To Program Or Not To Program ... There's No Question!

By David Wilson

References to programming are everywhere. Schools teach BASIC programming in their introductory computer courses. TV and newspaper journalists mention programming regularly in their reports on computers. Publishers produce a constant flow of new books on programming. Writers compare the merits of BASIC, Pascal, C, Assembler, and other languages for personal computers. With so much coverage programming must be important.

Does this also mean that all of us who use a computer for more than playing games must learn to program? I believe the answer is yes, at least, if we want to use our computers well. However, very few of us will ever need to learn any of the languages listed in the first paragraph.

Those complex languages take years to learn well. Even for an expert, it takes months to develop, test, and debug a new program. Large programs may be the work of many programmers. Certainly, you could write your own wordprocessor, spreadsheet, or database program, but it would take a tremendous amount of time and effort. It makes more sense to pick an available program that suits your needs rather than write your own. In short, if you want good software, leave the programming to the professionals whenever you can.

There may be times when you have to do it yourself. If you need special programs which are not available, you'll have to learn how to write them. A control program for a robot, or programs for a very uncommon computer are examples of programs you might have to write yourself.

In This Issue:

PCjr Lives!

Q. **What are these people doing?**
A. **Ruining their health. (And wasting time when they could be using their PCjrs!)**

You might also decide to learn a programming language just for fun or personal satisfaction. This might be the first step in becoming a professional programmer or the beginning of a new career teaching computer programming. If you don't have one of these or similar needs or interests, you probably won't ever have to learn one of the formal languages.

If you just want to understand more about how your computer works, even though you don't intend to be a programmer, I suggest learning a little Assembler. This is down at the fundamental operating level of the machine and is great for understanding how it works. Assembler is also available at minimum expense because DEBUG which comes with DOS assembles and unassembles code. Buy a book on assembly language programming, and you're in business. DEBUG is also useful for making minor alterations to programs written by others, a procedure called patching.

Although we won't have to learn a lot of BASIC, Pascal, C, Assembler, or similar languages, we still need to learn how to program. Through programming, we can give the computer a set of instructions once which can be carried out many times,

Beginner's Corner

Professor DOS Has Much to Teach

by John Schwab

This is the first in a series of columns on DOS commands, their usages and functions. Many word processors know little more than how to get into their program, save their work and print it. What if something goes wrong? Did I format that diskette? Where did that file disappear to?

I hope to answer these questions and more so that in the event of an emergency, you will be able to save your diskette. This month's topic is the file CHKDSK.COM, a seldom understood DOS file. What does it mean? Simply put:CHecK DiSK. On a more in depth level, it means "Tell me everything about my disk, my free space, the contiguousness of my files, the volume name of my disk, any hidden files, any disk errors, and is there anything to repair or restore?"

That sounds like quite a mouthful, so let's examine these one at a time. First we must have the file CHKDSK.COM either in the default directory, or in a pathed one. Next, we specify

which drive to check. If no drive is specified, CHKDSK assumes the current logged drive. This is the simplest method of using the command. Try it; as you read this, place your DOS disk in drive A> and type "CHKDSK", then hit <Enter>. Do not type the quotation marks. The drive whirls and suddenly a message appears:

```
362946 bytes total disk space
122880 bytes in 12 user files
223916 bytes available on disk

655360 bytes total memory
324256 bytes free
```

This is quite a bit of information, and we have not even used any options yet! Well, what does this mean? Let's look at it a line at a time:

The 1st line states how big the disk is, usually 360K for a 5.25" Double Sided Double Density Diskette. If you remember that 1000 bytes is equal to 1K, then the numbers are easier to read. The 2nd line tells us that 122K of the diskette is being used by 12 user files. A user file is a file placed on the disk by the user, such as a data file or a program file as opposed to a system file that the computer might place on a diskette. The 3rd line lets us know that we can still place 223K worth of data on this diskette. So far we know that we have 12 files and two thirds of the disk free. The blank lines separate the DISK information from the MEMORY information. The 4th line says we have 665K total memory. This is standard for a computer with 640K. The reason it is a little over is because 1K is really 1024 bytes, but earlier I said it was 1000 bytes for simplification. The actual number here depends on your particular system. The 5th line tells us that we have 324K of memory that the computer is not using. Remember that DOS uses memory, and so does the program you might have loaded (SideKick or

Questions and Answers

By Rene Waldron

EDITOR'S NOTE: jr Newsletter gets questions in the mail from PCjr owners every day. So many, in fact, that we apologize for not being able to answer them personally. This Questions and Answers column is our way of responding to the questions readers ask about their PCjrs. We can't answer all of the questions we receive, but we try to answer those that are either asked by several readers or those we feel will be of interest to PCjr owners in general. If you have a question that you do not see answered here, or elsewhere in this newsletter, please feel free to write to us at jr Newsletter, Box 163, Southbury, CT 06488.

Q. I know one or more memory chips are not working right. Do you know of an easy way to check them with a volt-ohmmeter or must one use the substitution method? H. Seto, Cherry Hill, NJ

A. Only the most rudimentary checking can be done with a volt-ohmmeter because the signals to / from the chips are square wave and at a frequency in the medium-wave radio spectrum. With a manual of the specifications you MAY be able to check the stable D.C. input for the chip, but not much else. Actually you'll only be checking the power supply to the chip, but if the voltage seems low at the chip leg it could indicate a direct short within the chip, a very rough check for a very unusual bug. Conversely, the voltage will NOT be high if the chip is open, so it is really not much of a test. We must report that substitution, a chip-checker or an oscilloscope are the best methods. These all check the chip under dynamic conditions and test for much more than shorts, opens or resistance changes. Capacitance and inductance play a large part in the operation of integrated circuits of all types and a volt-ohmmeter isn't the best instrument for testing these.

Q. I have the jrHotshot which brings me up to 640k and would like to increase the clock speed. What are my alternatives? Are there any vendors carrying such options? P. Andrade, Somewhere

A. Yes, there are, but they speed things up according to the maximum rate your existing chips and/or board configuration can handle. Your letter seemed to indicate that you thought the speed-ups available won't work with a jrHotshot. What actually happens is that the MAXIMUM speed (8 MHz) option runs erratically. The next speed down seems to have less problems, so there IS a considerable speedup, it just isn't up to the maximum. The vendors generally will explain this quite clearly.

Q. I read an article some time back which stated that it would be wise to change my disk drive designation so that my Peanut add-on would be A: and the original internal would be B:. I tried to do this by swapping the cables but to no avail, I could get both as A: but never recognized the original as B: R. Burnham, Roanoake VA

A. There is a combination terminating / selection jumper block on each disk drive which indicates to itself where in the chain of drives it resides and this has to agree with the cable connections. The jumper itself is a little plastic block with a metal insert which, when slid onto a pair of standing wires, connects (jumps) them together. This little block and the selection of wires it sits on is usually just at the right rear of the top printed circuit board of the drive. It is right next to the wide, flat signal cable connector which you swapped. You can slide these blocks off and on by pulling straight up and pushing them down again over the proper wires.

Here's the routine:

(1) Look at the position of the jumper block on the original drive and mark it down. There are probably four possible positions labelled 0,1,2 and 3.

(2) Look at the block on the add-on drive and mark this down, too.

(3) Switch the position of each to the position of the other.

(4) Swap the cables and it should all be OK.

(5) If all is not well, don't be afraid to try other positions, but the blocks will usually end up on the wire pairs labelled #0 and #1.

Q. Still cannot use Prodigy in color. Monochrome is OK but the patch for Prodigy 3.1 still doesn't work. I have the disk and the patch but the same numbers don't come up in step #2 at the "E" command in Debug. My screen shows 2E. and not B8. can anyone help? Bob Cunningham, Pleasantville, NY

A. There are four possibilities: One, the version of driver.scr is NOT the correct one for Prodigy 3.1. Two, the version of Prodigy you are working with is NOT version 3.1. Three, they (Prodigy) have changed and / or upgraded the program and driver.scr. without changing the version number. Four, the copy of driver.scr you are working with has a bug (but we doubt it!) at that particular place. Version numbers are really important, so be sure to double-check everything. (P.S. Get rid of that long, tiresome, environment-eating prompt! Make a batch file with a single letter for its file name (e.g. "z.bat") which sets up the prompt only when needed and another batch file to clear

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Questions and Answers

it out...)

Q. I am having trouble with two programs, Universal Military Simulator and Jim Henderson's Muppet Print Kit. The programs load, but beep at me instead of accepting key input. Thomas Phillips, Avon SD
A. Here might be the place for either of the following two things: INT 9 correction and BUFFERS=10 with FILES=30. NOBEEP.COM OR NOBEEP.SYS could be tried in place of Larry Newcomb's JRCONFIG.sys if you still have trouble. Remember to always reserve MAXIMUM video RAM for graphics intensive applications such as these. Anyone out there able to run these two programs?

Q. Can anyone recommend a power-down sequence when one has a hard disk, monitor, modem, printer etc... well, you get the idea. Will the proper sequence help the next time one powers up? Does it do any damage to the equipment to turn on the whole shebang (minus the hard drive) at once with the surge suppressor main switch? Paul Shafer, St. Petersburg, FL
A. Powering down - First, save any data still in memory which ought to be on disk! If you have a hard disk, park the heads before turning off the power. We do this at the end of every session even though we don't move the drive around! If this isn't really what you're asking about, read on...

Our Jrs are plugged into a multi-receptacle surge suppressor. That means main unit, monitor, modem, printer, sidecar power, second drive power, hard disk power etc., everything is plugged in here! After parking the HD, we simply hit the master switch and turn off the whole danged thing! There is NO WAY a particular power - down sequence will change the next boot-up. Even those nifty modems with their own built-in memory won't do anything different.

The hard disk power-up sequence is sometimes necessary because of the laws of gravity and inertia. It takes time for the platters of the hard disk to come up to speed, stabilize and be ready for the test when the controller card is initialized and starts to checks it out. Powering up - Contrary to much that has already written, we have found that turning on everything at once does NOT do any damage. Here's the scoop: The relatively sudden larger demand (current load) on the average house-hold duplex receptacle when it all switches on at once actually causes a voltage DROP to all the devices. As they stabilize, the full A.C. voltage comes back up to normal. Notice, nowhere do we say it "spikes" up to normal or "surges up higher" than normal! We suspect the confusion arises because we know that electric lamps and such are damaged each time they are turned on. The reason for that is that the filament is cold when it starts and a massive surge of current
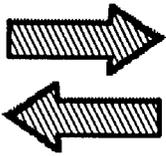
Reader Feedback
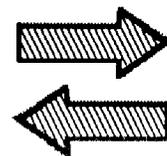
Jr Newsletter Mentioned in *PC World* Column

Just thought we could use a good word. I'm enclosing a clipping from *PC World*, September 1991. Lots of people out there know we've got a great machine. Does anyone remember *PC Clones* or *Compute!*, the old magazines that wrote us off?

