assem - IBM	-	-	Mac - Lisa
107	BASIC - IBM	-	-	Stock Investment - Apple/IBM
108	C. A. I. - IBM/Apple	-	-	Advanced Topics - Apple
109	-	Beginners - Apple	-	Business - Apple
111	-	Beginning BASIC - Apple	-	6502 Machine Lang. - Apple
113	-	CP/M - Apple/IBM	-	Genealogy - Apple
114	-	Advanced Applesoft - Apple	-	Games - Apple/IBM
116	-	Pascal - Apple/IBM	-	open
Auditorium	open	open	IBM MAIN MEETING	-

Afternoon:

Room #	12:00 - 1:25	1:00 - 1:25	1:30 - 2:30	1:30 - 3:30
105	Business - IBM	-	-	-
106	Advanced Programming - IBM	-	-	Assembly Language Instruction (Members Only) - IBM
107	Communications - Apple/IBM	-	-	-
108	Engineering/Scientific - IBM/Apple	-	-	-
109	Apple III - Apple	-	-	-
111	Printer/Hardware - Apple	-	-	-
113	Graphics - Apple	-	-	-
114	Spreadsheets - Apple/IBM	-	-	-
116	Education - Apple	-	-	-
Auditorium	open	First Time Apple Corps	APPLE MAIN MEETING	-

Adventures Inside the PC

by John Pribyl

BLANK SCREEN... Chapter 2 (Conclusion, I Hope!)

Some months ago I wrote about a problem I was having with my "ancient vintage" PC (circa early 1982). The problem was intermittent. During power-up checkout nothing would run except the fan. No cursor, no message no anything... just hummmm. At that time reseating the cards in the mother board corrected the problem. For a while! The problem began recurring several months later, with increasing frequency.

Finally I could stand it no longer. I "unbundled" the computer, loaded it into the Horizon, and drove to see my friendly Computerland technician. After an hour of continuous diagnostic tests, you guessed it... we couldn't get the problem to recur.

With mounting frustration, I remembered the old cure-all, "If all else fails, give it a good kick!" Well, I didn't really kick it, but I did turn it off and gave it a good rap on the side, then powered-up again. Believe it or not, there it was... blank, and hummmmin like that was the main goal of its existence. At least that was a step in the right direction... we got the problem to occur.

Since the computer now had a problem the technician could see, he began swapping out cards. Changing out the mono board didn't make the problem go away. Next logical conclusion? Bad motherboard. Bad news, big bucks!

Unfortunately, (or fortunately, as it turned out) there was no motherboard available to swap. So with a promise to call when he got a 64K board, he reassembled my PC, intermittent and all, and I brought it (and my frustrations) back to Arlington.

Next logical conclusion.. ? If the motherboard is bad and has to be replaced anyway... hmmm..

Might as well take a look at it! I'm not a technician, but I can generally tell by looking and smelling if there is a burned something or other - if that's the problem. Wasn't much of a job to remove the suspect board, after first removing all the plug-ins and connectors.

Except for a two and a half year accumulation of dust, the board appeared perfect. However, after close scrutiny using magnifiers and a bright light, I finally found a small "splash" of solder adjacent to the pins of one of the flatpacks. It was loose and lifted right out with tweezers. This had to be a leftover from day one, the computer hadn't been in the repair shop before. I was overjoyed at finding the little bugger... not because I was glad it was there, but because now I probably would not have to spend $250 for a new motherboard.

I was right! Not a single failure in the past two months. I'm keeping my fingers crossed, but I'm sure that was the cause of the trouble.

John

► from page one

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performance where the dancer's body and a hula hoop prop were digitized, processed, and simultaneously dispalyed on a projection system. Now that's real time. My point here is that computer graphics is being used in virtually every area of the visual arts. It has truly come of age.

Where does the PC fit into the graphics arena? It is carving out a very useful place for itself, playing the role of a workstation that can be both stand alone as well as attached to a host. Most of the animated films use mainframes, since PC's simply do not have the computing horsepower to draw enough images for animation. For example, a five minute film at 25 frames per second results in 7,500 pictures. Actually, most mainframes do not have the computing horsepower to draw complicated images at 25 frames per second. A simple way around this problem is to not to work in real time. In other words, let the computer take as long as it wants to produce the images, you just capture the final result is such a way that you can play it back at 25 frames per second. In 1975, I was involved in producing an animated film from a mainframe IBM 370 that was attached to a Tektronix graphics terminal at 300 BAUD. We would simply set a movie camera in front of the screen and waited for the image to be drawn, shoot a frame and wait, shoot a frame and wait, ... It would take us an entire evening to produce a few seconds of film. Hey, you worked with whatever you had in 1975.

