

A PREVIEW:
IBM'S PCjr
A REVIEW:
COLECO'S ADAM

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FAMILY COMPUTING™

Computing Fun in the Sun

**Surviving the First Day
with Your New Computer**

**Buyers' Guide: Disk Drives
and Other Storage Devices**

Spreadsheet Programs at Home

**Seasonal Programs
for Popular Computer Brands**



FAMILY COMPUTING™

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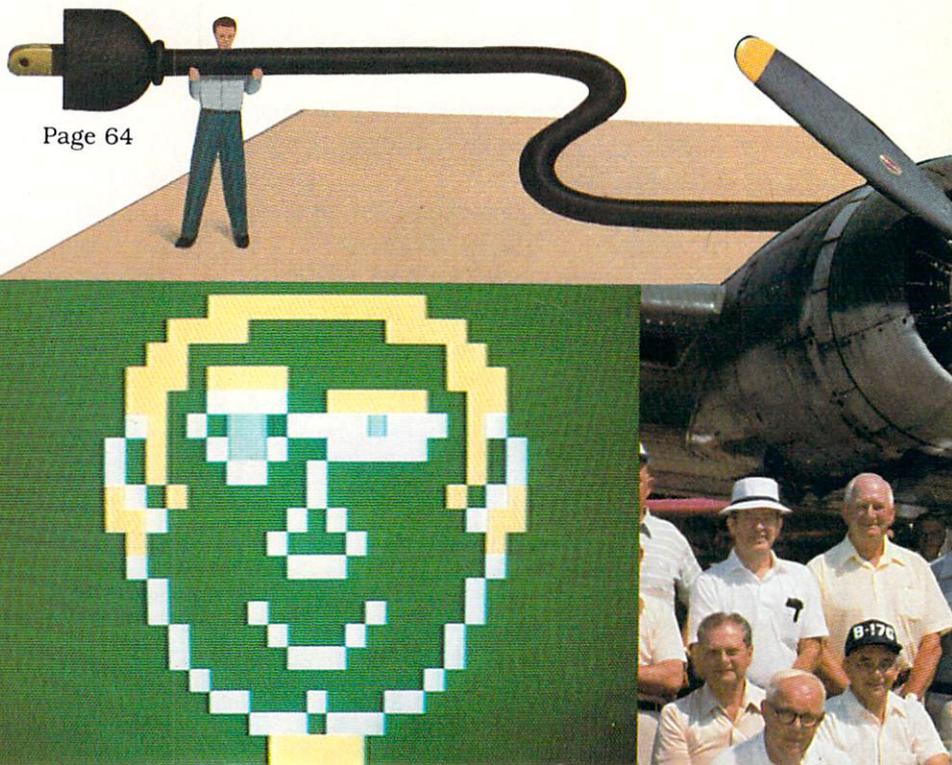
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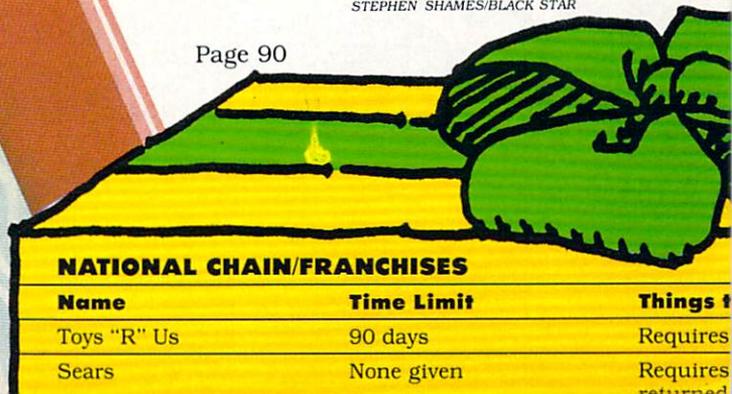
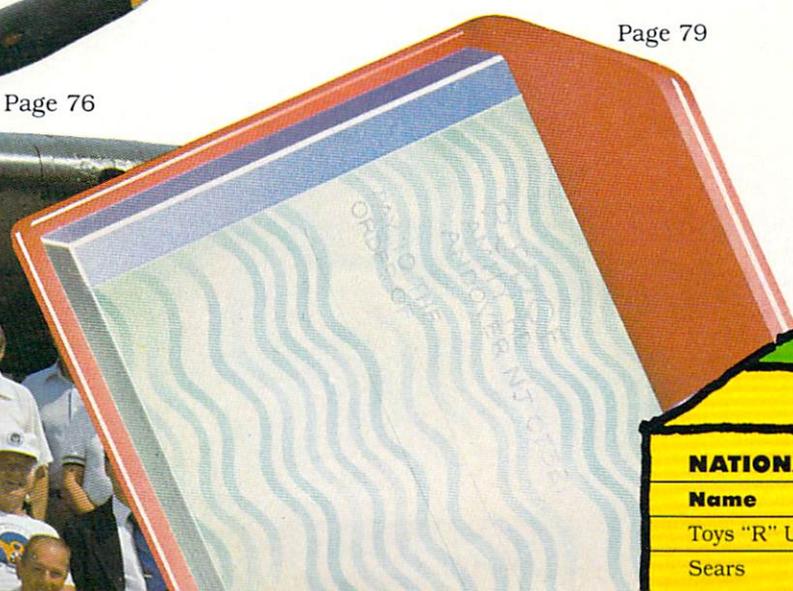
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About the Cover:

Our posed cover photograph illustrates the joys of computing, but it sets a poor example of proper computer care. A computer should not, of course, be used on a sandy beach, especially in the bright tropical sunlight. Disks should never be placed on a disk drive, and all food and drink should be kept away from the work area.

COVER PHOTOGRAPH BY
STEPHEN SHAMES/BLACK STAR

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NATIONAL CHAIN/FRANCHISES

Name	Time Limit	Things to
Toys "R" Us	90 days	Requires
Sears	None given	Requires



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Warped into a prehistoric world you've contaminated the dinosaurs. You must climb nine deadly cliffs, find the dino eggs and carry them back to the 21st century.