I'm following the patches for DOS 5.0 and as soon as I get my hands on it, I'll use them. I'm also indebted to Mr. Dodge and the patches he's sent me. Keep it up - we got a good thing going.

Joseph J. Price, Charlevoix, MI

EDITOR'S NOTE: We were glad to see *PC World* mention our newsletter along with other information in answer to a letter of inquiry from a PCjr user. The letter was from someone who described himself as "one of the poor souls who purchased an IBM PCjr." We hope this will spread the word to other poor souls so they can contact us and begin to feel better about themselves and their computers.

Reader Seeks Shortcut To Disk Drive Hangup

I don't know if anyone else has experienced this problem, but occasionally my second drive will hang up after a crash (usually when I'm using Dollars and Sense). I can't access a disk in this second drive that I named "B". What gets the drive back in sync for me is shutting down, removing the case from the second drive unit and then moving the block on the drive from os1 to os2. I then reboot. After that I switch the block back to its original position and Voila! my second drive now works.

Anyone know of any short cuts to this?

Paul Salois, North Bend, WA

EDITOR'S NOTE: Not only do we not know any shortcuts, we are surprised that this procedure works at all. If a reader has some suggestions, please let us know.

Jr User Has Many Tips For Making Jr Fly

Looking at the articles in recent newsletters it is obvious that more jr users are serious computer users. I like to see it.

The recent article about using a HP DeskJet was very interesting. I also own a DeskJet. The tip about the source of paper was most valuable. An old axiom of computers is that people who look at printed copy have no idea what kind of computer it was generated on, only what kind of printer. Here are a couple of tips of my own on using a DeskJet. My first and only font cartridge I purchased was the Epson emulator. This cartridge adds some fonts, sizes, and effects, but most valuable of all it adds compatibility. My DeskJet now is a true letter quality Epson FX-80. Although more software these days knows what a HP printer is, many programs of the shareware variety don't. Every program that prints knows what an Epson FX-80 is. Also, if your software doesn't yet know what a DeskJet is but does know the Laser Jet, that is just fine with the DeskJet. If you own a DeskJet Plus, like I do, be sure and get the DeskJet Plus Epson cartridge, the one for the DeskJet doesn't work no matter what a salesman might tell you.

I have not seen a good printer utility yet that will let the user configure it for the user's escape codes. I just want to be able to set all my printer's attributes from a small TSR. Do you know of any? If not, maybe I'll write one and submit to the newsletter, but there is no point in that if one already exists. (We have one in the Software Store -- Print Handler Disk #51 -- ED)

I am now the proud owner of a PC Enterprises Megaboard. Third party chips are now cheap, cheap, cheap, so I recommend buying the chips through Computer Shopper type mail order. The installation was a breeze. The default switch settings worked for me just fine, this includes my SPC hard drive controller. My boot floppy recognized the extra conventional RAM without doing anything extra. I do use memory management software already.

For those who suffer from the RAM CRAM, there is a light at the end of the tunnel. A friend of mine just bought a 286 mail order for $199.00. Yes, this is the end of the line for the 286. Now aren't you glad you didn't break down and buy one in a weak moment? If not, this should help. He and I did speed

Software

Art & Music

JR MUSIC MACHINE. If you want to write and play music on your PCjr, this program allows you to do it. Displays music as you write it using jr's 16 colors, and plays music back in three voice harmony. Features allow you to adjust key, tempo, note values, etc. Color Display required. 128K ok. (Disk #62)

PCJR MUSIC SAMPLER. A collection of classical music "concerts" performed with great precision to produce the highest quality sound you've ever heard on your PCjr. Disk includes a separate program to activate Junior's sound generator before running game software to get highest quality sound. 128K ok (Disk #119)

ORIGAMI. Learn the art of Japanese paper folding. This program shows you how, step-by-step, to create amazing animals and other objects just by folding paper. Fun for kids and adults, too. 128K. Requires Basic Cartridge. (Disk #39)

PC-KEY DRAW. A powerful graphics program that allows you to draw, paint, produce slide shows, store and print your work. 256K, two drives. (Disk #37)

PC-KEY DRAW DEMO. Contains a slide show demonstration which allows you to see the amazing results you can get with PC-KEY DRAW. Helps to learn the many graphic capabilities of PC-KEY DRAW. (Disk #38)

PCJR MUSIC SAMPLER. A collection of classical music "concerts" performed with great precision to produce the highest quality sound you've ever heard on your PCjr. Disk includes a separate program to activate Junior's sound generator before running game software to get highest quality sound. 128K ok (Disk #119)

PIANOMAN. A great music program! Allows you to write your own music, store it and play it on jr's terrific sound system. 128K. (Disk #36)

PRINTMASTER LIBRARY. Two disk set full of graphic images for use with PrintMaster. (Disk Set #3 - 2 disks, $10)

Telecommunications

BOYAN. Selected Best of the Year by PC-Magazine, this outstanding telecommunications program will astound you with its smooth functioning and innovative features. Supports all protocols. Need 384K. (Disk #61)

JRTELE V2.1. Excellent, easy-to-use telecommunications software made especially for PCjrs, and the PCjr modem. Ideal for beginners, but has enough power and features for most users. Supports 300 and 1200 baud. PCjr internal or Hayes compatible external modems. 128K ok. (Disk #86)

PROCOMM PLUS TEST DRIVE. This is the upgrade of the already powerful and popular Procomm V2.42. It's got many new features including an improved host mode, context sensitive help screens, more powerful scripting. In addition to its power, it's very easy to use. (Reviewed 3/90) 256K (Disk #108)

Reader Feedback
(Continued from page 5)

tests. Granted, I was more familiar with PCs, so I slighted the test as much as possible in my favor, after all, we had a six pack riding on it. He and I have an understanding about these kind of things, he owed me a few too! We indexed half a dozen different ways a DBase file and timed it with a stop watch. Although we both have the same hard disk type, he only had 512K RAM while I had 738K plus my 900K+ RAM drive. Of course I didn't bring up the subject of RAM drives, the bet was just his computer against mine. Needless to say to experienced computer users, my jr blew the doors off his AT clone. What took him minutes took me seconds.

The fact is that any software that is drive intensive will see this increase with such a large RAM drive. I can fit my whole DBXL package in 900K. If you are using the help files, this will provide instant access. It is simply a matter of choice to unload the overlays and use a large database in RAM drive instead.

Also, try loading QuickBASIC into RAM drive. Just copy all the files that begin with 'Q', then delete QB.EXE. That's right, delete the executable. This will be true of all software. You don't need the actual program that runs in RAM, it is a waste. You will already be loading it into conventional memory when you run it. Suppose your RAM drive is D:. Load all your help files and overlays there. Then call the executable from where ever it is, such as

D:\> C:\QB\QB /g

A better idea is what I do, keep a custom GO.BAT in every subdirectory. Include in the GO.BAT a PATH modification so the subdirectory of your application comes first. If you write a GO.BAT things run better and faster in general since you are probably making better use of most options. Somebody else using the computer has the worlds greatest menu system if you also use **Norton Change Directory** (NCD). You type NCD, move to the subdirectory using the mouse, and then just type GO for any application. My wife greatly appreciates this, and this method has become the dominant menu method where I work. Just a few die hard hackers refuse to give up their AutoMenu screens. Even the few people who use Windows have it set up this way, and sometimes jump out to DOS when they don't have time to fool with the cartoons. On my jr, my Go files load up the RAM drive when they start and unload it when they are done. I do this on all my 3 1/2 inch drive now and often don't even power up the hard drives. A 900K RAM drive will fit a 720K floppy disk. Games are run especially good this way.

My hat is off to John King for getting **DOS 5.0** to run on a PCjr. He is way ahead of me in the bits and bytes of computers. But I'll feel the need to comment about DOS 5.0 anyway. DOS 5.0 is a pain in the silly-con. It is wrecking havoc on computers everywhere. It was suppose to be the DOS that would be one universal release for all IBM compatibles, but turned out to make the computers loaded with it more different from each other than when they were running DOS 3.3 released by a

number of different OEMs. As the dust is now settling, experts are agreeing that the only attribute of DOS 5.0 worth considering is the memory management, which opens up more DOS conventional RAM for LAN users suffering from a serious case of the RAM CRAM. Well I have some news for all us jr users; that a PCjr with a Megaboard has more conventional RAM with reliable DOS 3.3 than DOS 5.0 on a 386 computer could ever hope to have. The jr has much less problems with memory incompatibility too. DOS 5.0 on a 386 has to do a lot of extra steps to emulate more conventional RAM, there is nothing like actually having a larger DOS area to begin with. To those who gave up their jr to buy a clone computer, eat your heart out! I wouldn't let DOS 5.0 anywhere near my jr.

Concerning the **QuickBASIC**, if you have this compiler you may have noticed two things. First is that I use the /g option when I run it. This is something I have always overlooked. The /g option speeds up the display. It works fine on my jr. The Second thing you may have noticed is that I didn't load the compiler part of QuickBASIC in RAM drive when I copied just the files that started with 'Q'. This is quite true, I didn't. You can't have everything in RAM at once. This is true no matter how big your RAM drive is (you can never have a big enough RAM drive). I could have just loaded the compiler if I wanted to do a lot of compiling. Compiling, like working with databases, is disk intensive and goes warp speed in RAM drives. But if you have never used the online help much in QuickBASIC 4.5 because it is too slow, give it a second chance in RAM, it is right there - presto!

One other thing I overlooked for awhile in QuickBASIC is the ability to go to full menus and disabling Syntax Checking. If you do that, you have an all purpose editor that is pretty nice. I use it for learning C language. John Wilson's article on MIX C was very good. I have been a user of **MIX C** for a number of months now. This is an instance where you would not load any of QuickBASIC into RAM drive, but load the MIX C compiler instead. One thing not mentioned so far about the Megaboard is the 738K of conventional RAM. I'll just say this now, that you will have enough RAM to use the QuickBASIC editor to create the ASCII files, then shell to DOS from within the QuickBASIC environment and still have enough memory to compile and run C programs. I don't care if you are using OS/2 on a 486, there is no faster way to task switch between the two.

Two things not yet stressed about the MIX C compiler are that compiled code is as fast as Microsoft C (not designed down to be slow like QuickC even though your using the same editor as QuickBASIC) and that unlike Microsoft C/QuickC or Turbo C/C++, MIX C is designed to teach you ANSI C, not how to use a propietary user interface. Using MIX C is like using a compiler on a mini, which is to say it seems a bit crude without the 1991 bells and whistles, but the book alone is worth the price. Ask professional programmers in large engineering departments about ANSI C versus OOP (C++) or anything else not ANSI C. Borland is now stressing that their Turbo

package is a darn good C compiler, not just an OOP compiler.