When you are using a mainframe with a dumb terminal, you no longer have a processor dedicated to your every whim, you share the processing power among many. PC's used as intelligent workstations allow you to do your interactive tasks local to your dedicated PC. You only badger the host with high overhead requests. Let's say you are producing a slide. You can use your PC to lay out the slide, and get everything positioned just like you want it on your medium or low resolution interactive PC. When you are ready for a high quality/resolution final, you send that and only that off to the host. This pays off for the user in that a dedicated processor is available for the interactive tasks, exactly where it is needed; a high-power host is available for the heavy work, exactly where it is needed. This pays off economically too. You typically pay for host resources by the second. You pay for PC resources by the plug. One time costs are very different from reoccuring costs.

IBM did not have a booth, but their presence was certainly felt by their subtle introduction of their "graphics workstations", the 3270-PC/G (graphics) and 3270-PC/GX (extended graphics) at selected software vendor's booths. IBM has apparently decided that PC graphics is now a big enough market to be worth their time to compete. They have introduced a serious graphics PC machine for those attached to their mainframes, and this can lead us to speculate about how they intend to replace the horrible color graphics board that is being used for stand alone PC graphics.

The 3270-PC has been around for some time. This allows a PC to look like (emulate) their 3270 terminals. IBM makes a graphics terminal too, called a 3279, and the 3270-PC/G and PC/GX allow you to run host software that was intended for this terminal. What else can it do? It is also a PC capable of running the software produced for the IBM-PC. It also adds some window management software that allows you to run several separate host sessions in addition to one MS-DOS application. I understand that most of the graphics software that runs on the PC today will run on these machines too. Don't ask me how they do this.

There are new interactive devices too. There is a mouse and a data tablet. They had an IBM mouse on display. It had an IBM label on the top and a Summagraphics label on the bottom. The picture of the tablet looked suspiciously like Summagraphics tablet. There are hardcopy devices too. There is a family of pen plotters that come in two, six, and eight pen models. Most are desktop, but the eight pen has a floor model too. There are color printers, a ribbon and an ink jet printer. The keyboard has 122 keys as opposed to the 83 on the IBM-PC. Most of this is an additional cluster of function keys across the top of the keyboard. The directional arrow keys are no longer shared with the numeric keypad, one of the more unpopular features of the IBM-PC keyboard.

The display screens come in several flavors also. The lowest resolution offers 720x320 dots ranging to a high of 960x1000. The size of the display is usually 14 inches, but the top of the line is a 19 inch display. Being a PC, there is the capability of hooking an additional monochrome display to the machine with text on the monochrome and graphics on the color display. The pamphlet I have mentions eight colors, but is vague as to whether this is referring to the number of simultaneous colors or total palette. The graphics is controlled through a separate box called a display attachment unit that comes in two flavors, low and high resolution. I strongly suspect that there is a co-processor in this box that is doing the same thing for graphics that the 8087 math co-processor does for floating point numbers. Logical things for a graphics ►

ACM SIGGRAPH and IBM's 3270-PC

► co-processor to do are: vector to raster conversion, flood areas of the screen with color, coordinate transformations, interact with graphics devices both input and output. This would free the 8088 up for application tasks and greatly increase the speed in which the graphics appear on the screen.

Now some bad news. If you already own a PC, you cannot upgrade it to a 3270-PC/G or /GX, you must buy all new equipment. If you are thinking of using the /G or /GX as a standalone graphics machine without a host, this will probably not be cost effective, as the price is well in excess of $10K.

It is fun to engage in a bit of speculation as to what IBM's next move might be. I would expect them to introduce a new color graphics board that replaces the slow, flickering board we have to endure today. I would also expect a smarter board with a co-processor that does the graphics drudgery. Expect more colors and higher resolution options. There is a great deal of graphics standardization that is being attempted by ANSI, ISO, and DIN. Their next important move is to define a virtual device interface, (or how the processor talks to the hardware). Expect IBM to make a statement as to how they would like to see this happen in the form of some products placed into the marketplace. By all means, don't expect IBM to stay out of the computer graphics marketplace.

Tom Prickett

Copy deadline for September PC NEWS is August 24th.

DISK OF THE MONTH

by Doug Windham

AUGUST HIGHLIGHTS

What can I say ? Every month I am pleasantly surprised at the quantity and quality of software coming out. The FREEWARE and other user-supported programs are especially good as a general rule. Oh, someone asks, "What is FREEWARE or user-supported programs?". FREEWARE is a trademark of The Headland Press, Inc. and was the originator of the user-supported software concept. The user-supported concept encourages the copying of programs, encourages the creation of personal computer software and the support of same, and believes the user is the best judge of the usefulness of a program. This concept encourages a contribution to the author of a specified amount, usually $20 to $40. New this month:

August 1984 (Double sided)

PCPG (PC Personal Graphics) written by Eugene Ying and contributed by Guy Andrews is an excellent picture graphics drawing system, with text capabilities. You can draw with keyboard, joystick, or lightpen. Output can be on a graphics monitor, plotter, or to disk for printing later. Req. 128k DOS 1.1 or 192k DOS 2.0 and a color graphics adapter.