Dodge the radioactive snakes and spiders when you climb, leap and jump over the challenging cliffs to locate the eggs. As you fight your way up the nine levels your skills must increase if you are to survive the deadly creatures.



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Can you escape the Dino Mom's stomp, avoid the crawling, clawing creatures, find the eggs and save the dinosaurs from extinction? Only you can face the challenges of survival in the prehistoric time warp of DINO EGGS™ from MicroFun, Inc. ...the fun goes on forever.

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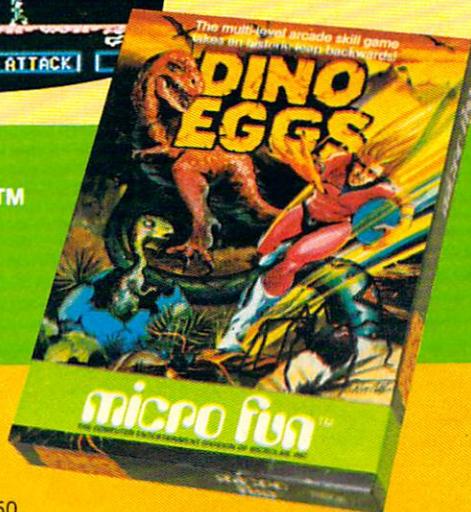
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Created by
David Schroeder

Available for:
Apple II™ & Ile™
Atari 800™
IBM PC™
ColecoVision™
Commodore 64™



Coleco's ADAM

THE VIDEO GAME MAKER
COMES OUT WITH A COMPLETE COMPUTER-IN-A-BOX

BY CHARLES H. GAJEWAY



The ADAM is a complete computer system (including a daisy-wheel printer) that sells for around \$750. All you need to start computing is a TV.

Most computers are assembled from components bought separately. Consumers attracted by the low price of the Central Processing Unit, or keyboard unit, often find that they have to spend a considerable amount of time and money to put together a working system. Not so with Coleco's ADAM. The whole system comes lock, stock, and barrel in one box. If you have a TV, you're ready to start computing.

The major part of ADAM is the popular ColecoVision video game system; and if you already have a ColecoVision, you can turn it into an ADAM with an expansion module (for about \$500). Because Coleco believes that playing games and word processing are the two most popular applications for home computerists, the ADAM is geared for both and has a built-in word-processing program.

Packaging all these features into a computer that works well and sells for \$750 is an ambitious task, one that many didn't think was possible. Did Coleco do it?

OPENING THE BOX

The box the ADAM system comes packed in is impressively large, complete with all the necessary cables and connectors, several instruction manuals, and three of Coleco's special "data packs," which are a cross between cassettes and floppy disks (SmartBASIC, Buck Rogers, and a

blank disk for storage). The system includes a keyboard, a memory console with a data-pack drive, two joysticks with numeric keypads, and a daisy-wheel printer. In the future, a disk drive and modem will be available.

The set-up guide gives clear, explicit assembly instructions, and the system sets up easily. The cables and connectors are sturdy, fitting with a reassuring precision. While ADAM is constructed largely of plastic, the unit, with the exception of the printer, looks and feels solid, with no gaps or sharp edges.

THE COMPONENTS

Keyboard. The keyboard is superb. Key spacing and "action" are professional. There's a set of dedicated keys (PRINT, STORE, etc.) for the built-in word processing, and six function keys. ADAM rates an A-plus here; both experienced computer users and novices tried it out, and all were impressed.

Memory Console. The memory console, which connects to the keyboard with a cable, is also very good. It has a low, sleek profile, yet the data-pack drive and ColecoVision cartridge port are easily accessible. My only complaints are that the data-pack drive door opens with a jarring clunk, and the unit is not big enough to be tucked under a monitor to create a compact grouping.

ADAM FACTS

MEMORY: 80K RAM, expandable to 144K
USER-AVAILABLE MEMORY IN BASIC MODE: 26K
(for unexpanded model)
VIDEO OUTPUT: TV or monitor
TEXT DISPLAY: 36 char × 24 lines; 80 char
× 24 lines with 80-column adapter
and monitor
GRAPHICS: 16 colors, 256 × 192 (maximum resolution)
SOUND: 3 voices, 5-octave range
KEYBOARD: Typewriter-style, 75 keys, 6
multifunction "smart" keys
SUGGESTED RETAIL PRICE: \$750, includes
printer (80 columns, 10 char per second),
2 joysticks with numeric keypads, keyboard, memory console

Digital Data Packs. The data-pack drive, which accepts digital data packs (they look much like cassettes), is a cost-effective compromise between audio-cassette storage and a floppy disk drive, and stores a sizable 256K. While not as fast as a disk drive, particularly when saving a file, data packs are not as painfully slow as an audio cassette. [See "Buyers' Guide to Mass-Storage Devices, p. 86.] Reliability was good and ease of use acceptable, but the thin tape is fragile and more prone to accidental damage than a disk, particularly from younger family members. The BASIC tape, in fact, would not load after just two days of use.

Screen Display. The screen image is on a par with that of the Commodore 64—good but not exceptional. The 36-character screen display is stable, but ghosting and interference detract from sharpness, which can be annoying when word processing.

Printer. The printer is the only part of the system where cost cutting is obvious and detrimental. It is a letter-quality daisy-wheel printer, but is extremely slow (10 characters per second), and has a flimsy, toy-like

CHARLES H. GAJEWAY evaluates computer hardware and software for Merrill Lynch & Co., where he works, and has tested programs under development from Lotus Development (1-2-3) and Bruce & James (WordVision). He is also the author of "HomeCalc," on page 79.

feel, particularly in the paper-handling mechanism. The printer's design seems susceptible to breakdowns, a problem made worse because the power supply for the entire system is in the printer. If the printer has to be repaired, the computer is unusable. Coleco should have located the central power supply in the memory console; a computer temporarily without a printer is a lesser evil than a family temporarily without a computer.