Am I wetting your whistle for C language? Good! Now go out and buy a copy of 'The C Programming Language' by Brian W. Kernighan and Dennis M. Ritchie. It is the Holy Book of modern programming. My only regret is I never got it earlier in my career. I love my BASIC, don't get me wrong. BASIC is making a quiet but strong come back. BASIC PDS 7.X combined with MicroHelp, and Cresent Software is being used by a growing number of shareware people. It also compiles for OS/2. But I'll never figure out assembly so I'll need C to complement BASIC. At least for me, C is a lot easier than assembly (so far). But let's not stop here! Can you spell UNIX? Next time I'll tell you more about my favorite new software. If you are considering getting a new computer so you can run UNIX, wait! Oops! My ALARMTLK software that I can now load in my larger conventional RAM is telling me to go to bed. But I have to get just one more paragraph in. I have to tell you about TSOUND.

One required piece of software for all PCjrs is **TSOUND** from PC Enterprises. TSOUND will set up all sound capabilities in you jr. Turn internal speaker off and reset Tandy sound after using the speech card, no problem. Never again do you have to run a Sierra program because your audio channel went out to lunch somewhere and todays favorite program is suppose to have great TANDY sound. Just run this quick little ditty of a program and select how you want things with option switches. My favorite is something I never even heard of before. Turn off the internal speaker but route one voice sound that usually goes there to your external speaker system. This is very handy for late night game playing. The best part is that the software is even better than shareware, because it is FREEWARE! That's my kind of price! I get more computer support from Belmar, NJ than I have ever gotten from Redmond, WA or Armonk, NY and I don't just mean for the PCjr. Thanks Folks!

Joseph F. McLean, Worcester, MA

Facts About PCjr's System Board

According to the IBM Technical Reference Manual, the PCjr system board "supports both read-only memory (ROM) and R/W memory (RAM). It has space for 64K bytes by * bits of ROM. There are two module sockets that accept a 32K byte by 8 bit ROM module.

"ROM is aligned at the top of the 8088's address space. This ROM contains the Power-On Self-Test, cassette-BASIC interpreter, cassette-operating system, I/O drivers, dot patterns for 256 characters in graphics mode, a diskette bootstrap-loader and user-selectable diagnostic-routines."

How to Remove A Disk Drive And Install a V20 Speed Chip

By Albert Allen
President of Oowl Software

EDITOR'S NOTE: The following article is provided by Albert Allen of Oowl Software to those who purchase V20 speedup chips for installation in their PCjrs. Since it provides a clear description of how to remove a disk drive and how to locate and remove your 8088 chip (questions asked by many of our readers), we are reprinting the article for your information.

Many people have called to ask us the advantages of the V20 by 5 mhz. processor over the standard, IBM supplied, 8088 processor. We have used and tested the V20 in the PCjr's here for 3 years with very good results. (The game Loderunner will not run with the V20.)

The many speed measurement programs are just so much rhetoric when in point of fact you really cannot discern the speed increase with your senses. The speed increase with the V20 is really noticed in program sorts, searches and screen updating, or if, for any reason, the old 8088 is reinserted in place of the V20. These speed increases are from 10 to 40 percent.

We have heard of many people claiming to use the V20 by 8 mhz processor, but through numerous experiments the 8 mhz chip never responded with the correct timing function returns and would cause a no boot or system lockup situation.

The V20 installation is straight forward as it directly replaces the 8088 chip. The majority of PCjr's have a socketed 8088, but about 1 in 25 came off of the assembly line with a soldered in 8088. It is wise to check your chip before you make the purchase. The soldered in processor can be changed but it is not a job for the amateur and if you question your skill do not attempt it. To replace a motherboard can cost from $175.00 to $350.00 plus shipping.

Enough said, let's get on with the installation of the V20. First, turn off your junior and UNPLUG THE AC POWER CORD. At the top rear there are three notches, place a small flatblade screwdriver into the notches and pry upward. Remove the top cover completely and sit it aside.

DO NOT TOUCH THE DELICATE DRIVE MECHANISM. At the rear of the disk drive locate the wide gray cable and wiggle the cable connector off of the rear of the disk drive. The other end of this cable is connected to a vertical electronics board located to the left of the disk drive. Remove this controller board and cable as one assembly by pulling it straight up and out and set it aside.

The disk drive is in a plastic mounting bracket. The bracket has two mounting pins or feet at the rear that snap into the bottom of the case. The feet hold the drive in FIRMLY. Being aware of that, carefully grasp beneath the drive bracket, below the drive cable connector and to the right of the fan. Lift the rear edge up sharply. The drive will snap out. Sit the drive assembly outside of the junior with the remaining wires still attached.

The 8088 is located in about the center of the space occupied by the drive. Note that pin 1 of the chip is to the LEFT, the notched end of the V20 is installed to the LEFT. Remove the 8088 by prying it gently from its socket. The method that I use is to place a small flatblade screwdriver under the left end of the chip and turn the blade 90 degrees. This starts one end of the chip upward. Then I grasp the chip with my thumb on one end and forefinger on the other and rock the chip slightly back and forth until it comes out.

The V20 is somewhat sensitive to static shock, when you install it make sure to have your feet off of the carpet. To insert it, start the back 20 pins into the socket first and with some pressure on the chip align the front 20 pins into their holes. Push the chip down into the socket. Patience is the key to getting the chip into the socket.
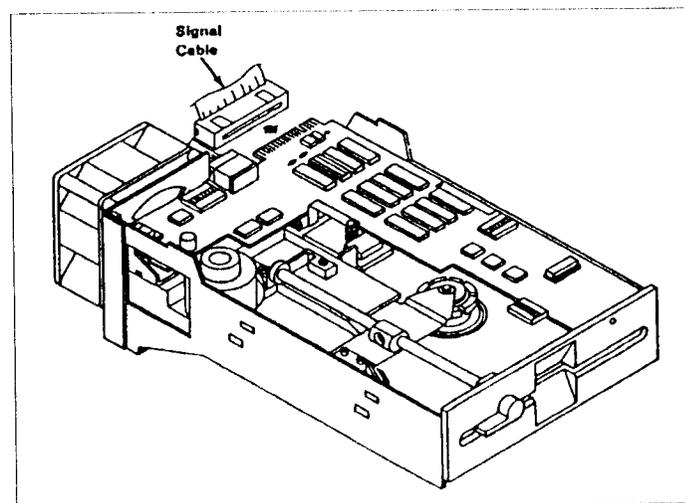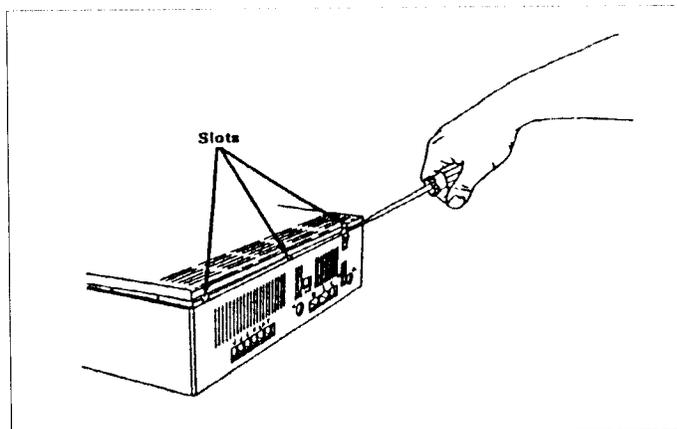
Ok, job well done, now make the quick test. Sit the drive into the junior without snapping in the mounting feet. Plug in the power cord and video cable. Turn on the machine, the IBM LOGO should appear just as before. GREAT, turn the machine off and unplug it again.

Replace the drive, the front goes in first. There is a lip for a tongue and groove fit along the front bottom edge. Lower the rear mounting feet into place. The power cable and fan wires should be to the rear of the left mounting foot. align the feet with their holes and snap the bracket back into the case bottom. Reinstall the disk controller board and attach the wide grey cable to the rear of the drive. Make sure all wires are connected before replacing the top. Remember to take this job slowly and check each step.

Your junior is ready to go back online. If you wish to check speed, try NORTON'S SI program in Norton Utilities package. Happy computing.

Rear Guide
Diskette-Drive Adapter
Diskette-Drive System Slot
Diskette-drive System Connector

Mounting Pins
Mounting Holes
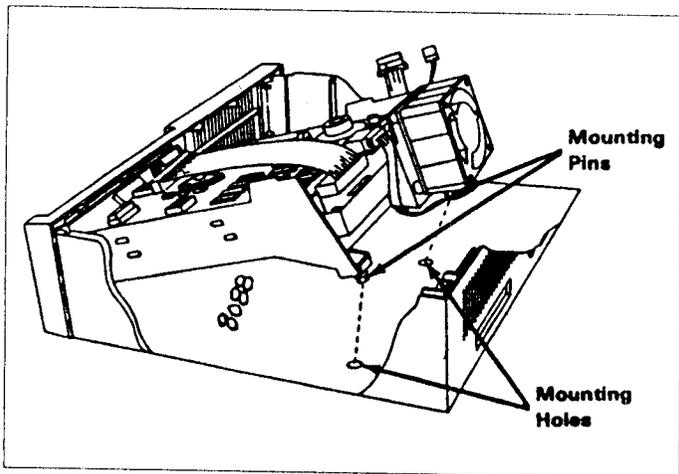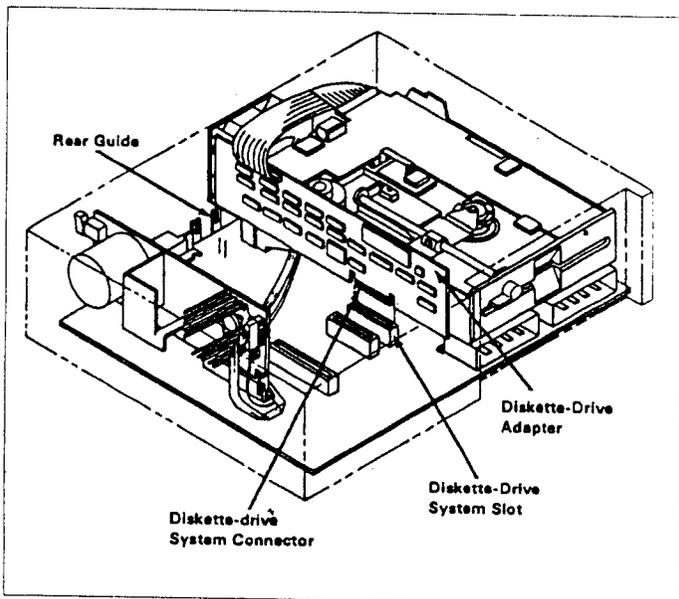
PROCOMM. This powerful, yet easy to use telecommunications program has become the one favored by more PCjr users than any other. Dialing directory, auto redial, XMODEM, Kermit and other file transfer protocols, auto log-on, DOS gateway, keyboard macros, exploding windows and many other features. The editor of PC Magazine called Procomm "competitive with the best comm programs on the market." Manual on disk. 256K (Disk #15)