PC-TOUCH is a simple program with a simple purpose: to help you practice touch-typing. PC-TOUCH will display on the screen lines of text for you to type. As you are typing, PC-TOUCH will update statistics along the bottom two rows of the screen.

BAT201B is the new and improved version of the popular BAT command language (Extended Batch Commands). Some of fixes/changes are: Added code to speed up CALL/GOTO for large files. Changed stack interface to BIOS to fix bug with multimate/filecmd. 'Eagle' DOS 1.25 compatible now. When in TRACE.ON mode, the trace messages on a color display are green. Messages from program are white. Fixed bug in stacking an F1 key by itself. Prokey will now coexist with Extended Batch Language as long as the provided patch is applied to Prokey.

MISTOX.WKS A LOTUS 1-2-3 worksheet for examining what-if scenarios with up to 3 stocks. Instructions are included on the worksheet along with 4 macros.

PD #9 (Double sided)

PC Firing Line/PC Underground

This is a copy of the premier issue of PC Firing Line/PC Underground magazine on diskette. It is published by Bill Salkin of Hollywood, California. This issue includes ►

DISK OF THE MONTH

► a review of IBM's Personal Editor and MetaBASIC (a BASIC preprocessor). It also has many articles, including "PC DOS and Firmware", "Bug is DOS 2.0 Program Loader", and "The Interrupt Phonebook". My favorite article is the one showing how to translate BASIC verbs to LOTUS macros titled "The 1-2-3 Advantage".
It requires 128k and will run with any release of DOS.

PD #10 (Double sided)

Finance Manager Version 2.0

A User Supported general ledger system by Genesis Software. This is a menu driven double entry bookkeeping system. The program is easy to use, but you must understand double entry bookkeeping.

EX0004 (Double sided)

This is the June, 1984 issue of the EXCHANGE diskette from IBM. It features:

New Products: Kings Quest (PCjr game) and the IBM Assistant Series

Views and Reviews: First Impressions of the IBM PCjr, The IBM PC Color Display, and Making Life Easier with Macros

Tips and Techniques: POKing Around on the Fixed Disk, Recovering Data from Bad Directories, Tracking Time Spent Programming, Defaulting to ECHO OFF for Batch Files, and Speeding up Memory Check

Focus on Software: BASIC and Machine Code Interfacing, Running DOS Commands from BASIC, and Numbers in Random Files

Focus on Hardware: Installing Half-Height Drives and Microprocessor Comparisons

EX0005 (Double sided)

This is the July, 1984 issue of the EXCHANGE diskette from IBM. It includes:

New Products: Data Encoder, PC and XT hardware maint. manuals, Insurance Agency System, and IBM Doctor's Office Manager

Views and Reviews: Understanding LOGO, A View of APL, IBM Pascal Compiler Version 2.0, and Godel, Escher, Bach : A Book Review

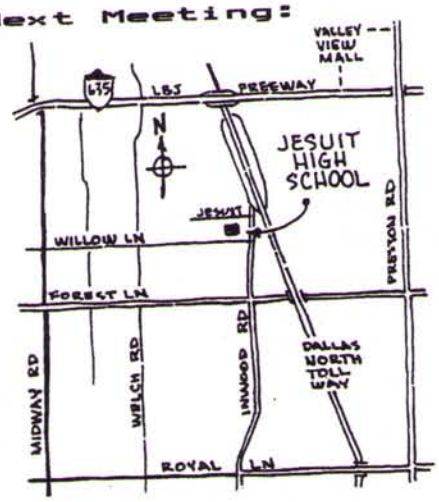
Tips and Techniques: Determining BASIC Execution Environment, Windowing in BASIC, Word Processing in Personal Editor, and Cleaning Disk Drive Heads

A new column titled "Bytes from Boca Raton" which contains: SCRIPT/PC : Words from the author
IBM PC : Official Olympics Computer

DEMO#1 (Double sided)

This is the first of an experimental series of demonstration diskettes. This first one is a demo of IBM's Writing Assistant. IT IS NOT A FUNCTIONING VERSION. The printing and diskette read and write functions are not included in this demo copy. It does allow entry and correction of what has been entered on the screen and use of the spelling checker. It will work on any PC with 128k and a double-sided diskette drive with DOS 2.x.

Next Meeting:



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All members of the club are encouraged to contribute copies of public domain programs to the club library. For each new diskette of software contributed, you may select any diskette in the club library in exchange.

Doug

MAIL ORDERS

Starting with this month's catalog, and for as long as the members use it, I will fill mail orders on the following basis. All orders must have payment enclosed and addressed to: Doug Windham, DOM Chairman, PO Box 475205, Garland, Tx, 75047. Postage and handling must be enclosed per the following: $ .50 per diskette ordered, with a $2.00 minimum charge, and $1.00 per catalog ordered.