While the reliability of the printer is a question mark, the noise it makes in operation is very real. Several people remarked that the shocking clatter would give them serious reservations about purchasing an ADAM system. I would have to agree, since the printer woke my daughter from a sound sleep twice while I was testing the machine. A user could rig a foam-lined box to absorb some of the racket, but Coleco needs to revisit the drawing board on this one.

ELECTRONIC TYPEWRITER

If a program data pack is not in the drive when the machine is powered up, the user is greeted with a screen titled ADAM'S ELECTRONIC TYPEWRITER. In this mode, whatever is typed at the keyboard immediately appears both on paper and on the



Coleco's digital tape drive, which runs programs stored on data packs, looks much like a cassette tape recorder. However, it is much faster, and can be operated under computer control. With data packs, which look much like cassettes, you can locate files or programs much faster than you can on cassettes.

screen. Just as with a typewriter, the only controls are margins, tabs, and margin release. Highly useful for short notes and letters, this built-in program eliminates the need for a typewriter in the house.

WORD PROCESSING

Coleco calls its built-in word-processing software *SmartWRITER*, referring to its reliance on the six variable function "smart keys" used to control many of the editing features. A reasonably powerful and complete word processor, it is very easy to use, with extensive on-screen prompting.

SmartWRITER is brought up by pressing the WP/ESC key. Editing

and system commands are controlled by clearly labeled command keys, as well as the six "smart keys." The current function of the smart keys is displayed at all times at the bottom of the screen display. The excellent feel of the keyboard is supplemented by some clever audio feedback, part or all of which can be turned off by the user. (Note: to get sound from a monitor, a special cable is required.) The user also has a choice of two screen displays: a static screen that shows all text as typed, and a "moving window" screen that scrolls across the text, so that you can see how your text will look when it's printed.

I had no problem learning the system rapidly, and my wife—who is not an experienced computer user—was up and running within a half hour. We feel that *SmartWRITER* would be useful from the junior-high level and up, perhaps for even younger children who have some keyboard and computer experience.

SOFTWARE

Since a major component of ADAM is the highly popular ColecoVision system, Coleco game cartridges will be one of its prime attractions. Games will also be available on data packs. Because data packs can store larger programs than cartridges, many existing games will come in expanded versions.

To make Coleco a true family computer, however, Coleco needs to include educational packages as part of its software line. It says such packages are coming, including *Smart-LOGO*, *ADAM Typing Tutorial*, the *Homework Helpers* series, and *Story Factory*. In addition, several home-management packages have been promised.

BASIC PROGRAMMING

Coleco calls its version of BASIC SmartBASIC. What's smart about it is that it is very closely compatible with Applesoft BASIC, right down to the graphics (although ADAM has more colors in high-resolution mode) and storage commands. Thus, most Applesoft programs can be typed directly into the ADAM with only minor changes.

In addition, since one of the most popular computers in schools is the Apple II, students will be able to transfer their computer skills from one machine to another with a minimum of relearning. This somewhat offsets the lack of commercial software currently available for the ADAM.

My tests revealed that SmartBASIC is a fine beginner's language. Unlike Applesoft, program lines are

scanned for errors before they are accepted as part of a program. Error messages are very descriptive, even trying to indicate the location of an error in the line. There is a price for this assistance, however. The ADAM has 64K of RAM available for computing (16K is devoted to the video display, bringing the system total to 80K), but once SmartBASIC is loaded, only 26K is left over for programs and data. Those families with ambitious programmers will be haunting the computer stores, eagerly awaiting Coleco's promised 64K expansion.

MANUALS

The manuals supplied with the ADAM are excellent introductory materials. They are not especially elegant, to be sure, but the contents are



ADAM's keyboard is perhaps its strongest component. It has 75 keys plus a numeric keypad, and is easy to learn your way around and use.

well-written, using clear, nontechnical terms. Computer jargon is avoided or explained, and the tone is friendly and helpful. One glaring omission is the lack of explanation on what is needed to hook up a monitor. Another problem is that the manuals stop at the introductory level; the BASIC manual, in particular, does not explain many of the commands available to the user. Some users, of course, will never need to go further. But many others, particularly teenagers, will want to. Coleco should make allowances for this audience, and provide a technical manual that deals with the finer points of the ADAM's operation, particularly graphics. The current set has a tendency to leave off just as things are getting interesting.

A GOOD DEAL BUT FOR THE ACHILLES' HEEL

The ADAM system truly does offer a lot of value for the money. It is generally well designed and thought out. But, as with many pioneering ventures, early production may have bugs to work out. The most obvious problem here is the printer, with its light construction and startling noise level. If the printer will receive only light usage, or if you already own a ColecoVision, ADAM is an excellent choice for a home machine. **FC**