TELIX V3.12. Powerful, yet easy-to-use telecommunications program, with variety of built-in transfer protocols. Features Z-Modem-- one of the most efficient and reliable transfers available. If you're disconnected while downloading, Z-Modem will pick up where it left off when you next log-on, thus saving connect time and telephone toll charges. Need 180K free memory after loading DOS and either two floppy disks or a floppy disk and a hard drive. (Reviewed 7/91) (Disk Set #4)

Databases

3 X 5. An information management program that works just like a 3 x 5 card file. It offers speed, versatility and simplicity in entering, indexing and retrieving data. Has an integrated word processor, powerful search commands, multiple windows so you can edit in one and search in another, etc. Requires 256K. (Disk #19)

FILE EXPRESS. (V4.22) Very easy to use database manager. Extensive menus and prompts to guide you. Excellent choice for maintaining mailing lists, etc. Many powerful features. 256K (Disks #83 and #84)

MR. LABEL. Extremely versatile, this software enables you to make labels ranging from the very simple to the very sophisticated. It's the best of many we've tried. 128K ok. (Disk #97)

NAMEPAL. An excellent utility program for maintaining and printing name and address lists, address books or mailing labels. Keeps business and personal references and allows user to maintain free-form notes as well. Requires 128K Memory. (Disk #70)

PC-FILE III. This excellent database manager will handle up to 9,999 records, such as names and addresses, notes, product descriptions, etc. Uses generic, embedded, soundex and wildcard searches. Global updates and deletes. Sorts on any field. Too many features to mention. (Disk #3 runs on 128K, Disk #4 needs 256K)

Educational

ARE YOU READY FOR CALCULUS? Excellent review of Algebra and Trigonometry skills you'll need before taking Calculus. Provides help in needed areas. Designed by professor in University of Arizona's Math Department. 128K ok (Reviewed 8/90)(Disk #117)

BIBLE QUIZ. Excellent quiz game tests knowledge of both the Old and New Testaments. Provides answers and biblical references for each question. For one to three players. 128K OK. (Disk #85)

BRAIN BOOSTER. Includes IQ Builder, a program that both teaches and tests your ability to solve number, analogy, synonym and antonym problems like those on IQ and SAT tests. Also includes Algebra and Chemistry programs. For high school and up. 128K (Disk #43)

Dr. Modem Answers Burning Questions

Q. What is terminal emulation?

A. When you run a telecommunications program on your computer, you turn your computer into a terminal of a remote computer. All keyboard input is sent directly to the serial port and transmitted to the remote computer. All serial port input is sent directly to the display screen. When you type a character at your keyboard in full duplex communications, the character is transmitted to the remote computer via the serial port of your computer. The remote computer echoes the character back to your local computer and it is displayed on your screen.

Different types of remote computers require your computer to emulate different terminal types. A Digital Equipment VAX computer will expect your computer to be able to emulate a DEC terminal such as the DEC VT100 terminal or the DEC VT220 terminal. An IBM 3270 will expect your computer to be able to emulate an IBM 3270 terminal. As long as you have software for your computer that can emulate a terminal type that the host computer supports, you will be all set to interact with the host computer.

If you are calling a mini computer or a mainframe computer you will probably have to use a telecommunications program that emulates the terminal type that the mini computer or mainframe computer is expecting to communicate with. If you emulate the wrong terminal type you will either see nothing on your screen or you will see a bunch of garbage characters. Dr. Modem learned this lesson the hard way while attempting to access a Control Data Plato system from a Kaypro II CP/M computer which can't be configured to emulate a Control Data Cyber 110 terminal.

A Teletype terminal or TTY is the lowest common denominator of terminal emulation. A TTY terminal consists of a printer with an attached keyboard. Characters that are typed at the keyboard are transmitted to the remote host. Characters that are received from the remote host are printed out on a roll of paper. A TTY terminal understands two cursor controls codes: the carriage return or CR cursor control code and the line feed or LF cursor control code. A CR code signals the printhead to return to the left margin. A LF code signals the TTY to move the paper up one line so that the next line of characters are typed on fresh paper. Anyone who has ever used a manual typewriter is familiar with the action of a CR LF combination.

There is one significant difference between a mechanical TTY and a computer that is emulating a TTY. A computer that is emulating a TTY has a backspace key which makes it very easy to correct spelling and typing mistakes. The backspace can simply be set to move the cursor to the previous without deleting the previous character. This is also referred to as a non-destructive backspace. The backspace key can also be set to have the function of a delete key so that the previous character is deleted when the cursor is moved to the previous column. This is also referred to as a destructive backspace.

In TTY mode, you can move backwards by using the backspace key and forwards by typing any alphanumeric character or by pressing the space bar. You can also move the cursor to the beginning of a new line by pressing the return key. However, you can't move the cursor back up to the previous line. Thus one of the biggest disadvantages of TTY mode is that you're forced to use line oriented text editors when in TTY mode.

Thus, when your computer is emulating a TTY terminal, you will not be able to use a full screen editor, such as the Opus BBS full screen editor "OPED." If you are emulating a TTY terminal, you will need to use the OPUS BBS line oriented editor: "LORE." If you want to use a full screen editor when you are online, your computer must be able to emulate a terminal type that supports cursor control codes, i.e. vertical cursor repositioning in addition to horizontal cursor repositioning.

A TTY terminal doesn't have support for any graphics characters. You will not be able to interact with a remote host system that uses special video attributes to highlight text or to highlight command menus. If your computer is not emulating a terminal type that has support for a particular form of cursor control, or a particular graphics character set, then you will see

gibberish on your screen when you call a host system that requires support for cursor controls or graphics characters.

The most commonly supported set of cursor control codes are the cursor control codes used by a DEC VT100 terminal. These cursor control codes are also known as the ANSI cursor control codes. Most BBSs support full screen editing when you computer is set for DEC VT100 emulation. The vast majority of general purpose BBSs default to TTY emulation and can easily be configured to support VT100 emulation.

The BBS type that your computer must emulate will be dictated by the host computer system that you are calling. If you are calling a BBS you will probably use either TTY emulation or VT100 emulation. (You may also want to use a telecommunications package that supports IBM graphics. See below.) If you are calling a commercial online service such as Compuserve or Delphi, you will probably use TTY emulation or VT100 emulation. The customer service department of any online service can walk you through the commands that you need to issue to the online service to set a particular terminal type.

If you have to call a mini computer or mainframe computer, you can save yourself a lot of time and aggravation by doing your homework. Pick up the phone and call the gurus in the computer room to find out if your computer must be configured to emulate a particular terminal type. The gurus in the computer room may even be willing to provide you with a licensed copy of the correct terminal emulation package for your computer.

Q.Some of the BBSs that I call ask me if I want to use IBM graphics. What are IBM graphics? Do I have to use an IBM PC if I want to see IBM graphics?
A. IBM graphics are the IBM graphics character set that is supported in all IBM PCs and all MS-DOS machines that are 100% IBM compatible (like the PCjr, in this respect anyway-- Ed.) ASCII text use the binary digits from 0 to 127. The IBM graphics character set uses the binary digits from 128 to 256 to display various graphic characters. IBM graphics are often used on BBSs to create fancy command menus. Some BBS system operators have gone so far as to use different colors for different sets of menu commands. Dr. Modem uses a 9 inch monochrome Macintosh screen and thus misses out on some of the fun of IBM graphics. <grin>

If you have ever tried to use the MS-DOS type command to view a .COM or .EXE file you have seen some of the characters that make up the IBM graphics character set. If you've never done this, try typing:
TYPE COMMAND.COM
when you are logged into the root directory of an MS-DOS machine.

An MS-DOS computer running the Opus BBS software package will ask you if you want to support ANSI cursor control codes and IBM graphics. If you answer yes to these questions, the Opus BBS software will expect your computer to respond

to ANSI cursor control codes and to display the IBM extended graphics character set. If you tell Opus that your computer supports ANSI cursor control codes and IBM graphics, when your computer doesn't support ANSI control codes or IBM graphics, you will see garbage on your screen. This is a sure sign that your computer can't interpret the ANSI codes and the IBM graphics, and you will not be able to view fancy command menus that are displayed in the IBM extended graphics characters set.

If you are using an IBM PC, or 100% IBM compatible, you must add the following line to the CONFIG.SYS file:
DEVICE=DRIVE:\DIRECTORY PATH\ANSI.SYS
where drive is the letter of your boot disk, and the directory path is the path to the directory that contains ANSI.SYS. If you have ANSI.SYS in the root directory of your boot disk, you can simply add the line:
DEVICE=ANSI.SYS
to the CONFIG.SYS file.

Some MS-DOS telecommunications programs provide built in support for IBM graphics to protect naive users from ending up with garbage on their screen. If you are unfamiliar with the steps that you need to take to edit the CONFIG.SYS file, you may want to read the documentation for your telecommunications program to see if it has built-in support for IBM graphics. In general, you must be using an IBM PC or an MS-DOS machine that is 100% IBM compatible in order to view the IBM graphics. Also there are some telecommunications programs for non-IBM compatible machines that have built-in support for IBM graphics. The Macintosh-based communications program ZTerm 0.85 is an example of a program of this type.

*(This article originally appeared
in Online Connection, a publication of the
Boston Computer Society Telecomm Group.)*

Learn Origami By Watching
Your PCjr Do It On Screen!
Origami is a great program -- fun for both kids and adults. Origami is the ancient Japanese art of paper folding, which has been perfected to such a degree that fantastically intricate shapes and amazingly real looking animals and other things can be created just by folding paper!

The Origami software program teaches you how to make these paper wonders -- by giving you a demonstration showing exactly what to do. In a way, it's better than taking a class in Origami because you can review each step of the process before going on to the next step, thus proceeding at your own pace.

Children love to just watch the forms take shape until they recognize what the animal or object being created is going to be. And older children as well as adults can take pleasure in their newly learned ability to create beautiful Origami figures.

Origami is Disk #39 in the jr Newsletter Software Store.

To Program or Not To Program
(Continued from page 1)

now or in the future. This can simplify using the computer and increase our efficiency. If we don't use one of the complex languages, how do we program? What else is there?

First, there are batch files. The batch file commands are part of DOS and described in your DOS manual. This simple language is used to load programs, provide on-screen reminders, and generally automate many repetitious operations.

An AUTOEXEC.BAT file will be run when you turn on your computer. It can contain all the commands you would give to get started. Once written, the commands are processed automatically each time you boot up. Now, that's a real convenience.

I wrote a simple batch file to copy several files for my wordprocessor to a ramdisk. The batch file programs the computer to copy all the necessary files. It never forgets which files to copy, and I don't have to type in every COPY command each time.