DISK DETAILS

Price: $5.00 Catalogs: $2.00

Available at the meeting, in the cafeteria at the specially marked table, before and after the general meetings. Media: DSDD 5 1/4" diskettes formatted without DOS (320k). Public domain software only, standard full disclaimers. Call disk of the month chairman Doug Windham at 271-5727 evenings before 9 pm to submit material and programs for future Disk of the Month issues. All back issues are available at the meeting and by mail order. ►

MAIL ORDERS...

All members may order any diskette from the club library, and have it mailed to them. All current issues as well as back issues are available by mail order.

Diskettes available: (please check box to left of diskette desired.)

[ ] Jan. 83 - Games & Songs
[ ] Jan. 84 - Sample Pascal progs.
[ ] Feb. 83 - Maze & Utils
[ ] Feb. 84 - 1RD & Math Tutor
[ ] Apr. 83 - Games & RT-BAS
[ ] Mar. 84 - Games
[ ] May 83 - Games
[ ] Apr. 84 - PC-FILE.III
[ ] June 83 - PC-TALK.III
[ ] May 84 - PC-ENTRY & NEWKEYS
[ ] July 83 - Games
[ ] June 84 - IBM UG Newsletter
[ ] Aug. 83 - Utilities
[ ] July 84 - PC-WRITE 2.2
[ ] Oct. 83 - CHASM
[ ] Aug. 84 - PCP6 & PC-TOUCH
[ ] Nov. 83 - 747,Sort,&Spooler
[ ] PD #1 - Income tax & LOTUS templates
[ ] PD #2 - Utilities, XDIR, & BAT
[ ] PD #3 - LADYBUG (LOGO)
[ ] PD #4 - UTIL, SPEED411, & SWLPT
[ ] PD #5 - DND (Dungeons & Dragons)
[ ] PD #6 - Freecalc & Micro Acct
[ ] PD #7 - Games
[ ] PD #8 - Utils, Finance, programs to use w/DBASE II
[ ] PD #9 - PC Firing Line/PC Underground
[ ] PD #10 - Finance Manager
[ ] EX #2 - EXCHANGE April 1984
[ ] EX #3 - EXCHANGE May 1984
[ ] EX #4 - EXCHANGE June 1984
[ ] EX #5 - EXCHANGE July 1984
[ ] DEMO#1 - Demo copy of IBM Writing Assistant (will not print, or read/write to disk/diskette)

PRICE: $5.00 per diskette plus $.50 postage and handling for each diskette. ($2.00 minimum postage and handling.) A catalog containing a more detailed description of disk contents is available for $2.00 plus $1.00 postage and handling.

$5.00 x number of boxes checked = _____.____
$ .50 x number of boxes checked = _____.____
($2.00 min.)
$3.00 x number of catalogs ordered = _____.____
($2 + $1 p&h)

Total amount enclosed _____.____

Address all orders to:
Doug Windham
DOM Chairman
PO Box 475205
Garland, Tx. 75047-5205

AUG 84 0009

SOFTWARE REPORT

by Dick Gall

PROFESSIONAL BASIC

PROFESSIONAL BASIC is doing for the BASIC computer language what the invention of the wheel did for the transportation industry. This fundamental new tool brings a wealth of new concepts that provide users with a myriad of opportunities to rapidly increase programming capability, efficiency, and accuracy. An ingenious extension of the concept, already included in the package, makes PB into a powerful teaching and demonstration system applicable for target audiences with computer skill levels ranging from absolute beginner to advanced.

PB is written by Dr. Neil Bennett and distributed by Morgan Computing Company, Inc., of Dallas. Neil is chairman of the Programmer's Special Interest Group. His acknowledgements in the program documentation include recognition of the support provided by members of the Dallas Apple and IBM PC clubs.

The main power of PROFESSIONAL BASIC is its use of window displays to expose all actions that occur as each step of a program is executed. You hold the program on a leash while examining it and all its effects - then go on to the next step when you're ready.

Any user of the standard BASIC interpreter can quickly gain the benefits of PB. Program loading and saving is very similar to the familiar procedures. As a program is entered from the keyboard or loaded from disk, every character is checked for correct syntax. Once a program is loaded, the window functions are available for examination of the program to see how it really works. On command, the various windows are displayed simultaneously with execution of the program. It can be run in either the step-by-step or continuous mode. Available windows include:

- ARRAY - contents of defined array variables
- VARIABLE - contents of defined variables
- DATA - data statement contents, and the progress of reading them into the program
- FOR/NEXT LOOPS - defined loops and the states and and the values of the main loop variables
- GOSUB - subroutine statements and status
- DISK I/O - disk I/O screen with buffer contents
- LIST TRACE - with the current instruction highlighted in reverse video
- CHRONOLOGICAL - replay of executed sequence (also called historical record rewind)
- MEMORY DISPLAY - in dump format
- PRINT - display contents
- BACKUP - display prior screen
- HELP - on-line help display

Areas of your program can be located and accessed quickly with the use of text statement labels. FIND statements locate all occurrences of a given label, and SEARCH functions locate all occurences of a string with the source program. The simultaneous display of two windows using a split screen capability is invaluable in confirming that a program step performs the expected actions.