NEW YEAR'S PROGRAMS

```
400 PRINT "THANK YOU. PLEASE CHECK YOUR PRINTER."
410 PRINT "THEN PRESS <RETURN> TO PRINT THE NOTE."
440 INPUT R$
450 OPEN #7,8,0,"P:"
470 GOSUB 1000
480 PRINT #7
490 PRINT #7;"DEAR ";FOS$;" ,"
500 PRINT #7
510 PRINT #7
520 PRINT #7;"TTTTT H H A N N K K"
530 PRINT #7;" T H H A A NN N K K"
540 PRINT #7;" T HHHHH AAAAA N N N KK"
550 PRINT #7;" T H H A A N NN K K"
560 PRINT #7;" T H H A A N N K K"
570 PRINT #7
580 PRINT #7;" Y Y 000 U U"
590 PRINT #7;" Y Y 0 0 U U"
600 PRINT #7;" Y 0 0 U U"
610 PRINT #7;" Y 0 0 U U"
620 PRINT #7;" Y 000 UUU"
630 PRINT #7
640 PRINT #7
650 PRINT #7;"HOW DID YOU KNOW I NEEDED"
660 IF LEN(GIS$)+LEN(ADJ$)>22 THEN 690
670 PRINT #7;GIS$;"? IT'S REALLY ";ADJ$;"!!!!"
680 GOTO 710
690 PRINT #7;GIS$;"?"
700 PRINT #7;"IT'S REALLY ";ADJ$;"!!!!"
710 PRINT #7;WHS$;"."
720 PRINT #7;"I CAN'T THANK YOU ENOUGH, ";FOS$;" ,"
730 PRINT #7;"FOR YOUR THOUGHTFULNESS."
740 PRINT #7
750 PRINT #7
760 PRINT #7;CLS$;" ,"
770 PRINT #7;SP$(1,LEN(CLS$)+3);NAS$
780 GOSUB 1000
800 CLOSE #7
810 PRINT CHR$(125)
820 PRINT "PRESS <RETURN> TO MAKE A NEW NOTE."
840 INPUT R$
850 RUN
1000 FOR T=1 TO 40
1010 PRINT #7;"*";
1020 NEXT T
1030 PRINT #7
1040 PRINT #7
1050 RETURN
```

ADAM & Apple/Thank You Note

```
50 HOME
70 PRINT "THANK-YOU NOTE PROGRAM"
80 PRINT
90 PRINT "PLEASE ANSWER THESE QUESTIONS."
100 PRINT "PRESS <RETURN> AFTER EACH REPLY."
130 PRINT
140 INPUT "WHOM IS THIS NOTE FOR?";FOS$
160 PRINT
170 INPUT "WHAT IS YOUR NAME?";NAS$
190 PRINT
200 INPUT "WHAT GIFT DID YOU RECEIVE?";GIS$
230 PRINT
240 PRINT "WHAT ADJECTIVE DESCRIBES THE GIFT"
250 INPUT "(E.G., WONDERFUL, GREAT, NEAT)?";ADJ$
290 PRINT
300 PRINT "IN LESS THAN ONE LINE, DESCRIBE"
310 PRINT "WHY YOU LIKE THE GIFT. BECAUSE..."
330 INPUT WH$
340 PRINT
350 PRINT "HOW DO YOU WANT TO CLOSE THE NOTE"
360 INPUT "(E.G., YOURS TRULY, SINCERELY)?";CLS$
390 HOME
400 PRINT "THANK YOU. PLEASE CHECK YOUR PRINTER."
410 PRINT "THEN PRESS <RETURN> TO PRINT THE NOTE."
440 INPUT R$
450 PR# 1
470 GOSUB 1000
480 PRINT
```

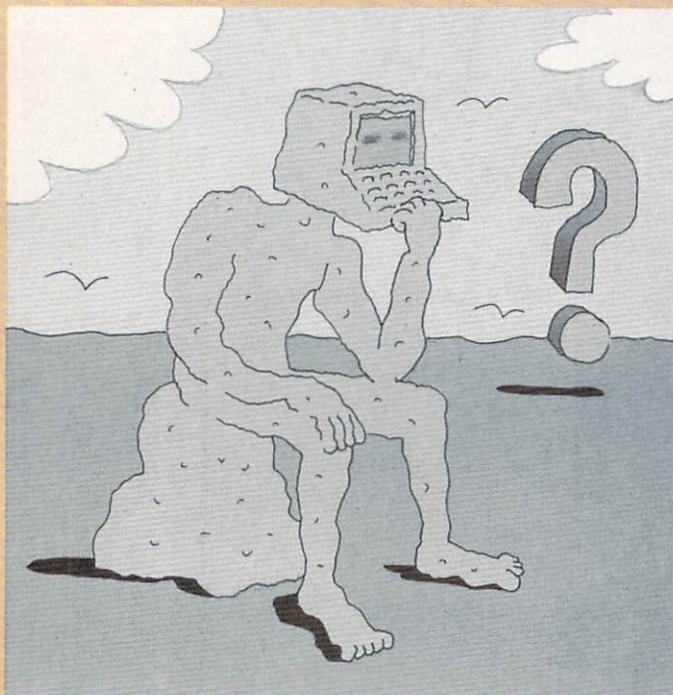
```
490 PRINT "DEAR ";FOS$;" ,"
500 PRINT
510 PRINT
520 PRINT "TTTTT H H A N N K K"
530 PRINT " T H H A A NN N K K"
540 PRINT " T HHHHH AAAAA N N N KK"
550 PRINT " T H H A A N NN K K"
560 PRINT " T H H A A N N K K"
570 PRINT
580 PRINT " Y Y 000 U U"
590 PRINT " Y Y 0 0 U U"
600 PRINT " Y 0 0 U U"
610 PRINT " Y 0 0 U U"
620 PRINT " Y 000 UUU"
630 PRINT
640 PRINT
650 PRINT "HOW DID YOU KNOW I NEEDED"
660 IF LEN(GIS$) + LEN(ADJ$) > 22 THEN 690
670 PRINT GIS$;"? IT'S REALLY ";ADJ$;"!!!!"
680 GOTO 710
690 PRINT GIS$;"?"
700 PRINT "IT'S REALLY ";ADJ$;"!!!!"
710 PRINT WHS$;"."
720 PRINT "I CAN'T THANK YOU ENOUGH, ";FOS$;" ,"
730 PRINT "FOR YOUR THOUGHTFULNESS."
740 PRINT
750 PRINT
760 PRINT CLS$;" ,"
770 PRINT TAB(LEN(CLS$) + 3);NAS$
780 GOSUB 1000
790 PR# 0
810 HOME
820 PRINT "PRESS <RETURN> TO MAKE A NEW NOTE."
840 INPUT R$
850 RUN
1000 FOR T = 1 TO 40
1010 PRINT "*";
1020 NEXT T
1030 PRINT
1040 PRINT
1050 RETURN
```

