



# INQUIRING MINDS

Programming got you down? Don't despair—this month's column addresses readers' questions and helps puts those worries to rest.

By **JOE ABERNATHY**

THE SPOTLIGHT'S ON YOU THIS MONTH, AS WE TURN GS BASICS over to the mail. From pointers to fonts, North Carolina to the Indian Ocean, programming questions are on everybody's mind.

## AC OVERLOAD?

When running a game program that asks questions, then evaluates your responses, I keep getting strange error messages. This is a fairly complicated program, as it reads a lot of DATA statements, uses the RESTORE statement, rebuilds menus, and goes through a lot of conditional branching. I'm also displaying background pictures created with PaintWorks Gold.

The program's about 800 lines and, before it started misbehaving, it was more than 1000 lines. At one point, I get a Type Mismatch Error on a line that's nothing but a label.

I've talked to the people at Absoft, who try to help, but I wonder whether AC/BASIC is the proper type of GS BASIC to use for a program this large and complex. Would I be better off with another language compiler?

**Jeff Prose**  
Denver, CO

*Jeff, it's generally the case with complex programs that half the problems are limitations in the compiler and half are limitations in the programmer—at least with programs I write. Because I don't know what your exact problems are, I can't give you a specific answer.*

*I, too, have encountered the type-mismatch error on the line label. Switch it to a numeric label such as 250:, and the problem will go away.*

*Before you drop more money buying a new compiler, take a serious run at isolating your problem(s). To do this, break the program down into the smallest functions possible. Test each of them as a separate program, and once you're certain that each procedure works flawlessly, add another procedure and test them together. Eventually, you'll find the spot where your code is breaking. Be*

*aware that a problem in one procedure can result from another procedure; a variable overwrite is a very common example of this. Make a list of every variable you use, and trace each through the entire program run.*

*If after this you determine that AC/BASIC isn't up to the job—and it does seem to get quirky with a really large program—you may want to consider another language. Micol Advanced BASIC has a lot to recommend it, especially for a program such as yours. ByteWorks is also working on what promises*

*to be a reliable BASIC, and you may want to consider ORCA/Pascal. Pascal is very close to today's BASICS, and even if you want to stick with Micol BASIC, for instance, exposure to the structure of Pascal will help you learn to design big programs in a way that'll produce fewer bugs.*

## ADVANCED APPLES

I own an Apple IIe and a IIGS and have programmed in Applesoft BASIC. I now want to learn a language that takes advantage of the GS' features. Ideally, I'd like to avoid investing in a compiler, but if that's not possible, which one has a reasonable price tag? Also, which compiler will let me write applications and desk accessories?

**David A. Larson**  
Aberdeen, SD

*Apple kept Applesoft BASIC in the GS, David, but didn't spend a penny bringing it up to date. You'll have to use a GS-specific language compiler to do the jobs you want.*

*To write new desk accessories, get ORCA/Pascal or ORCA/C (Pascal, if your programming experience is limited; C if you know of and understand data structures and memory addressing, or don't mind learning). They're available from ByteWorks Inc., 4700 Irving Blvd. N.W., Suite 207, Albuquerque, NM 87114, (505) 898-8183.*

*If you can get by with .SYS16 programs and CDAs, get a copy of Micol Advanced BASIC (Micol Systems, 9 Lynch Rd., Willowdale, Ontario M2J2V6, 416-495-6864). Micol is fast and easy to use for the most part, and retains compatibility with your old Applesoft programs. It also has a set of one-word commands with which you can write (or port Applesoft programs) in the GS desktop metaphor.*

## FRENCH FONTS

Because I write in French, I'd like to access some French fonts other than the ones for the ImageWriter II. I'd like to use these fonts, which the TML manual describes, with MultiScribe GS. How can I create these ►

characters, and can I include them in a word processor?

**J.P. Guggenheim**  
Bryn Mawr, PA

*What you need is a good predesigned French font, and I just don't know if there is one. There are literally hundreds of commercially available fonts in the public domain, however, which you may want to investigate.*

*Claris sells two font disks; TechAlliance offers six font disks through its public-domain library; and you can download fonts from on-line services and bulletin boards everywhere.*

*Another option is to use a font editor to design your own custom font. The best bet for this is the new Beagle Bros Font Editor, which will work with all GS fonts and older Print Shop-style fonts.*

*Just add these fonts to the \*/SYSTEM/FONTS/ directory to use them with a GS word processor. To implement the Fonts menu in a program of your own design, you'll need the Toolbox calls \_FixFontMenu and \_ChooseFont, both of which are straightforward to implement.*

