

NOTES FOR **CURSOR** Programs for PET™ Computers

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A CURSORY GLANCE

We need to understand computers at several levels to be prepared for the enormous change that will happen over the next ten years. At one extreme, it is essential to understand the "big picture" - what changes we can expect to see in society as a result of the proliferation of cheap computing power. At the other extreme, I think that we should try to understand how microelectronics works, down to the level of understanding how integrated circuit chips are designed and fabricated.

Over the last several months, I've read several books that provide some insight into how society may adapt to the computing revolution. If you have time to only read one, I'd suggest that it be Running Wild - The Next Industrial Revolution, by Adam Osborne (Osborne/McGraw-Hill). I especially enjoyed the quick history of our infant industry. Some of the chapters are superficial (the one on computer intelligence is particularly poor), and the book is rather uneven in quality. Regardless, there are many interesting facts and opinions about what we'll see in the near future. The Micro Millennium by Christopher Evans (Viking Press) takes a somewhat more philosophical view of the future than Osborne's book. Evans gives a reasonably good short history of computers, and spends quite a bit of space on the topic of artificial intelligence.

Ted Nelson (the editor of Creative Computing) has written a delightful book called The Home Computer Revolution. (The Distributors, 702 South Michigan, South Bend, IN 46618). His copyright paragraph is easily worth the two bucks: "All rights reserved, including digitization, theatrical readings, glossolalia, locking in underground trunks, littering, or placing this book in, or on top of, any information retrieval system not prohibited by law." Ted is one of the few genuine visionaries in this business, even if his enthusiasm sometimes outdistances fact. Here's another quote to give you the flavor of this excellent little book: "...the convivial hobby that you are part of right now may vanish like the crowd that welcomed Lindberg at Orly. They don't come out to meet the planes any more. Today's summer-camp camaraderie won't last forever, and the computer will probably become a home appliance, as glamorous as a can opener, within a couple of short years."

If you want to really understand integrated circuits, you should read the excellent book Introduction to VLSI Systems, by Carver Mead and Lynn Conway. (Addison Wesley). Make no mistake: the Mead and Conway book is challenging reading, at least for amateurs like myself. But it is clearly written, and presents fascinating details about how chips are designed and fabricated. Basically, integrated circuits will become much denser than they are now before the laws of physics limit further improvements. Denser means faster, and (eventually) cheaper. We ain't seen nothing yet!

CURSOR 21 HAS THESE PROGRAMS: (Program names ending with '!' use CB2 sound)

COVER21	The Cursor Chorus! Graphics by Stephen Pietrowicz.
CAPTURE!	Two wild beasts pursue you, but you can surround them with obstacles (if you are quick, and lucky). By Malcolm Michael.
DANCE!	An animated "Rain Dance" cartoon. By Bob Carr.
BOSWAIN	A computer mystery: where <u>are</u> the rubies, anyway?. By C. T. Nadovitch.
OURANOS!	Warfare with the ultimate weapon: weather! By Kathy Higby.
DRAG	Addition and subtraction drill. By Earl Furnman.

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MORE ABOUT THE PROGRAMS

Three of our programs this month use CB2 sound: COVER21!, CAPTURE!, and OURANOS!. If you don't have a sound attachment for your PET, get one! We know of two good sources for sound boxes: CAP Electronics, 8462 Hillwood Lane, Tucson, AZ 85715 (602) 296-4978, and Channel Data, 5960 Mandarin Ave., Goleta, CA 93017 (805) 964-6695. All in all, it's a shame that Commodore didn't see fit to build a little speaker amplifier into the PET. In fact, they still could do so in the PETs they are making now. I don't know why they don't: the cost when the machine is first built would be very small. Maybe it's because PETs and CBMs are supposed to now be deadly serious "business machines", and God knows, you'll never hear an IBM mainframe doing something frivolous like this month's CURSOR cover...

CAPTURE!... This is one of those games that will capture your imagination (no pun intended), and may also consume more of your leisure time than you'd care to admit! The game is deceptively simple: first, the screen of the PET is covered with numerous obstacles (shown as reverse video X's). Then, the two beasts that will pursue you appear (shown as *'s), and flash a couple of times so that you'll see where they are. Finally, your marker ('O') is placed on the board. As usual, you use the numeric pad to control your movements. However, nothing happens (except sound) until you begin moving. Once you begin to move, you keep moving, in whatever direction you have indicated with the numeric pad (2=down, 4=left, 6=right, and 8=up. The 1, 3, 7 and 9 keys move you diagonally, and you can stop by pressing 5.)

What makes this game different and especially challenging is that you can push the obstacles in front of you. Which means you can, if you are very clever, trap those nasty wild beasts. Not that it's easy! They are smart little devils, and seem to have a sense of smell or something that lets them track you remarkably well. Should you be so unfortunate as to get too close, they will leap on you and... well - is your life insurance up to date?