Timex Sinclair 1000 w/16K RAM Pack/ Thank-You Note

```
50 CLS
70 PRINT "THANK-YOU NOTE PROGRAM"
80 PRINT
90 PRINT "PLEASE ANSWER THESE QUESTIONS."
100 PRINT "PRESS <ENTER> AFTER EACH REPLY."
130 PRINT
140 PRINT "WHOM IS THIS NOTE FOR?"
150 INPUT F$
160 PRINT
170 PRINT "WHAT IS YOUR NAME?"
180 INPUT N$
190 PRINT
200 PRINT "WHAT GIFT DID YOU RECEIVE?"
210 INPUT G$
230 PRINT
240 PRINT "WHAT ADJECTIVE DESCRIBES THE"
250 PRINT "GIFT (E.G., WONDERFUL, GREAT,"
260 PRINT "NEAT)?"
270 INPUT A$
290 PRINT
300 PRINT "IN LESS THAN ONE LINE, DESCRIBE"
310 PRINT "WHY YOU LIKE THE GIFT."
320 PRINT "BECAUSE..."
330 INPUT W$
340 PRINT
350 PRINT "HOW DO YOU WANT TO CLOSE THE"
360 PRINT "NOTE (E.G., YOURS TRULY,"
370 PRINT "SINCERELY)?"
380 INPUT C$
390 CLS
400 PRINT "THANK YOU. PLEASE CHECK YOUR"
410 PRINT "PRINTER. THEN PRESS <ENTER> TO"
420 PRINT "PRINT THE NOTE."
```

DECISION MAKER

BY JOEY LATIMER



Nobody's perfect, but some of us are less perfect than others and may have a hard time deciding which bad habit should be the focus of our New Year's resolution for 1984. Run *Decision Maker*, and let your computer help you decide!

First you will be asked to provide a list of options you're trying to choose among—in this case, possible New Year's resolutions. Let's say you give two: "stop overeating" and "be more punctual." Next you will be asked to provide a list of factors that will influence your decision. Let's say you input only two: health and money.

You will then be asked to rate the relative importance of each factor on a scale of 1 (lowest) to 10 (highest). If on your recent 85th birthday you came into a great inheritance, you might rate money a 1 but because of your age give health an 8.

Next you will be asked to rate each option ("stop overeating" and "be more punctual") on the basis of each factor. You might rate "stop overeating" a 2 for health because you're not that fat, but a 7 for money because all those candy bars add up. And you might give punctuality a 4 for health, just because you feel tense as you race to an overdue appointment, and a 9 for money, because you may lose your job unless you start coming in on time.

Even if you choose not to accept the computer's conclusion, *Decision Maker* is a handy way for you to define all the factors that are important to making a particular decision. The program can be used for a variety of decisions, all the way from determining which job to take to what room to redecorate, or which computer peripheral to buy!

Base Version (VIC-20)/Decision Maker

```
10 PRINT CHR$(147)
30 DIM I(10,10)
120 PRINT "DECISION MAKER"
130 PRINT
140 PRINT "PLEASE TYPE A LIST "
150 PRINT "OF THE OPTIONS YOU "
```

```
160 PRINT "ARE CONSIDERING. "
170 PRINT "ANY ORDER WILL DO. "
180 GOSUB 2000
190 C=1
200 D$="DONE"
210 INPUT A$(C)
240 IF A$(C)=D$ THEN 300
250 C=C+1
290 GOTO 210
300 TA=C-1
310 PRINT CHR$(147)
320 PRINT "PLEASE TYPE A LIST "
330 PRINT "OF FACTORS THAT ARE "
340 PRINT "IMPORTANT IN MAKING "
350 PRINT "THIS DECISION."
360 GOSUB 2000
370 C=1
380 INPUT F$(C)
410 IF F$(C)=D$ THEN 470
450 C=C+1
460 GOTO 380
470 TF=C-1
480 PRINT CHR$(147)
490 PRINT "PLEASE RATE THE "
500 PRINT "RELATIVE IMPORTANCE "
510 PRINT "OF EACH FACTOR ON A "
520 PRINT "SCALE OF 1 TO 10 (10 "
530 PRINT "BEING THE HIGHEST)."
540 GOSUB 3000
550 FOR C=1 TO TF
560 PRINT
570 PRINT F$(C);
580 INPUT RF(C)
590 IF RF(C)<1 OR RF(C)>10 THEN 580
610 NEXT C
620 FOR C=1 TO TA
630 PRINT CHR$(147)
640 PRINT "PLEASE RATE, ON A "
650 PRINT "SCALE OF 1 TO 10, "
660 PRINT "THE AMOUNT EACH "
670 PRINT "FACTOR SUPPORTS "
680 PRINT "CHOOSING THE OPTION"
690 PRINT
700 PRINT A$(C)
710 GOSUB 3000
720 PRINT "WHAT IS THE RATING "
730 PRINT "OF ";A$(C)
740 PRINT "FOR THE FACTOR ..."
750 FOR IC=1 TO TF
760 PRINT
770 PRINT F$(IC);
780 INPUT I(C,IC)
790 IF I(C,IC)<1 OR I(C,IC)>10 THEN 780
800 NEXT IC
830 NEXT C
840 PRINT CHR$(147)
850 PRINT "CALCULATING RESULTS"
860 FOR C=1 TO TA
870 FOR IC=1 TO TF
880 TR(C)=TR(C)+I(C,IC)*RF(IC)
890 NEXT IC
900 NEXT C
910 W=1
920 FOR C=2 TO TA
930 IF TR(C)>TR(W) THEN W=C
950 NEXT C
960 POKE 36878,3
970 POKE 36874,240
980 FOR D=1 TO 500
990 NEXT D
1000 POKE 36874,0
1030 PRINT CHR$(147)
1040 PRINT A$(W)
1050 PRINT "HAD THE HIGHEST "
1060 PRINT "OVERALL RATING WITH "
1070 PRINT TR(W);" POINTS."
1080 PRINT
1090 PRINT "THE OTHER OPTIONS "
```