## POINTING TO TROUBLE

I've noticed a small mistake in the TML BASIC documentation of the reply record-structure array. Page 463 (Appendix C) of the TML BASIC Reference manual lists:

### Elements

6..31

32..159

but it should read as follows:

### Elements Value

6..21 String!(15) fname\$

22..149 String!(127) fpath\$

Also, I have some problems programming with TML BASIC. I've written to TML twice and never received an answer! Can you help me with the scroll bar in a modal dialog? I think I know how to write the FUNCTION myscrollbar% (command%, mydialoga, item%), but I've tried unsuccessfully to point to this function in the NewDItem procedure. I'm also struggling over the UNPACKBYTES% function; I get an event-queue error. Finally, I have a problem with the linedit item in modal dialog. When I want to get text I get an "msg 103" error.

One last thing—I'd like to meet people programming with TML BASIC. I live on an island in the Indian Ocean, and although there are quite a few of us with GSeS, not many are programming.

**Carole Fox**  
Logement de Fonction  
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France

*I can't help with the UnPackBytes problem, but I have a good idea what's wrong otherwise. TML's facility for handling memory pointers, which both the scroll bar and linedit items need to do, is flawed—so badly that TML is going to toss out the whole scheme when it updates the language. With some simple things the pointers work, but they break down quickly when you get past anything more complex than, say, \_SFGetFile. I haven't tried to further isolate the problem; doing so wouldn't produce any tangible results.*

*This doesn't help you with your debugging, but at least it can save you from banging your head against the wall. In all likelihood, your code is written properly. Port it into Pascal, C, or another BASIC and it'll probably work.*

*Carole, you mentioned in your letter that you use the French MiniTel on-line*

*service. Many overseas readers prefer to send mail via an on-line service, because it's free and much faster than traditional overseas mail. To reach this column on line, you must find a gateway to the United States' InterNET system, then address your E-mail to: jabernathy@pro-houston.CTS.COM.*

## BOOK IT

Can you recommend any good books for learning to program in Applesoft? I'm also interested in finding sources that discuss programming in BASIC for the IIgs.

**Peter Lundholm**  
St. Cloud, MN

*There are a lot of fine books covering the topics you specify, but it would be impossible to offer a complete list. To get started, however, you might want to pick up one of the following three texts.*

*Your First BASIC Program, by Dr Rodney Zaks (Sybex Books, Berkeley, CA, 1983), offers an introduction to Applesoft that examines such basics as variables, structure, branching, and looping. The book is a bit simplistic, but if you're lost, look here first.*

*David Miller's Mastering Applesoft Graphics (Scott, Foresman Computer Books, Glenview, IL, 1989) covers all aspects of fundamental graphics, shapes, and animation from the II Plus to the GS.*

*Also, BASIC Programs of Scientists and Engineers, by Alan R. Miller (Sybex Books, Berkeley, CA, 1981), shows how to deal with research topics, including mean and standard deviation, vector and matrix operations, and linear equations. The volume also discusses curve fitting, sorting, least squares, Newton's method, and other scientific functions.*

## FROZEN IN TIME

I'm having a problem with TML BASIC freezing with one program I wrote. It freezes every second time I compile to memory and run. The program is about 630 lines, and I'm working with the updated ROM and 1280K of RAM.

**Forest Godfrey**  
AFGodfrey Software  
Ripon, WS

*The most likely solution is to try a different version of your disk-operating system. The compiler you're using was never updated to run with anything past GS/OS version 3.2. Make a copy of your original distribution disk, and try booting cold from it.*

## BASIC UPDATES

A number of these letters—and an even larger number not printed here—deal with various aspects of the same problem: TML BASIC. The latest word from TML Systems (8837-B Goodbys Executive Drive, Jacksonville, FL 32217, 904-636-8592) is that it now has an Apple II product manager who's exploring the feasibility of updating the compiler. Before purchasing TML BASIC, check with the company to ensure that what you're buying is an updated, GS/OS 5.0-compatible product. As of September 1989, the only such IIgs BASICs were Micol Advanced BASIC and AC/BASIC.□

**JOE ABERNATHY** IS A JOURNALIST WITH *THE HOUSTON CHRONICLE*. HE'S A CERTIFIED APPLE DEVELOPER AND THE AUTHOR OR COAUTHOR OF EIGHT APPLE II PROGRAMS. WRITE TO HIM C/O INCIDER, 80 ELM STREET, PETERBOROUGH, NH 03458. ENCLOSE A SELF-ADDRESSED, STAMPED ENVELOPE IF YOU'D LIKE A PERSONAL REPLY.