A spreadsheet, such as Lotus 123 or Quattro, is really a way to program your computer. Typically, you build a new spreadsheet by first entering a bunch of numbers. This is data entry, not programming. Next, you enter a formula, perhaps to add up the numbers in a range of cells. Now you are programming your computer. If you change one of the numbers, the computer will automatically calculate the new sum. With the wide selection of mathematical operations possible in modern spreadsheets, this is powerful programming.

Wordprocessors don't resemble spreadsheets, but many have their own macro programming language. When you turn on the macro function, the wordprocessor memorizes every keystroke until you tell it to stop. This is keystroke programming. When you run the macro by typing a key combination such as Alt-A, the memorized keystrokes are repeated. If you are writing a letter, macros can type in the date, set the margins, add a greeting, and close the letter with your name and address. As you can see, macros can be real time savers.

Databases are another class of software which allow us to program our computers. Let's take a computerized address book as an example. The entry of names and addresses, the data, into the database is not programming. This is just the raw material for the program to use. However, when you specify a report format you are programming.

One report might list the names and addresses of people outside of California to whom you write because long distance calls are expensive. Another report could provide the names and phone numbers for friends within California. The database program will use the data you entered differently depending upon which report you ask for. When you add new data, it will appear only in the appropriate reports. You have programmed the computer to report the data the way you want it.

Communications programs such as PROCOMM and QMODEM can be used entirely manually, or you can program them. The manual method works fine if the particular computer

bulletin board system (BBS) is simple and you don't call very often. You dial the number and follow the prompts for your name, password, and the BBS area you want to use by typing in each response.

If the BBS is complex, like Compuserve, or if you call frequently, you can write a special file to provide the responses automatically as they are requested. A file which does this is called a script file and is your personal program. Scripts can be simple, just enough to get you signed in, or they can be complex and automate a whole session including file transfers.

A modern salesman might send in his new orders electronically and receive a list of messages and calls to make the next day. A script file could automate the log on and file transfers and make him more efficient. Although this particular example may not apply to you, there may be times when script file programming could make your life easier.

There are many other related examples of programming. Mail merge instructions in a wordprocessor are programming. Programs such as PROKEY and NEWKEY let you build keyboard macros which replay a whole series of keystrokes within any program. I'm sure if you think about it a bit, you'll discover other ways to program your computer for greater effectiveness.

None of the programming illustrated by these examples requires you to learn a complex language such as BASIC or C. The programming is mostly done within an application you have selected for a job you want to do with your computer. Often, the programming is optional, but it greatly increases the usefulness of your computer.

Without a doubt, we all need to learn to program. As a matter of fact, you're probably doing so already.

How To Disable DMA On Racore Units

PCjr users who have Racore expansion units with DMA may want to disable the DMA feature in order to make your unit compatible with a new hard drive (some are not compatible with Racord's DMA) or for some other reason.

Disabling DMA in Racore units is not difficult and it is can be reinstalled later if you want it back. It just takes a little care, particularly when it comes to removing the DMA chip.

According to the Racore Service Department, here are the steps to follow:

1. Carefully remove the U-19 chip (a large 40 pin chip), using a chip puller, if available. (These chips cost about $25 to replace.)

2. Move the jumpers on J-10 and J-13 over one pin to the left. They are currently on the right two pins and should be moved to the left two pins.

3. Install a 150 ohm terminator in the H1 socket near the

top of the board. These terminators are available in most electronic supply stores. Beckman part #899-3-R150 or Epitek part #EM 1407-151G are two types of terminators that will do the job, but there are many others that will also work.

4. Remove the floppy disk drive controller card and cable. Now you will need a $10 Racore cable, Part #5500-1013 to connect your second floppy drive. Or, you can replace the original IBM card and cable that came with your PCjr if you are going to operate with one floppy.

That's all there is to it.

Organize Your Disk Collection
-- Let DiskCat Make A Catalogue

If you are finding it more and more difficult to remember which disk has what on it, you're in dire need of DiskCat, our new Disk #133.

DiskCat does several things that will help you organize your disk collection in an orderly way that will save your time and your self-esteem. Do you hate yourself for letting a dozen or more disks pile up without their directories carefully pasted on their envelopes? Do you slap your head trying to remember which of five disks full of word processing text files has your 1989 letter to the IRS?

DISKCAT TO THE RESCUE!!

No more shoving disk after disk into a drive to see if the file you need is on one of them. With DiskCat you can create one catalogue of all your disks and find any file easily and quickly.

All or part of the catalogue can be sorted by file name, disk, name, file type, date or file extension. Many other useful features help you make sense out of your pile of disks.

DiskCat runs with 128K. To order, please use order form on page 23.

When DISKCOPYing keep RAM Free

The time it takes to copy diskettes, when using the DISKCOPY command will be reduced if you keep your RAM memory free.

When you are DISKCOPYing, DOS transfers data from your source diskette into memory before dumping it to your target diskette. So if your memory is occupied there will be less space for the transfer, and the copying process will take more steps.

Software
(Order form on page 23)

COMPUTER TEACHER. For those who want to learn how to use DOS commands and to understand basic computer hardware terms, this interactive software will help you become computer literate. Helps you better understand those manuals and computer magazines, as well as how to do more with your computer. 128K (Disk #77)

CROSSWORD CREATOR V3.30. Make your own puzzles up to 36 columns by 22 rows. Many helpful sorting and placement features. Prints out on virtually any printer. 256K (Disk #71)

EARLY LEARNING. A collection of colorful educational games for ages 6-8. Sing-along alphabet, letter match, counting game, maze, pattern matching and more. 128K, need Cartridge Basic. (Disk #48)

EQUATOR. An excellent way to learn and review 35 basic equations used in math, finance and science. Learn to compute the volume of a cylinder, compound interest, or average velocity and much more. Manual on disk. 128K (Disk #20)

GAMES FOR EARLY LEARNERS. Young children like Teach Tot's alphabet and counting games. Other activities teach spelling and telling time. For Preschool through grade 3. Cartridge BASIC, 128K. (Disk #63)

HAPPY GAMES. Written by a mother to help her own preschoolers learn on their PCjr, this set of colorful educational games makes learning fun. Teaches colors, shapes, logic, eye-hand skills. 256K and joystick required. (Disk #88)

LANGUAGE TEACHER. Helpful exercises for both French and Spanish language students. Hundreds of vocabulary words and verb conjugations. 128K ok. (Disk #72)

MATH FUN! A great way to get kids learning how to add, subtract, multiply and divide. Includes a program called Math Tutor which has cleverly designed exercises for kids in Grades 1-6. Also Funnels and Buckets, a nifty math game that makes learning math fun. 128K. Need Cartridge BASIC (Disk #42)

PLAY AND LEARN. Educational games for kids 5-12. Word match games, find-a-word puzzles, word scrambles, and many more made by teachers. 128K, need Cartridge Basic. (Disk #32)

SPEED READ. If you'd like to double or triple your reading speed, and increase comprehension as well, Speed Read can help you do it. It provides instruction and exercises designed to break bad habits and improve reading efficiency. 256K (Disk #90)

SPELLING BEE. A game that builds spelling skills from Grade 3 level to adult. You are an Olympic athlete representing your country. Excellent color graphics. Four skill levels from very easy to very difficult words. Fun way to become a spelling champ! 256K ok (Disk #82)

STUDY AIDS. Three great programs to help students. PHLASH - a computerized version of flashcards which you make and use for any subject. Multiple choice, true/false, and/or fill in blanks. FRACTIONS - a series of interactive exercises in fractions (many levels). And PHRASE - a program that picks out examples of bad writing in any document and suggests improvements. 128K ok (Disk #92)

Questions and Answers

(Continued from page 4)

begins to flow immediately. There is not enough to reduce the supply voltage, however. As the filament heats up it physically expands a considerable amount, and this is what causes the damage. The current flow causes heating and this heating causes an increase in resistance to current flow, so we (finally) reach stability with a hot filament and low-flowing current.

Q. Why don't I see any problem with my COM1 and COM2 serial ports even though I have a modem with Procomm addressed as COM1 and my mouse addressed as COM2 on the same external serial port. This is with a selector switch of course, and I never use SWAPCOM, which is supposed to be such a big deal! D. W. Hase, Tacoma WA

A. The modem is external, which means that the serial port has the correct COM2 address and the IRQ number because there is NO internal modem. The numbers change when the modem is plugged in; see the PCJr Tech. Ref. Manual for this. The mouse software will SEARCH for access to whatever port address the mouse is physically connected to and set itself up for that IRQ and address line. See your mouse manual about this feature. SWAPCOM (which is on JR POWERPACK, Disk #52) isn't needed in your instance, though it would set up the IRQ, addresses and port access so a search would not be needed by the mouse software, or any other serial software, for that matter. Early versions of serial port software did not do this search and some recent stuff still doesn't, so SWAPCOM is the cure of choice. It is the only way to get the IRQ and COM2 addresses correct in some instances, when an internal modem is in the slot. My external modem w/ Procomm absolutely refused to work without SWAPCOM. There is a second disk drive card plugged into the internal modem slot and it might be the culprit. I don't even care what does it; SWAPCOM solves the problem. When we switch over to our mouse on the same serial port, it works fine, too.

Q. I would like to know how to connect up and or signal external motors, TV, lights, solenoids etc. using the serial or even the parallel port to operate them by remote control. It would be great if the programming could be done in BASIC as well. Can this be done? D. Ellis, Lombard, IL

A. The programming in BASIC would be no problem, especially if one wanted to use QBasic or QuickBASIC as they are so much more flexible and speedy. The connections would probably be a bit tough for the average user because both of the ports do not have the power necessary to drive anything larger than a few transistors! This means some kind of interface to use, as you mention, transistor driven solenoids and a separate power supply for the solenoids (relays) and the motors, TV, etc.

There are suppliers of such all-in-one adapter boards, special motors, and attachments etc. They can be found in the Computer Shopper or on the last few pages of BYTE Magazine, the hacker's delight. These are industrial suppliers in both publications but they do have small systems available. Please be seated when reading the prices for the completed set-ups. If you choose to make your own arrangement, the same folks will supply the parts. They also seem to indicate that some form of BASIC interpreter is included or available to allow you to get these things up and running.

For a start, try JDR Microdevices at 1-800-538-5000 for information or a catalogue, but be sure to tell them your area of interest. Another Company is B&G Micro at 1-214-271-5546. While you're at it ask about the $25.00 networking system they are offering. We don't know if it works on a jr but it is a kit of software and parallel cable connection, so it just might work.

Q. I would like to know how to trap and or read the data, both control and information going through my serial port. Is it possible do this and store it for later retrieval and analysis? G. Ginter, Collinsville, VA

A. Yup. Call B&G Micro (see prev. ans. for phone number), they have a program and special test cables for doing exactly what you want. The program is $10.00 and plug/cables are $10.00 each. You must specify 9 or 25 pin for the plug. If you want, you can make the test plug & cable yourself, as the schematics and full data are supplied with and included in the price of the software program!