NEW YEAR'S PROGRAMS

```
1100 PRINT "RATED AS FOLLOWS:"
1110 PRINT
1120 FOR C=1 TO TA
1130 IF C=W THEN 1150
1140 PRINT TR(C),A$(C)
1150 NEXT C
1160 END
2000 GOSUB 3000
2010 PRINT "TYPE THE WORD ";CHR$(34);"DONE";CHR$(34);" "
2020 PRINT "AND PRESS <RETURN> "
2030 PRINT "WHEN YOU HAVE "
2040 PRINT "FINISHED TYPING THE "
2050 PRINT "LIST."
2060 PRINT
2070 RETURN
3000 PRINT
3010 PRINT "PRESS <RETURN> AFTER "
3020 PRINT "EACH ENTRY."
3030 RETURN
```

Atari/Decision Maker

```
10 PRINT CHR$(125)
30 DIM A$(400),F$(400),AP(10,2),FP(10,2),L$(40),RF(10)
,I(10,10),TR(10),R$(1),D$(4)
90 FOR X=0 TO 10
100 TR(X)=0
110 NEXT X
120 PRINT "DECISION MAKER"
130 PRINT
140 PRINT "PLEASE TYPE A LIST OF THE"
150 PRINT "OPTIONS YOU ARE CONSIDERING."
160 PRINT "ANY ORDER WILL DO."
180 GOSUB 2000
190 C=1
200 D$="DONE"
210 INPUT L$
240 IF L$=D$ THEN 300
250 AP(C,1)=LEN(A$)+1
260 A$(AP(C,1))=L$
270 AP(C,2)=LEN(A$)
280 C=C+1
290 GOTO 210
300 TA=C-1
310 PRINT CHR$(125)
320 PRINT "PLEASE TYPE A LIST OF"
330 PRINT "FACTORS THAT ARE IMPORTANT"
340 PRINT "IN MAKING THIS DECISION"
360 GOSUB 2000
370 C=1
380 INPUT L$
410 IF L$=D$ THEN 470
420 FP(C,1)=LEN(F$)+1
430 F$(FP(C,1))=L$
440 FP(C,2)=LEN(F$)
450 C=C+1
460 GOTO 380
470 TF=C-1
480 PRINT CHR$(125)
490 PRINT "PLEASE RATE THE RELATIVE IMPORTANCE"
500 PRINT "OF EACH FACTOR ON A SCALE OF 1 TO 10"
510 PRINT "(10 BEING THE HIGHEST)."
540 GOSUB 3000
550 FOR C=1 TO TF
560 PRINT
570 PRINT F$(FP(C,1)),FP(C,2))
580 INPUT L
590 IF L<1 OR L>10 THEN 580
600 RF(C)=L
610 NEXT C
620 FOR C=1 TO TA
630 PRINT CHR$(125)
640 PRINT "PLEASE RATE, ON A SCALE OF 1 TO 10,"
650 PRINT "THE AMOUNT EACH FACTOR SUPPORTS"
660 PRINT "CHOOSING THE OPTION"
670 PRINT
700 PRINT A$(AP(C,1)),AP(C,2))
710 GOSUB 3000
720 PRINT "WHAT IS THE RATING OF"
```

```
730 PRINT A$(AP(C,1),AP(C,2))
740 PRINT "FOR THE FACTOR"
750 FOR IC=1 TO TF
760 PRINT
770 PRINT F$(FP(IC,1),FP(IC,2));
780 INPUT L
790 IF L<1 OR L>10 THEN 780
810 I(C,IC)=L
820 NEXT IC
830 NEXT C
840 PRINT CHR$(125)
850 PRINT "CALCULATING RESULTS"
860 FOR C=1 TO TA
870 FOR IC=1 TO TF
880 TR(C)=TR(C)+I(C,IC)*RF(IC)
890 NEXT IC
900 NEXT C
910 W=1
920 FOR C=2 TO TA
930 IF TR(C)>TR(W) THEN W=C
950 NEXT C
960 PRINT CHR$(253)
1030 PRINT CHR$(125)
1040 PRINT A$(AP(W,1),AP(W,2))
1050 PRINT "HAD THE HIGHEST OVERALL RATING WITH"
1060 PRINT TR(W);" POINTS."
1080 PRINT
1090 PRINT "THE OTHER OPTIONS RATED AS FOLLOWS:"
1120 FOR C=1 TO TA
1130 IF C=W THEN 1150
1140 PRINT TR(C),A$(AP(C,1),AP(C,2))
1150 NEXT C
1160 END
2000 GOSUB 3000
2010 PRINT "TYPE THE WORD ";CHR$(34);"DONE";CHR$(34);"
AND PRESS"
2020 PRINT "<RETURN> WHEN YOU HAVE FINISHED"
2030 PRINT "TYPING THE LIST."
2060 PRINT
2070 RETURN
3000 PRINT
3010 PRINT "PRESS <RETURN> AFTER EACH ENTRY."
3030 RETURN
```

Timex Sinclair 1000 w/16K RAM Pack/ Decision Maker

```
10 CLS
30 DIM A$(10,32)
40 DIM F$(10,32)
50 DIM L$(32)
60 DIM I(10,10)
70 DIM R(10)
80 DIM T(10)
120 PRINT "DECISION MAKER"
130 PRINT
140 PRINT "PLEASE TYPE A LIST OF THE"
150 PRINT "OPTIONS YOU ARE CONSIDERING."
160 PRINT "ANY ORDER WILL DO."
180 GOSUB 2000
190 LET C=1
200 LET D$="DONE"
210 INPUT A$(C)
230 PRINT A$(C)
240 IF A$(C, TO 4)=D$ THEN GOTO 300
280 LET C=C+1
290 GOTO 210
300 LET TA=C-1
310 CLS
320 PRINT "PLEASE TYPE A LIST OF FACTORS"
330 PRINT "THAT ARE IMPORTANT IN MAKING"
340 PRINT "THIS DECISION."
360 GOSUB 2000
370 LET C=1
380 INPUT F$(C)
400 PRINT F$(C)
410 IF F$(C, TO 4)=D$ THEN GOTO 470
450 LET C=C+1
```