Effective use of the PC's function keys provides simple program control and powerful program editing capabilities. Scrolling functions use the cursor keys to quickly locate a desired variable, value within an array, or area of memory to be examined. Options in the LIST TRACE window identify non-executed code, give a count of instruction execution, and provide a histogram.

A status line display shows the state of program options, modes, and such statistics as current execution speed. Programs are RUN in a semi-compiled state which generally improves full-speed execution time significantly over the standard BASIC interpreter. PB can take advantage of the 8087 Numeric Data Processor chip and addresses all available PC memory. A comprehensive demonstration program is included, plus 22 sample programs that illustrate the use of the windows and program features.

PB is normally driven by the user in real time using keyboard instructions. COMMAND MASTER is a subsystem that enables PB to be driven by stored instruction files. This feature is conceptually similar to the use of batch files to input commands to the PC-DOS operating system. It can be used to simulate the experience of a person sitting at the keyboard sending commands to the system or entering data to an executing program. Text can be written to the screen at a convenient point to illustrate and explain operations being performed. Control can be switched from one tracing window to another, and demonstrations can be run multiple times with different option selections.

This brief description can only illustrate a portion of the PB functions and capabilities. Typeset documentation, complete with comprehensive table of contents and index, are furnished. The program is suitable for beginners or advanced BASIC users and should be of great assistance in the development of training aids and demonstration programs. The list price of Professional Basic is $345. For further information, call Morgan Computing at 739-5895.

Dick

Newsletter Exchange

The following article is a reprint from the Sacramento PCUG Newsletter.
Tom Prickett

Mixed Reviews

by Bob Mix

Microrim's R:BASE database manager is billed as the David that will give Ashton-Tate's dBASE II a large goose-egg, possibly on the bottom line. Now Microrim has released a thing called Clout, that they call a "Conversational Language Option: to be used with R:BASE. According to theory, ordinary people using Clout will be able to retrieve information from R:BASE databases by expressing their wishes in plain English.

What is Clout? To us "computer people", Clout is a query language (our language is both queer and query). It is simply a tool for extracting information from a computer. The beauty of Clout is that it can "learn" your terminology and lets you express your desires in your own words.

Any student of communications knows this thing we call "plain English" is a very complicated medium, so I was sceptical that Microrim's application of artificial intelligence and expert system theory could do the job on a microcomputer. After using the sample database in "Devil's Advocate Mode", I must say I am impressed.

Clout has a very plain vocabulary of 300 words, to which you may add your own 500 word vocabulary. If your vocabulary is larger than 800 words, you must talk down to Clout; here's your chance to feel superior to your computer. Clout is menu-driven and has 60 help screens. Three diskettes are supplied, one "Disk II", and two others labelled "Disk I 256K" and "Disk I 384K". I used the 256K version. Send in the Product Registration Card and you will receive duplicate copies of the copy-protected "Disk I" disks. Installation was simple except for the "README" instructions having drives A and B reversed -- that's what happens when you use artificial intelligence! One suprising thing is that you don't need R:BASE to use Clout, it works with R:BASE databases, but has all its own code.

Type "B:CLOUT" and you will be presented with the main menu in a four-level structure. Choose option 2 and you can list all attributes and relations. Option 3 allows you to see the dictionaries. After nosing around in the resident dictionary and sample databases, I chose option 1 to "Examine the data using conversational requests".

Of course, my first order to Clout was "Gimme those turkeys". Clout politely requested clarification of my verbiage. I laughed and turned to the tutorial in the manual. The first command I typed exactly as I was told to type it, and received the expected results. But then Mr. Hyde predominated, and I proceeded thencefourth deliberately paraphrasing commands and requests. Over 80 percent of the time, I extracted the same results I would get by typeing commands precisely as printed in the tutorial. About once in five times, I had to use a synonym; as an example, I said, "Let me see" instead of "Show me". Clout asked me if I meant "sex" when I said "see". I told Clout sex was not a spectator sport, but Clout didn't understand spectator or sport.

When humans talk, they constantly use terms and phrases that have specific meaning only in light of prior conversation. When I found Clout keeping up, I just had to say. "I'll be dilly-waggled". You can start with a long list of individuals and progressively narrow your search by referring to "them", or use some similar word to refer to the current subset of cases. You can freely sprinkle your requests with words like: print, total, average, sort, rank, standard deviation, correlate, count, maximum, and today. Clout handles dates and times in a variety of ways matching the many ways people speak about time.