Q. Do you have any information about net-working the jr? What about the cluster attachment? It seems to me the jr is ideal as a networker if a decent connection can be made to a server. P. F. Metzger Jonesboro, GA

A. Were still waiting for information (from you, dear readers) about the success or not of either networking or file-serving. Our own experience has only been with Lap Link and it was so dreadfully slow at any baud rate we gave up on it almost immediately. Our test was with a faulty parallel cable so we could only use the serial port so maybe that was the problem. It was like being on line via phone hook-up to a BBS. Oh sure, it worked on the jr with complete compatibility but is out of the question for fast file transfer. We can't vouch for the compatibility using the parallel port. See the problems with Backpack using the parallel port in Jr Newsletter, April, page 6.

Q. Can I attach a standard PC Koala Pad, joystick etc., to my jr? How would I do this? Various readers...

A. Yes. Here's how the jr part of it goes so you can work it out:

You should have a multi-meter or an ohmmeter and if you're serious about it, a soldering pencil.

Looking into either joystick port at the rear of the jr, the labels read from RIGHT to LEFT, TOP to BOTTOM. They are:

A1 to A4 on top and B1 to B4 on the bottom. Both stick ports are identical.

The port plug connections for Koala Pads and joysticks are the same. Use the crude drawings below to determine the wiring.

+ = connection

* * * = variable resistance

-> = wiper, brush

-><- = switch

NC = No Connection

```
                        *
B2 (X Resis.)+->*
                        *

                        |
A4 (5 v. out)+

                        |
                        *
A3 (Y Resis.)+->*
                        *
```
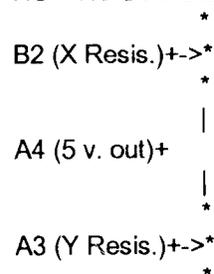
B1 (Shield Ground)-NC

Use the Ohmmeter on the plug of the Standard PC Koala Pad or joystick to find and label these connections. Make a drawing on a piece of paper from a brown bag, if you have to, but get it recorded! It seems like a trial and error operation, but be systematic in testing the plug connections and you'll soon have them. Move the stick in each direction to locate each resistance and on the Koala Pad, start in the upper left corner for both X and Y readings, going EITHER across the top or down the left side to test. Remember X is across and Y is up or down. Zero to 100 K (ohms) is about the right figure for the sticks and nearly double that on the Koala Pad. The labels and wiring connections to the two fire-buttons or switches are shown below:

```
B4 (Sw. #1)><+
             |
A2 (Logic Ground)+
             |
B3 (Sw. #2)><+
```
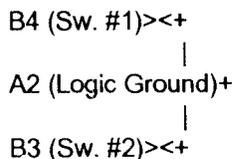
An alternate way to figure out these connections would be to carefully take the devices apart and physically check out the wire colors at the internal connections. I'd still check with a meter, though...

The plug kit parts should be available from:
AMP Inc. Harrisburg, PA 17105. Call (717) 564-0100 and ask for 8 pin Plug part # 102704-2, House & contacts & cover kit and part # 103125-4, Shield kit. Cost estimate is $4.00 plus shipping.

Now that you are all ready to get going on this exciting project you might also wish to know that you might first call Kraft Systems Inc. 450 West California Ave. P.O. Box 1268, Vista, CA 92083 (619) 724-7146 and for $9.95 plus shipping buy a convert PC joystick to PCJR use adapter cable. This adapter cable will also adapt the PC Koala Pad to PCJR use! Here, before you seriously consider mayhem on the Q&A columnist, just think of all you've learned. Now, by knowing the wiring system of the Koala Pad and sticks, you can do a little trouble-shooting if you find something not working correctly at some later date!

For those of you who wish to convert in the opposite direction, the purchase of this adapter (with the use of the above drawings) will allow the proper cross-referencing of the necessary wiring to a standard PC or clone. They use a 15 - pin D shell connector like the one so familiar as a standard serial port plug. Look at the back of a modem or at the jrs adapter cable for serial devices to see one.

While we are on this subject of the jr's game port you should know that you can use it to read both digital and analog inputs.

One example (digital) would be a kind of burglar alarm. Connect a hidden door switches across A2 - B3 and A2 - B4 and with a BASIC program you could monitor these switches to be sure they remained closed or open as you chose. Another example (analog) would be to connect a temperature sensitive resistor to B2 and A4, then read this using a simple BASIC program, print a computed value based on the X or Y input and you'd have an on-screen thermometer. Of course in this case you'd have to calibrate it, but that's half the fun... Dream up some of your own ideas, the Jr can handle them all!
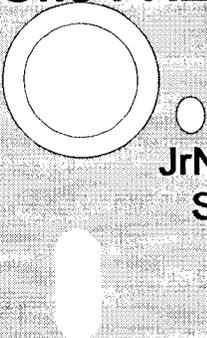
Managing Pesky TSR's

By Ray Stroud

Last month, we studied a little bit about the fun, exciting and challenging world of Terminate and Stay Resident programs (TSRs). Well, it is not always fun and games.

There can often be conflicts with TSRs and other TSRs as well as battles between application programs and TSRs to determine which one will be in control. For example, the order in which these programs are loaded in the autoexec.bat file can be essential in determining if some of all of them will work when called upon to do so. If this happens, the user simply must play around with the autoexec.bat file and re-arrange the sequence of TSRs. This can solve the problem, but not always.

By the process of elimination, you can determine which TSR is the culprit. And it may be necessary to eliminate that program from your autoexec.bat file or find a substitute TSR of the same type.

Sometimes you can be in an application program and enter a hot-key combination, say to mark a block or call up a help screen, and instead one of your TSRs will appear. That TSR program is activated by the same combination of keys in the application program. If that is the case, you have three choices: (1) Do not use that application program, (2) do not use the TSR or (3) change the hot key combination to one that will not conflict with your main program.

This latter suggestion is not always possible. Some programmers include the means of making these changes by including in their documentation, codes for altering the Shift, Mask and Keyboard Scan Codes.

Another type of problem that might arise is that perhaps you have used your computer for weeks with many TSRs and have not experienced any trouble. Then one day you activate your communications program and access a bulletin board.

Everything goes fine. You can move around the bulletin board freely, but when you begin to download a file, your system crashes. Later, you discover you can upload, but not download. Well, the problem may be one of the memory resident programs that is causing the conflict.

The solution is to eliminate all TSRs from the autoexec.bat file, then load them one by one and re-activate the autoexec file until you finds the culprit. This happened to me.

Sometimes, these conflicts can be serious enough to lock-up the computer. This could be serious if you are in the middle of a long and important text that has not been saved.

One of the worst offenders are memory resident clocks. The reason is that for the clock to work, DOS intercepts the timer tick which is Interrupt 8h. Interrupt 8h occurs 18 times a second and this can play havoc with some programs.

TSRs Attached to Dos

Let's try to understand a little bit about what happens when TSRs are loaded. There are two essential concepts: (1) DOS loads a TSR in the first memory block available to it over its own position in memory. This then extends DOS and in a sense becomes part of it. (2) after having been loaded and "attached" to DOS, control is returned to DOS.

If there is more than one TSR loaded during the action of the autoexec.bat file, the TSRs are stacked. Each one is hooked to the next one in memory. This leads to the process known as "daisy-chain." What happens is this: If several TSRs are stacked, the last one loaded gets the first chance to intercept the hot-key. Remember all the TSRs are scanning the keyboard.

If the last program loaded does not recognize the hot-key, it passes control to the next to the last TSR that was loaded. In other words, all of the TSRs are chained together. This operation of testing, then passing on the hot-key command continues through the stack until the correct memory resident program recognizes it and takes over control of the computer.

Further complicating this picture is that some programs insist on being loaded last. Now you know why. It is to get first chance at the keyboard scan and take control. However, the worst complicating factors are the application programs that take complete control of the keyboard and do not give the TSRs a chance to be reached--XyWrite and WordVision are two such programs; although, newer versions give the user the choice of total or partial keyboard control.

Total control of the keyboard is accomplished by taking Interrupt 9h as the program's own. This can add to the confusion, depending on the TSR program and in what sequence it was loaded. For XyWrite could take over complete control of the keyboard during its operation, but if a hot-key was pressed while using XyWrite, after exiting that program, the TSR might take over or lock up the computer.

When a hot-key activates a TSR, that program then pops onto the screen somewhere. Usually these appearances take the form of a window; although they can fill the entire screen. When this happens, the TSR must save the portion of the screen it eliminated for its own use. Later, when the TSR terminates, it re-loads the screen in the way it found it. This can be particularly trying when a TSR is called and the screen is filled with graphics. In the first place, graphic characters require 4 to 7 times more data than text characters. Other factors involved with graphics add to the difficulty of using pop-ups with graphic programs.

Memory resident programs do not have to be loaded from the autoexec.bat file. These programs can be loaded at any time when an application is not running, then called for when needed. However, the same type conflicts can haunt these programs as those just discussed that were loaded at start-up.

It's Not Only AS EASY AS.....

If you need a powerful, easy-to-use spreadsheet that works just like you know what Lotus software, you need the shareware program As Easy As (Disk #86 in the jr Newsletter Software Store). It's not only "as easy as", it's just about as good as. And you can try it for $5.95!

Your PCjr Can Help You Stay On Your Diet!

Our new Disk #134, a software program called "Bite By Byte" (get it?), helps make meal planning, calorie counting, and dieting almost fun.

Here's what Jonathan Mark, the author, says about it in his introduction to the software:

Ted. The Eternal Dieter. It is estimated that 80 percent of those who lose weight will regain it, often exceeding the weight at which they began their diet. They share the frustrating experience of a seemingly endless roller-coaster ride of weight loss and weight- gain. Fortunately, this cycle can be broken without the deprivation associated with many common diets.'

This document and program outline the concepts and methods by which I lost 50 pounds in just 7 months. In addition, my waistline was dramatically reduced from a size 42 to a 34!

The program will calculate your caloric plan based on your weight, age, sex and other factors. You can design your menu right on the screen with the option of printing it out. This is easily done within a matter of minutes, making ownership of the program worthwhile even for people who do not own a PC but have access to one.

The simplicity and effectiveness of Structured Eating is truly amazing. You lose and/or maintain your weight by eating food you truly enjoy in a modified quantity. As a result, Structured Eating presents a practical sensible and appetizing approach to weight control for the rest of your life.

Psychological Satisfaction

The importance of psychological satisfaction in the eating process cannot be overstated. Mere physical satiety is not enough. Although 2 pounds of cottage cheese is physically filling, it is not 'satisfying'. The first principle of the Structured Eating Program is to design your menu from foods which are pleasing to you. This includes the taste, smell, texture, and the appearance of the meal. Even the auditory sense contributes to the enjoyment of the repast. Whether it be the sizzle of a steak, the popping of a champagne cork, or just plain old snap, crackle, and pop, none of the senses should be ignored or forsaken in order to lose weight. 'Diet Food', i.e., any food which produces within you a sense of deprivation should be shunned. Only those foods which you truly enjoy should be incorporated into your Structured Eating Program.