NEW YEAR'S PROGRAMS

```
460 GOTO 380
470 LET TF=C-I
480 CLS
490 PRINT "PLEASE RATE THE RELATIVE"
500 PRINT "IMPORTANCE OF EACH FACTOR ON A"
510 PRINT "SCALE OF 1 TO 10"
520 PRINT "(10 BEING THE HIGHEST)."
```

MODIFICATIONS FOR OTHER COMPUTERS

ADAM & Apple/Decision Maker

Use the base version, with the following alterations:
Change PRINT CHR\$(147) to HOME in lines 10, 310, 480, 630, 840, and 1030. Omit lines 990 and 1000. Change lines 960-980 to read

```
960 FOR B = 1 TO 4
970 PRINT CHR$(7)
980 NEXT B
```

Finally, add a semicolon to the end of lines 140, 160,

320, 340, 490, 510, 640-660, 1050, 1090, 2010, 2030, 2040, and 3010. For example, line 140 should look like this:

```
140 PRINT "PLEASE TYPE A LIST ";
```

Commodore 64/Decision Maker

Use the base version, with the following alterations:

Change lines 960-1000 to read

```
960 POKE 54296,15
970 POKE 54278,228
980 POKE 54273,57
990 POKE 54276,33
1000 FOR T = 1 TO 200
```

Add lines 1010 and 1020:

```
1010 NEXT T
1020 POKE 54276,0
```

Finally, add a semicolon to the end of lines 140, 160, 320, 340, 490, 510, 640-660, 1050, 1090, 2010, 2030, 2040, and 3010.

IBM PC/Decision Maker

Use the base version, with the following alterations:

Change PRINT CHR\$(147) to CLS in lines 10, 310, 480, 630, 840, and 1030. Change line 960 to read

```
960 BEEP
```

Omit lines 970-1000. Finally, add a semicolon to the end of lines 140-160, 320-340, 490-510, 640-660, 1050, 1060, 1090, 2010-2040, and 3010.

TI-99/4A/Decision Maker

Use the base version, with the following alterations:

Change PRINT CHR\$(147) to CALL CLEAR in lines 10, 310, 480, 630, 840, and 1030. Change <RETURN> to <ENTER> in lines 2020 and 3010. Omit lines 970-1000. Change lines 590, 790, 930, and 960 to read

```
590 IF RF(C)<1 THEN 580
790 IF I(C,IC)<1 THEN 780
930 IF TR(C)<=TR(W) THEN 950
960 CALL SOUND(300,131,5)
```

Finally, add lines 600, 800, and 940:

```
600 IF RF(C)>10 THEN 580
800 IF I(C,IC)>10 THEN 780
940 W=C
```

TRS-80 Color Computer/Decision Maker

Use the base version, with the following alterations:

Change PRINT CHR\$(147) to CLS in lines 10, 310, 480, 630, 840, and 1030. Change <RETURN> to <ENTER> in lines 2020 and 3010. Omit lines 970-1000. Change line 960 to read

```
960 SOUND 20,10
```

Add line 20:

```
20 CLEAR 1000
```

Finally, add a semicolon to the end of lines 640, 650, and 2040.

TRS-80 Models I & III/Decision Maker

Use the base version, with the following alterations:

Change PRINT CHR\$(147) to CLS in lines 10, 310, 480, 630, 840, and 1030. Change <RETURN> to <ENTER> in lines 2020 and 3010. Omit lines 960-1000. Add line 20:

```
20 CLEAR 1000
```

Finally, add a semicolon to the end of lines 140-160, 320, 330, 490, 500, 520, 640, 650, 670, 1050, 1060, 1090, 2010, 2020, 2040, and 3010.

TRS-80 Model 4/Decision Maker

Use the base version, making the same changes as are listed above for Models I and III, with one exception: Add a semicolon to the end of lines 140-160, 320-340, 490-510, 640-660, 1050, 1060, 1090, 2010-2040, and 3010 instead of the lines given for Models I and III.

ONE IN SIX— TAKE YOUR PICK

**PROGRAM BY STEVEN HOROWITZ
PUZZLE BY JOSH GOSFIELD**

Sodaville U.S.A. is pretty much like any other small town. People tend to weave in and out of one another's lives. On the surface, the six people in this puzzle seem totally unrelated. But as you delve deeper into their lives, you'll find the complex web of connections. Some of them might have met when they were young and others when they were old. But only one of them has connections with all of the other five.

It's your job to poke and probe until you find out who this person is. To try to get to know the Sodaville group, you may explore their lives by decades (ages 10, 20, 30, 40, and 50) and ask them questions about five areas of their lives. For ages 10 and 20, you can inquire about their hobby, the school they attended, or who their "steady date" was; for ages 30, 40, and 50, you may ask for their hobby, the company they worked for, or the name of their spouse. (Be sure to set your computer for all up-

STEVE HOROWITZ, a 16-year-old junior at Staples High School in Westport, Connecticut.

JOSH GOSFIELD wanted to be a baseball player when he was 10; when he was 20 he studied agricultural engineering; at 30 he is a designer at Fortune. When he's 40 he hopes to rule the world.

percase letters.)

The computer will ask you whom you would like to speak to. Type in the person's name exactly as shown in the illustration. The computer will then ask what you would like to know about that person. You may phrase a question any way you wish, but always include one of the five areas and the decade (in digits) in the question. For example: WHAT WAS YOUR HOBBY AT 30? But ask about only one age and one category at any time.

Be nosy. Don't be afraid to ask personal questions! Remember, Sodaville is a small town, and people may have run into one another just about anywhere and under any circumstances, from a quick game at the tennis court to a romance at the office or school. Years later, they may have met and married one (or more) of their sandbox playmates. But for a connection to have been made between any two people, they must have been at the same place at the same time.