What can be said against Clout? Not a lot. With a small diskette database it is quite quick enough. Running with a large database I will guess it becomes marginal in speed, since Clout does so much more than other query systems. The only other possibily serious problem is what people call a "misunderstanding". Because Clout infers so much, there may be a discrepancy between its assumptions and your own. If you intend to make an important decision based on the results of a series of inquiries, it would be wise to make a confirming inquiry or two to make sure the results represent exactly what you were after. Price: $195.

Also of interest to R:BASErs is a new book called "Managing Information with Microcomputers" which features R:BASE; published by Microrim it sells for $19.95.

Bob Mix

Newsletter Exchange

The following article is a reprint from the IBM Exchange diskette for May 1984. Ed.

An Introduction to PC Diskettes

Howard White
Boston Computer Society
IBM PC Users Group

Introduction

When you buy double-density soft-sector disks for your PC, or choose between DISKCOPY and COPY, you are making decisions affected by the relationship between DOS, your PC's Disk Operating System, and the type of disk drives installed in your computer. While it is not necessary to have a technical understanding of the way DOS maintains information on your disks, it's useful to understand the general principles so that you'll be a better informed user.

This article will introduce you to "tracks" and "sectors", explain in disk terms what a file is, describe the common DOS utilities for formatting, copying, and testing disks, and explain the concepts of density.

Looking at Diskettes

We start our exploration of diskettes by looking at one. With the permanent label in the upper left hand corner, we see:

- The large round hole in the center. When you close the disk drive's "door", the drive clamps onto the disk here. Many disks come with "hub ring reinforcements", thin plastic rings like those used to reinforce three-ring notebook paper, intended to help the disk withstand the mechanical forces of sudden starts and stops.
- On the right side just below the center of the hub hole, is a smaller round hole called the "index hole". If you very carefully turn the disk within its protective jacket, you will see that at one one point is a small hole in the disk hole in the disk itself visible.
- Below the hub hole is a slot shaped rather like a long race-track, through which you can see the disk surface itself. It is through this slot that the disk drive heads read and write information to the disk surface.
- At the right side, about one inch from the top, is a rectangular punch from the side of the disk cover. This is the "write-protect slot". It may not be present on all disks, particularly those you have purchased with programs on them. If the slot is absent, or if it is covered with tape, the drive can read data from the disk but not write on it.
- Two very small oval notches at the bottom of the disk, flanking the head slot. The drive uses these notches to assist in keeping the diskette in position.
- As you have almost certainly been advised, disks can be damaged or destroyed by:
  - Touching the recording surface (though the head hole) with your fingers or anything else;
  - Writing on a disk label with a ball-point pen or pencil. Use a felt-tip marker;
  - Bending the disk;
  - Spilling coffee, etc. on the disk;
  - Overheating a disk (e.g. by leaving it in the hot sun in your car);
  - Exposing your disk to stray magnetic fields.

Information is read from and placed on your disk by one or two "heads" (depending on whether you have single or double-sided drives). Heads used with "hard disks", including the "Winchester" drives available for PC's, "float" above the disk surface on a microscopic cushion of air. But the mini-floppy drive heads actually touch the disk surface. Thus both the disks themselves and the heads should be kept clean - head cleaning kits are available - so that precious information will not be scraped off the disk surface by abrasion.

Tracks and Sectors

From the point of view of DOS, data on your PC diskettes is organized in "tracks" and "sectors".

Tracks are narrow concentric circles going around the disk. Sectors are pie-shaped slices of the disk. DOS 1.0 and DOS 1.1 read and write 40 tracks (numbered 0..39) and eight sectors (numbered 1..8) on disks. If you have double-sided drives, DOS 1.1 automatically formats and deals with disks containing information on both sides of a disk. The distance between tracks - and therefore, the number of tracks on a disk - is a built-in mechanical and electronic function of the drive.

When you buy new disks, they are like blank sheets of paper, containing no information at all. Formatting the disk puts onto it the information DOS needs to maintain a directory and files. Normally, you also put onto the disk certain parts of DOS (using the /S option after the FORMAT command).

The track nearest the outside edge of a disk - track 0 - is almost entirely reserved by DOS for its purposes. Track 0, Sector 1, contains the "boot record" which the system sometimes needs to begin operation. Sectors 2 and 3 contain the "file allocation table", or FAT, which is the disk "reservation clerk", keeping records of which portions of the disk have information and which have empty space. Finally, sectors 4-7 contain the directory - information about the files, a part of which you see when you type the "DIR" or "FILES" command.

In addition, assuming you have formatted the disk using the /S (system) option, two "hidden" files called IBMBIO.COM and IBMDOS.COM are placed on the disk (in different location, depending on whether you have single or double sided drives). They are called "hidden" because the ►

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► normal directory command will not reveal their presence on a disk.

In computer jargon, all of this is "transparent to the user", meaning you don't have to (and generally can't) decide where information will go on your disks. But just because it's "transparent" doesn't necessarily mean you shouldn't be aware of the decisions DOS makes for you.