"Now hold on a minute!", you might retort. "How do you think I became fat in the first place? It certainly wasn't from eating tuna fish packed in water! How can I lose weight while still eating my favorite foods?!" The answer is that you did not become fat by eating food which you like, rather you became fat by eating too much of the food you like. The solution is the golden mean; moderation. The key to moderation is being

conscious of..........

The Caloric Reality

Face facts. The caloric reality is the bottom line when it comes to the realization and maintenance of your ideal weight. The stats are quite simple. One pound of body fat represents 3500 calories in storage. Imagine, just an extra 100 calories a day will amount to a gain of more than 10 pounds a year! An egg, a glass of juice, even a tablespoon of peanut-butter are all close to 100 calories. Now the good news:

1. A caloric deficit of only 500 calories a day will result in a loss of one pound a week.

2. Since you will be eating food which you enjoy, there will be no frustration or resentment caused by the program. Once you reach the goal weight, you will feel no need to 'make up for lost time', making it easy to maintain your weight.

3. A 500 calorie deficit only requires a slight modification of your normal fare and will not cause undue havoc or stress in your daily routine.

4. One pound a week is a safe, moderate, nutritious and realistic goal to shoot for.

5. Time flies and before you know it you will have reached your ideal weight without deprivation. More importantly, since the modification is to foods with which you are familiar and which you like, it will be easy to maintain your weight. Neither

Your PCjr Can Help Your Diet!

(Continued from page 17)

pizza or ice cream will be a test. You will already know how to deal with them as they have been on your menu from the very beginning. Now I'm not saying that you don't need willpower. Of course you do. But it doesn't have to infringe on the pleasures of eating. Grilled cheese might be your daily breakfast and you exercise your willpower by eating one grilled cheese and not two. Look how much easier that is than drinking a 300 calorie shake twice a day for two weeks, losing 10 pounds and then having to deal with the real world of solid food again. You can lose that 10 pounds in 6 weeks, while having thoroughly enjoyable meals every day. As you lose weight you will gain willpower, thereby enhancing you self-image, confidence, and pride of achievement.

6.   The beauty of structured eating is that pleasurable weight loss is an absolute guarantee. As long as you build up a caloric deficit your body must burn fat to supply the missing fuel.

Bite By Byte (Disk #134) runs in 16 colors on PCjrs and requires 256K. To order, please use form on page 23.

Professor DOS

(Continued from page 2)

another RAM resident program for example).

That wasn't so hard, was it? We'll get a bit more complicated now. Enter the command "CHKDSK/V" and hit <Enter>. This time the display looked a little different. If the diskette had a VOLUME NAME (a LABEL) it was displayed along with the date and time of creation. Notice that all the files scrolled up the screen? The /V option does a couple of things:

-it tell us the name of the disk (if there is one)

-it shows the filenames on the disk (the hidden files too)

-it tell us how many hidden files there are (this will give us 6 lines of information instead of five)

A brief note on hidden files: The volume name and the IBMBIOS and IBMDOS files are hidden files. If you change a file's attributes, it can also be made a hidden file.

If the display scrolls by too fast while you are tring to read the files, hit <CONTROL>-<NUM LOCK> and that will temporarily stop the display. Hit any key to continue scrolling.

I'll now cover the remaining options, starting with the /F option. If you type "CHKDSK/F" and hit <Enter>, the command will look for any lost clusters of data to recover. This is the CORRECT option. If none are found, the resulting messages will look no different from CHKDSK alone. If lost cluster(s) are found, the computer will ask you if you want the corrections written to disk. If you answer yes, the data will be placed in the root directory under the filename of FILExxxx.CHK (where xxxx is a number from 0001 to 9999. By using an editor (QDOS, E88, or a word processor that saves its files in pure ASCII format, like PC-Write) you can view the data and rename it, or delete it if it is garbage.

The final option is an interesting one. By specifying a filename or *.* after the chkdsk command, you can check for fragmentation. In easier terms, you can see if the files are are all in one piece, or scattered all over the diskette. If a file is fragmented, it takes the computer longer to read the file, as the heads have to go up and down and around to find all the data. If the file you named is split up all around the diskette, the chkdsk command will tell you. You can then use an optimizer program to un-fragment your disk and improve performance. If you use *.* behind the chkdsk command, it will check all the files on the diskette for continuity, called also contiguous areas in some computer books.

That's all for this month's column. Try the different options and explore.

(This article was originally published in the Atlanta PCjr User Group newsletter.)

PROCOMM Bug

PROCOMM is an excellent communications program. The Host Mode feature allows you to turn your computer into a mini-BBS, so friends can upload or download files easily. However, Host Mode in PROCOMM 2.4.2 (Disk #15) has a bug which can lock up your PCjr. This has been fixed in version 2.4.3 and PROCOMM PLUS TD (Disk #108)

ANSI.SYS - What Is It For?

No computer should be turned on without having ANSI.SYS loaded from your CONFIG.SYS file. You can find the program ANSI.SYS on your DOS disk. When ANSI.SYS is installed , it acts like a watchdog that monitors everything routed to the video display.

ANSI.SYS watches for combinations of characters called escape sequences. This term derives from the fact that they always begin with the Escape character - the character generated when you press the Esc key. Following the Escape character in the escape sequence is a left bracket ([). When ANSI.SYS notices this particular combination of characters, it considers what follows to be a command to perform some action.

Among other things, there's a command to change the default screen colors. Therefore, to change screen colors, all you need to do is send the correct escape sequence to the screen. You can't do this at the DOS prompt by pressing Esc and then typing the rest of the sequence. (If you press Esc, you'll merely see the cursor drop down a line.) DOS must be tricked into accepting the Escape character, and one trick is to use the DOS PROMPT command.

Another is to use the DOS TYPE command to print a file that contains the escape sequences on the screen. Here's how to do both.

The PROMPT command is ordinarily used to change the familiar DOS prompt to something different, but it can be used to Enter the escape character too. This is represented in the PROMPT command by the characters $e. (Note that the (e) is always lowercase.) For instance, enter the following command at the DOS prompt to change the default character to blue: PROMPT $e[34m When you press the Enter key, you'll notice the prompt appears in the new color. If you clear the screen with the CLS command, any new text displayed afterward is blue. You'll also notice that the familiar DOS prompt has disappeared. You can restore it by entering PROMPT. Note that nothing is appended to this command. You'll always need to perform this step when you use the PROMPT command to set colors.

You can similarly set the background color to white with the command (PROMPT $e[47m). Or you can combine the two commands and set both the text and background colors at once: (PROMPT $e[34m$e[47m)   Notice that in these examples, the sequence ends with a lowercase (m), which is another part of the code. The (m) like the (e), must always be entered in lowercase. To use the TYPE command to send escape sequences, you must have a word processor or text editor that allows you to enter the Escape character. (The DOS program EDLIN is one of these) Many text editors display a left arrow (<-) to show an escape character, but this isn't always the case. EDLIN, for instance shows it as ^V. If your text editor

Software

THE WORLD V.2.6. Fascinating way to see the world on your PCjr! Just use the pointer to move over full screen map of world and press Enter to zoom in on any region, country or city. Many features. Even shows you hurricane tracks by year. 256K Reviewed 2/90 (Disk #105)

TIME TRAVEL IN HISTORY. A maze adventure game in which you have to answer questions about different periods of American History in order to get gold pieces--and save your life! 128K (Disk #21)

TYPING INSTRUCTOR. Disk contains both PC-Touch, a great typing exercise and speed testing program, and Touch Typing Tutor, a combination of lessons, including finger positions, speed tests and a typing game. 128K ok. (Disk #18)

WIZQUIZ. The Wizard keeps track of your progress in solving math problems that range from elementary level through fractions and negative numbers. Extensive exercises, with scores and times recorded under each "player's" name. Compete against your personal best as you improve your skills. Grades 4 through adult. 128K ok. (Disk #95)

WORD PROCESSING FOR KIDS. Simple, fun and easy-to-use word processor designed especially for beginning writers. Allows children to express their ideas easily and then print them out in large type on your printer. Colorful opening menus make learning the simple commands very easy. Parents/teachers manual is on the disk. 128K. (Disk #41)

WORDCRAZE. Create your own word search puzzles and print them out for friends and family. Just make the list of words you want in the puzzle and it's printed out for you. Or try Quotefall, a unique type of scrambled word puzzle. And then there's a high-level version of Hangman. Just try escaping from the noose in this one! 256K (Update review 8/90) (Disk #87)

WORD GALLERY. Help your child learn to read with this colorful program that presents pictures and words to match. It's fun to use, has four levels, the last with a missing letter for the child to fill in for beginning spelling. 256K (Reviewed 4/91) (Disk #125).

MATH & LOGIC GAMES. Designed for kids in Grades K-6, but fun for kids of all ages. Six different games can be played against the computer, or with another human. Each game teaches a different logic and/or math skill. (Reviewed 5/91) 256K required. (Disk #126)

Games

ADVENTUREWARE. Six different text adventures with titles like "Island of Mystery," "Terror in the Ice Caverns," and "Moon Mountain Adventure," all test your wits and take you to strange mysterious places. 128K (disk #14)

ARCADE GAMES. Includes Kong, Pango, PC-Golf, Pyramid and other exciting, colorful games for hours of fun. 128K. (Disk #30)

BOARD GAMES. Eleven different games on one disk! Hours of fun with Monopoly, Yahtzee, Cribbage, Backgammon, Othello, and others. All run great on your PCjr! 128K. Need Cartridge BASIC (Disk #31)

BUSHIDO. Test your skills in martial arts combat. Fighters kick, spin, duck, punch, etc. Requires 256K and keyboard with function keys (Disk #16)

CASTAWAY/S. AMERICAN TREK. Test your survival skills as the survivor of a shipwreck in the South Pacific. Or as an explorer of South America. Two novice text adventures from Jim Button. Ages 12 and up. 128K. (Disk #53)

COMPUTER JOKER. Disk full of jokes, wisdom, and visual tricks to play on your computing friends. 128K ok (Disk #64)

DOUBLE TROUBLE. Two of the most challenging, highest quality arcade style games we've seen -- Amazing Mazes and Willy the Worm. Ten different mazes and five levels of play will tie your brain in knots. And Willy, who is the fastest, jumpingest worm you'll ever see, will beat you for sure! You can even modify Willy to give yourself more (or less) trouble. 128K ok. (Disk #68)

DUNGEONS & WARS. In Dungeon Quest you can choose to be a dwarf, elf, magic-user, fighter or other type of character. You select your strengths and weapons, too. Then you enter the dangerous dungeons on your Quest. Thermonuclear War pits the US vs. the Soviets in a very real demonstration of what a nuclear war might be like. Combat is a strategic battle on the ground. 128K ok. (Disk #9)