DANCE!... Bob Carr author of DROMEDA! (Cursor 18) and FROG! (Cursor 19) has written another delightful PET cartoon. We can't say much more, or we might ruin it for you. Too bad there isn't an Emmy or Oscar for "Best Computer Cartoon Using Character Graphics".

BOSWAIN... Chris Nadovitch (famous to our readers for RATRUN in Cursor 13 and BAT! in Cursor 14) is back again. Sorry, but you'll have to participate in this one before you can appreciate what it's all about. (We won't say anything cute like "Would you care to play another hand".) NOTE: BOSWAIN is rated PG by the Cursor Board of Review, due to its violent tone. (But, by our standards, most of the cartoons on Saturday morning television would get the same rating.)

OURANOS!... This program started out life with the more descriptive name of "Weather War". We couldn't just call it "Weather", since we've already published a weather forecasting program by that name. "War" didn't quite fit, so we did a little research for the name of a mythical figure that is somehow related to weather, and finally chose "Ouranos", the Greek god of the heavens.

The goal of Ouranos! is to destroy your opponent's house using the ultimate weapon: weather. You can select Hail, Lightning, Rain, or a Tornado. Should you tire of the game, select Quit, which will turn sound off in a graceful manner. After selecting your weapon, you must indicate the "charge" that you wish to apply to the weapon. The principle is not hard: negative values go to the left of the screen, and positive values to the right. The maximum values that you can give are from -150 to 150. There are two complications: there is always a wind blowing, which will affect the direction of your weather weapon. The wind factor is clearly indicated on the screen of the PET. The other factor is that from time to time, there is a random "Act of Nature", just like in real life. As the two players attack each other, the devastation caused by the weather weapons shows on the screen as houses gradually disappear from view. The winner is the one who is able to completely destroy the other's house.

DRAG... Provides addition and subtraction drill for little folks. One to four kids can play at one time, with the object being to be first to the finish line with your dragster. Problems are presented, and the time it takes to respond controls how far your car moves across the screen. Wrong answers are corrected, and don't move the car at all. However, any correct answer, no matter how long it takes, will move the car.

We went to quite a bit of trouble to add features so that teachers can customize this program to the needs of individual students. First, line 3110 in the program controls what percentage of the problems will be addition. We have set this initially to 50%. Obviously, if you want all subtraction problems you'll make it 0%, or 100% for strictly addition problems. (Some teachers may want to leave a small fraction of addition problems even when teaching subtraction, just to keep the kids on their toes...).

Controlling difficulty level turned out to be more complicated than you might expect. What we have done is give you complete control of each digit of the problem. (We do limit this program to problems with a maximum of two digits in the addend or augend, or in the minuend or subtrahend.) The DATA table in lines 3000 to 3070 has entries where you may specify the minimum and maximum values you want to use for each digit of the problem. As you get the program, line 3020 has four numbers: 1,9,2,18. They mean: for the "top row" of any problem, for addition I want the smallest value to be 1, and the largest value to be 9. For subtraction problems, I want 2 to be the smallest value, and 18 to be the largest number. Line 3040 contains similar information for the "second row" of a problem, and line 3070 has minimums and maximums for the answer.

GOSSIP

Commodore is going through another of its periodic convulsions. They have recently shifted to a new system of "regional centers". As part of their Master Plan, they have sharply restricted the flow of information from both Santa Clara and Norristown for whatever reasons. (One well-founded rumor is that folks at Santa Clara have been threatened with being fired if they divulge any information to outsiders.) Commodore recently hired former IBM executive Brent Nelson as the new General Manager for U.S. Sales. That may represent a damn good move, although I'd venture a guess that they ought to be raiding Apple Computer instead! Commodore has had a big problem with WORDPRO III and WORDPRO IV. Basically, for some time it was touch-and-go: the developer of WORDPRO had Commodore over the barrel! We aren't sure exactly how this issue has been resolved.

Other tidbits: the new 8050 disk is about ready to be shipped. It was delayed by problems with the DOS from what we hear. But who knows when we will eventually see the new "cheap" disk. Maybe by Christmas? Pascal, you ask? We don't know yet. However, 8K and 16K PETs are selling very well. In fact, you'll probably find them back-ordered in many parts of the country. Schools are jumping on the PET bandwagon at a remarkable rate. After all, the PET is a superb little machine. Too bad Commodore hasn't figured out how to sell and support the beast properly.

Speaking of nice machines, keep your eye on Radio Shack's new Model III. It appears to be a brilliant redesign of their original Model I, with just about all of the original mistakes corrected, and several nice new touches added. My prediction is that it will sell like gangbusters. Commodore may well go down in the history of computing as having been first with the best personal computer, but having completely squandered a golden business opportunity.