PC DOS 1.1 puts 512 bytes of information on each sector of a disk. As a broad generality, a byte is equal to a character, but BASIC normally saves programs in a compacted format, so you can't make an automatic judgement about the amount of disk space a BASIC program will use.

But for purposes of illustration, let's assume you have a newly-formatted disk in your drive and have created a BASIC program of 2000 characters, or 2K bytes. You type SAVE "FILE1", and DOS begins putting your program onto disk.

On the outermost track, sectors 1..7 already are taken up with system stuff, as mentioned previously, so the first available sector is track 0, sector 8. The first 512 bytes of your program go there. Then, because DOS always tries to keep things together, the remaining roughly 1500 bytes go onto track 1, sectors 1, 2 and 3.

Now, you write another, entirely different, 2000-byte BASIC program and SAVE it as FILE2. Again, DOS puts it on the first available spots, so it goes to track 1, sectors 4, 5, 6 and 7.

Going back to your first program, add a few hundred characters, and SAVE it again under the same filename, FILE1. The first four sectors (even if changed) go back to the same spots as the old first four sectors. But now your second file is in the way of keeping things orderly. The next available free sector is track 1, sector 8, so that's where the rest of your revised first file goes.

Next, you decide to delete your second program, FILE2, using DELETE or ERASE commands in DOS or the KILL command in BASIC. These commands don't actually erase any information from the disk (therefore making it possible, using a utility program , to "unerase" a program you've just accidentally wiped out). What the DELETE family of commands does is tell DOS that the sectors formerly occupied by, say, FILE2.BAS, are now available for recycling.

Now you create and save a new program, FILE.BAS, which takes up five sectors. The first four go into the spots vacated by the now obsolete FILE2.BAS. The last one has to go into the first available spot, after the newly-added part of FILE1.BAS. We now begin to have a patchwork quilt.

We're still not in bad shape. But suppose our disk gets fuller. We're deleting old files to make room, and creating vacant areas defined solely by the needs of DOS at the time the disk was younger. It shouldn't be hard to see that a full disk can become a real crazy quilt, with any sector of any file occupying any of the 320 (single sided) or 640 (double sided) sectors not otherwise used by DOS, system files, other user files.

Since all of this is, as we said, transparent to the user, what difference does it make? Not very much, if all you are doing with disks is storing programs. But as soon as you start using disk data in your programs, you can affect the performance of those programs, perhaps substantially, by proper disk management.

To understand why, consider what happens when you ask for disk access, either reading or writing. First, the disk is told to start rotating at 300 rpm - it only spins when needed, and the red light goes on to tell you that's happening. Next, DOS figures out which track the data is to be read from or written to. A "stepper motor" moves the heads toward or away from the center of the disk, positioning them exactly over the right track (if you have double sided drives, the top and bottom head move together). This movement of heads from track to track is the slowest operation your disk drives perform, and disk access, in general, is the slowest thing your computer does (excluding things governed by external forces like slow printers and telephone lines). Once the heads are over the right track, access to the desired sector is relatively fast - the drive "sees" the index hole open up as that one hole punched in the disk passes over the openings in the disk jacket, and then the drive/controller combination just has to wait the right amount of time before reading or writing to a sector.

The message here is that moving from one track to another is the slowest of the slow things a disk drive does. DOS tries to keep sectors of a program together, but as the patchwork quilt pattern develops, it can't help much. In an extreme case, the heads may read a sector on track 0, then pick up another from track 39, then move back to track 1 to pick up a third, then to track 39 again... and so forth. The slowest part of disk access is in control.

What can be done? COPY.

The DOS manual lists two different ways of copying information from one disk to another: COPY and DISKCOPY.

DISKCOPY makes an exact copy of one disk to another. So if one disk is a patchwork quilt, a DISKCOPY of it will look the same. But there's an alternative:

COPY *.*

In this case, asterisks are "wildcards", meaning "whatever would legally be here". So *.* means any legal filename followed by any legal filename extension. Therefore, if you type COPY A: *.* B: , you direct DOS to copy all files on drive A to the disk on B. There are some assumptions here. First, the "target" drive - in this case, B, must have enough room for the files copied to it. Second, unlike more sophisticated schemes on larger computers, DOS presently provides no protection scheme. So if ►

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► there is a FILE1.BAS on A and a FILE1.BAS on B, COPY A version. COPY *.* is best done TO a disk whose contents are expendable.

The advantage, however, is what happens on COPYing. If the target disk is clean (containing nothing but what FORMAT /S put there), COPY *.* to this disk will reorganize data. Thus if FILE1.BAS on the source drive was scattered from track 39, sector 4, to track 3, sector 2, with random stops in between, after a copy it will be placed in consecutive sector order on the new disk. The result is that the next time you try to read FILE1.BAS, the heads won't have to jump all over the place looking for pieces of the file, and should therefore be able to read it faster.