DUOTRIS. Two great Tetris-like games on one disk. Similar to the popular Russian strategy game, both of the versions add new twists of their own. Written in Turbo Pascal, both are high quality games. 128K ok (Reviewed 8/90) (Disk #116)

GALAXY. One of the easiest to use word processors we've ever seen, Galaxy has all the features you need to write letters and do most word processing. It has many, but not all, advanced features. Its strength is its simplicity, with help menus always ready to assist you. You probably won't even have to read the manual. 128K ok. (Disk #69)

GAMES I. An assortment of games for hours of fun and excitement. Includes Spacewar, Airtrax, Life, Wumpus, Wizard and more. All good with 128K. Need Cartridge BASIC (Disk #8)

GAMES II. A wild bunch of games to test your wits and skills. Includes Slither, Xwing, Torpedo, ABM2 and Overeact, where you are in charge of a nuclear plant. 128K. Need Cartridge BASIC (Disk #34)

GAMES III. Kingdom of Kroz, an award-winning arcade action game. Go-Moku, a challenging Japanese strategy game, also known as Pente. Zigsaw, the first really good on screen simulation of a jigsaw puzzle. All three on one disk. 256K Reviewed 12/89 (Disk #101)

GAMES IV. Turbo-Car tests your skills at driving a fast car on a two lane highway. Can you keep from crashing? Return to Kroz is a colorful, exciting arcade-strategy sequel to Kingdom of Kroz on Games III. Trek Trivia tests and expands your knowledge of Star Trek. Three great games on one disk! 256K Reviewed 2/90 (Disk #106)

ANSI.SYS - What Is It For?

doesn't print some kind of character on the screen when you press Esc, it probably won't enter the character. Let's assume you can at least use EDLIN to enter the Escape character. After entering it, type the left bracket and the rest of the sequence as shown above. Save the sequence on disk. Then, at the DOS prompt, enter TYPE filename. Substitute the name of your file for filename. When you type this file, ANSI.SYS recognizes and acts upon the escape sequence. You can have more than one escape sequence in a file. Enter them on separate lines, each line ended with a carriage return. The following examples sets the text color to red and the background to white: <Esc>[31m <Esc>[47m where <Esc> represents the Escape character entered with your text editor. Another way to include more than one command in a file is to combine the number codes, separating them by a semicolon: <Esc>[31;47m   In this version, the Escape-left bracket combination is entered only once at the beginning of the sequence, as is the concluding m. You'll notice that when you TYPE the file, the escape sequence itself can't be seen on the screen. That's because watchdog ANSI.SYS removes its own commands from the flow to the screen before you can see them. In fact, a good way to determine whether ANSI.SYS is properly installed is to TYPE a file containing escape sequences. If you can see the codes on the screen, then ANSI.SYS isn't on board. You'll save time if you include either the PROMPT or TYPE command in your AUTOEXEC.BAT file. Be sure that both ANSI.SYS and AUTOEXEC.BAT are on the boot disk. The following is a table of foreground and background colors and their number codes. The general escape sequence formula is <Esc>[numbercode m (but without spaces between the characters).

Color	Foreground	Background Black
30	40	Red
31	41	Green
32	42	Yellow
33	43	Blue
34	44	Magenta
35	45	Cyan
36	46	White
37	47	

ANSI.SYS is capable of much more than setting default screen colors. Unfortunately, the DOS manuals supplied with most computers contain very little information about its capabilities.

(The above article was originally published by The OKC Jr Orphans Chronicle.)

PCjr - 640K (Tecmar), PCjr Color Display, 2 360K floppies, NEC V20, 2 jr keyboards w/ cable, cartridge BASIC, speedup cartridge, Tech Ref and all original manuals, DOS 2.1. Misc. games for kids, Kings Quest, shareware, etc. Only $500! Call Howard in Columbia, MD (301) 596-7125.

IBM PCjr - 640K, two 5 1/4 drives, color monitor, clock, parallel printer sidecar, BASIC cartridge, kbd adapt, joystick, manuals, software, PCjr magazines. $375 + ship. Bob Jones, (614) 772-3818 work, (614) 871-7550 home.

IBM PCjr - 256K, 5 1/4 floppy drive, internal modem, monitor, 2 keyboards (chicklet & regular), DOS 2.1, EasyWriter 1.1, cartridge BASIC, Manuals (includes Tech Ref), $450 + shipping. Pam Klenke (612) 345-5252, R. 1 Box 164A, Lake City, MN 55041.

SALE: PCjr. 640K Hotshot, 2nd drive, Star NLQ printer, all interfaces, joysticks, library of software, back issues Newsletter, ribbons, paper, covers, etc. Best Offer. Call (201) 947-2463 anytime.

PCjr - 640K, 20 meg hard drive (bootable), PC Enterprises speedup card, 150 watt power supply, 2 IBM joysticks, cartridge BASIC, parallel printer port, DOS 2.1, Filing Assistant, King's Quest, Flight Simulator, more, all manuals, $550 or best offer. Will pack/ship UPS; Bob (713) 360-2854

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Classified Ads are $12 per month. Send us your typewritten ad (no more than five lines on an 8 1/2 x 11 typed page). Send to Jr.Newsletter, Box 163, Southbury, CT 06488.

Ads received by the 10th of the month will be printed in the following month's issue.

The "Did You Know This?" Dept.

The early model of the IBM PC, sold in 1981, had 48K of Random Access Memory, came with a single disk drive, and cost over $2,000. That was without the display.

Software
(Order form on page 23)

GOLF/SAILING. Two great games! The golf game has three courses, user definable club ranges and a swing control that determines whether you hit a slice, hook or straight shot. Three nine hole courses (Novice, Pro, and Sadistic). In the other game, you try to sail the three legs of the Bermuda Triangle avoiding, if you can, the creeping mists, alien crystals, vortexes and storms. Your boat is equipped with radar, rudder and sail (all of which you control) and an engine for emergencies. 128K ok for sailing. Need 256K for golf. (Disk #47)

MEAN 18 GOLF COURSES. Three excellently designed courses for those who play "Mean 18," the commercial golf game. Disk #79 has Boca Woods North, Boca Woods South, both with especially challenging water holes, and Kearsage Valley, with fall foliage in full color. Disk #80 has TPC of Avenel, TPC of Sawgrass, with massive sand traps and a tough 17th green on an island, and TPC of Woodlands, which may be the most challenging of all. (Disk #79 and #80)

PC-CHESS. Two great chess games on one disk! A full-color, many featured chess program with four levels of play, allows such things as switching sides, setting up the board yourself, validity checking, en passant, etc. The other works on color or monochrome, has window showing options it considers before moving, adjustable difficulty level -- but a powerful opponent at any level. 128K ok for one, 256K for other. (Disk #44)

PHRASE CRAZE. Based on the TV show Wheel of Fortune, you get to be the guest who guesses the mystery phrases and wins piles of money! The wheel spins to select the amount of money you win for correct guesses. It gets harder with each round you play. You can add your own phrases to this game or try to guess the ones provided on the disk. Lot of fun for adults as well as older kids. 128K. (Disk #46)

PINBALL RALLY. A colorful collection of amazingly realistic pinball games. Using the Shift keys as flippers, the games get more and more complex until you get to Twilight Zone, the hardest one of all. Runs on 128K. (Disk #10)

PLAYER'S CHOICE. Six different card games, some easy, some hard, but all excellent. Youngsters can have fun playing Memory or Even-Out, which are quite easy to master. Blackjack is hard to beat, and Poker, which has the ability to modify its play in response to your methods, is a real challenge. Also two fine versions of Solitaire, one with great graphics. Some need 256K. (Disk #78)

BRIDGE PLUS. Play Contract Bridge Or Mahjong. Realistic bridge practice in bidding and playing against the computer. Good way to practice the game, but need some knowledge of the game or a rule book. Mahjong rules are included on the disk. Requires 256K Reviewed 9/91 (Disk #131)

REFLEX POINT. Patterned on the TV show Robotech, this game follows the show's storyline, with the Freedom Fighters trying to reach the Reflex Point and destroy the evil Invid Prince. 128K ok. (Disk #12)

SCRABBLE. At last, an excellent Scrabble game that runs in 16 colors on PCjrs! Plays just like the board game. Expandable dictionary checks words. Keeps track of all premium score squares and scores for up to four players. Also contains WORDWHIZ, a nice vocabulary building game. 256K (Reviewed 5/90) (Disk #113)

Need Help?

The following disks from the jr Newsletter Software Store can help you to get the most out of your junior. To order, see the coupon on page 23.

PCJR AUTOSETUP. A beginner's dream: Just select from a menu to make separate boot disks especially for each type of software you use. Automatically creates the right config.sys and autoexec.bat files for RAM disks, games, word processing, telecommunications and other software to run at maximum power and efficiency on your PCjr. Designed especially those who haven't mastered the art of customizing their computers. This one does it for you! 256K (Disk #99)

JR TOOLKIT V2.0. A collection of 30 upgrades, modifications and repairs. Some easy, some require experience. Includes adding second 5.25" drive (easy) or 3.5" drive (easy), PCjr to Tandy 1000 Mod (harder), power supply upgrade (harder), reset button (harder), V20 speedup chip (easy), how to quiet drives (easy), adjust monitors (easy), plus many others. (Reviewed 3/90 & 6/90) (Disk #110)

JR POWER PACK. A collection of particularly useful programs for PCjr owners. Set up RAM disks, address memory to 736K, turn a joystick into a mouse, set screen colors, keyboard click, scan and search text files, screenblanker, print spooler, and more. 128K. (Disk # 52)

JR POWER PACK II. Disk full of programs to make your PCjr more useful and powerful. Fix compatibility problems, set up ram disks, tiny word processor, set up 3.5" drives, use DOS easily, and more. Need 256K for some, 128K ok for most. (Disk #65)

PCJR COMPATIBILITY DISK V3.5. Lists hundreds of software titles, along with info on how they run (or don't run) on PCjrs. Includes many tips on how to make software PCjr compatible. Powerful search feature finds titles quickly and easily. 128k ok. Updated April, 1990. (Disk #60)

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jr Newsletter Software Store

The software in the jrNewsletter Software Store is the best public domain and user-supported software for the PCjr we've been able to find. All software has been tested on our PCjrs and is highly recommended. Some of the programs are equal to or better than commercial programs costing hundred of dollars. These are offered for you to try at $5.95 per disk. Some shareware requires additional payment if you continue to use it.

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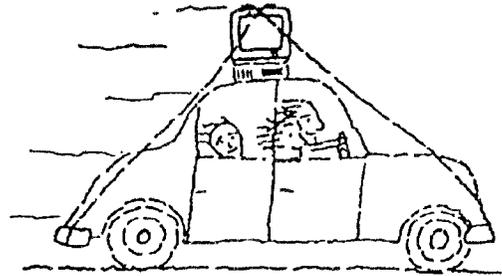
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