The message is: generally COPY x procedure IF the target disk, y in this case, is clean. If it is not clean, COPY will work around the files on the disk, putting the files from x in the best possible positions. DISKCOPY x: y: will make disk y an exact clone of the x, wiping out any files that may have been on y and reproducing the patchwork quilt of x.

There are utility programs in DOS to check the accuracy of copying. DISKCOMP is analogous to DISKCOPY; that is, it starts with the assumption that the compared disk is supposed to be a snapshot of the original, and reports differences. Even if each file on the second disk is an exact copy of the corresponding file on the first, DISKCOMP will report differences if they're in different sector/track positions.

On the other hand, COMP compares the accuracy of the copy of individual files. You can say COMP A:FILE1.BAS B:FILE1.BAS and get a report as to whether the two files (in this case, on different disks) are identical. But you cannot say COMP A B on B:). The reason for this, of course, is vagueness - you can't compare something-or-other here with something-or-other there and get (except by chance) any valid information.

Let us now consider some practical implications for PC owners of what has been covered in this article.

Diskette Types

There are three separate choices offered to the purchaser of 5 1/4" diskettes (aside from the questions of quality, price, etc.).

Soft-sectored or hard-sectored: For the PC, soft-sectored disks have only one index hole on the disk surface itself. Once per revolution this hole is visible through the hole in the protective jacket, and drive/controller/DOS uses this hole to establish the location of the first sector on any track. Hard-sectored disks have a hole for each sector, and thus each hole marks the beginning of a new sector. If you tried to use a hard-sectored disk in a PC, the machine would get very confused. Sometimes hard-sectored disks are not specifically labelled as such, but specify "10 sectors" or "16 sectors". Don't buy them.

Single-sided or double-sided. At first blush, this would seem to be an obvious choice. If you have single-sided drives, you buy single-sided disks, and if you have double-sided drives, you buy double-sided disks. Not so easy. If you have double-sided drives, you can, of course, make the extra investment in double-sided disks, but you probably don't need to. It is economically impractical for disk manufacturers to make some disks with recording surfaces on one side and other disks with recording surfaces on both sides. Today's "single-sided" diskettes look, and usually behave, exactly the same as double-sided diskettes.

The result of this is that - depending on the brand of disks you buy - you can generally successfully format and use "single-sided" disks in double-sided drives, at substantial savings in disk costs. There is no real danger in this practice. When you format a disk, one of the things DOS does is determine whether there are bad sectors (ones which can't reliably hold information). If it finds any, it tells you "xxx bytes in bad sectors" and it seals them off against any future attempts to put data there. The net result is that you have a double-sided disk with slightly less than full storage capacity at the price of a single-sided disk.

Recommendation: Unless you have money to burn, buy single-sided disks even if you have double-sided drives. If a particular brand seems to produce "bad sectors", consider switching brands.

Density (single, double, quad). "Density", in simplest terms, is a measure of the amount of information that can reliably be packed into a given area of a recording surface. The keyword here is "reliably", for as in the question of single vs double sided, the matter may be settled by how well sample disks measure up to manufacturing tests. However, the question of density also raises the question of how many tracks are written on your disks.

The drive or drives that came with your PC - whether single or double sided, are almost certainly "double density" drives, also referred to as "48TPI" (tracks per inch) drives. This means that when the disk controller tells the drive "move one track closer to the center", the drive will respond by moving the heads exactly 1/48" closer to the center. It is possible to buy "single density" and "quad density" drives which look exactly like the drives in your PC. When a single-density drive is told to move one track closer to the center, its heads move 1/24:. When a quad-density drive is given the same instruction, it moves the heads only 1/96". The result is that a quad-density drive puts two tracks in the same amount of space a double-density drive uses for one track, and so the disk holds twice as much information. There is, at least potentially, a tradeoff here. As you squeeze more and more information onto a 5 1/4" disk, you place increasing demands on the ability of the drive to locate information ►

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► accurately, and on the ability of the drive to locate information with the increasing precision required.

I started this discussion by mentioning density as one of the factors involved in buying diskettes. As with single- vs. double-sided, manufacturing quality control is a major part of what distinguishes one density from another. Generally, you will buy double-density drives for your PC.

DOS 2.0 and DOS 2.1 have the ability to increase disk capacity by 12 1/2 per cent by changing the formatting scheme. Thus double-sided disks, which now hold 320K bytes, will hold 360K without any other changes in software or hardware.

This is done by increasing the number of sectors per track from 8 to 9. In turn, it can do so because PC disks are soft-sectored, their sector organization is determined by the operating system, not the number of holes punched in the disk. In doing so, DOS 2.0 is increasing the density of disk storage, putting more information into each sector than earlier versions of DOS. (Note that it is not increasing density in the way quad-density drives do - by squeezing tracks closer together.) It takes more than a DOS change to do that; the disk drives themselves must be configured for the changed track pattern.

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