When you think you know who "know-'em-all" is, type GUESS and press RETURN or ENTER. You'll have to state at what age your choice crossed paths with each of the other five people. Remember: the web of connections grows more complex as the years march on.

Base Version (Commodore 64)/Crossing Paths

```

10 REM CROSSING PATHS, BY STEVE HOROWITZ
20 DIM A$(50),P(6,3,5):U$=CHR$(34)
40 FOR A=1 TO 44:READ A$(A):NEXT A
50 FOR Q=1 TO 5:FOR H=1 TO 3:FOR A=1 TO 6:READ P(A,H,Q)
):NEXT A:NEXT H:NEXT Q
60 FOR A=1 TO 7:READ D$(A):NEXT A
70 TK$="WHOM DO YOU WISH TO TALK TO?":TNS="WHOM DO YOU
WISH TO TALK TO NOW?"
80 HPS="I HOPE I'M INTERPRETING YOUR MEANING CORRECTLY
... "
90 PRINT CHR$(147):PRINT TAB(11);":CROSSING PATHS:"
100 PRINT:PRINT "WHAT IS YOUR NAME?":INPUT N$:PRINT CH
R$(147)
110 PRINT:PRINT Z$=TK$:TK$=TNS:GOSUB 1000
120 PRINT:Z$="(TYPE "+U$+"GUESS"+U$+" TO GUESS THE ANS
WER, "+U$+"QUIT"+U$
130 Z$=Z$+" TO STOP THE PROGRAM)":GOSUB 1000:NAS$="" :IN
PUT NAS$
140 IF NAS$="GUESS" THEN 670
150 IF NAS$<>"QUIT" THEN 180
160 PRINT CHR$(147):PRINT:Z$="SORRY, "+N$+": BETTER LU
CK NEXT TIME.":GOSUB 1000
170 GOTO 820
180 GOSUB 3000:IF N=0 THEN 110
190 PRINT CHR$(147):PRINT:Z$="HELLO, "+N$+", THIS IS "
+N$+"":GOSUB 1000
200 Z$="WHAT DO YOU WANT TO KNOW ABOUT ME?":GOSUB 1000
:TY$="" :PRINT"=->";
210 GET LR$:IF LR$="" THEN 210
220 IF LR$=CHR$(13) THEN 280
230 TY$=TY$+LR$
240 IF LR$<>CHR$(20) OR LEN(TY$)=0 THEN 270
250 IF LEN(TY$)<3 THEN TY$="" :GOTO 270
260 TY$=LEFT$(TY$,LEN(TY$)-2)
270 PRINT LR$;:GOTO 210
280 IF TY$="" THEN PRINT CHR$(147):GOTO 110
290 PRINT:PRINT:PRINT "HMMM...":PRINT
300 DI$="" :D=0
310 FOR A=1 TO LEN(TY$):K$=MID$(TY$,A,1)
320 IF K$<="/" OR K$>=":" THEN 340
330 DI$=DI$+K$:IF A>LEN(TY$) THEN 350
340 IF DI$<>"" THEN D=VAL(DI$):DI$=""
350 NEXT A:FD=0:IF LEN(TY$)<6 THEN 400
360 FOR A=1 TO LEN(TY$)-1:FOR B=1 TO 7
370 IF A+LEN(D$(B))-1>LEN(TY$) THEN 390
380 IF MID$(TY$,A,LEN(D$(B)))=D$(B) THEN FD=B
390 NEXT B:NEXT A
400 IF FD<>0 THEN 430
410 PRINT CHR$(147):PRINT:Z$="I'M SORRY, BUT I DON'T U
NDERSTAND YOU."
420 GOSUB 1000:GOSUB 2000:GOTO 110
430 IF D<>0 THEN 460

```

WILMA

FRED

CARLA

SALLY

WALTER

PHILLIP

HELLO!

How Y'DOIN'?

HIYA!

HOWDY

GOOD DAY

WHAT'S UP?

10 YEARS OLD



I'M STUDYING HOME EC.

I'M STUDYING GIRLS

I'M STUDYING DRAMA

I'M STUDYING SHORTHAND

I'M STUDYING BUSINESS

I'M STUDYING PROGRAMMING

20 YEARS OLD



I'M A WAITRESS

I'M AN ELECTRICIAN

I'M AN ACTRESS

I'M A SECRETARY

I'M AN OFFICE MANAGER

I'M A COMPUTER PROGRAMMER

30 YEARS OLD



I'M A CHEF

I'M AN ELECTRICIAN

I'M A MOVIE STAR

I'M A HOUSEWIFE

I'M A VICE PRESIDENT

I'VE STARTED A COMPANY

40 YEARS OLD



I'M A RESTAURANT OWNER

I'M AN ELECTRICIAN

I'M IN PUBLIC RELATIONS

I'M A HOUSEWIFE

I'M A PRESIDENT

I'M RUNNING MY COMPANY

50 YEARS OLD



J & A H

PUZZLE

```

440 PRINT:Z$="YOU MUST SPECIFY WHAT AGE YOU ARE TALKIN
G ABOUT."
450 GOSUB 1000:GOSUB 2000:GOTO 110
460 DT=DT/10:IF (INT(DT)=DT) AND DT>=1 AND DT <=5 THEN
490
470 Z$="YOU MAY ONLY ASK ABOUT AGES 10, 20, 30, 40, AN
D 50."
480 GOSUB 1000:GOSUB 2000:GOTO 110
490 IF FD<>1 THEN 520
500 Z$="AT AGE "+STR$(D)+" MY "+D$(1)+" WAS "+A$(P(N,1
,DT))+"."
510 GOSUB 1000:GOSUB 2000:GOTO 110
520 IF FD>3 THEN 590
530 WR=0:IF FD=2 AND DT>2 THEN FD=3:Z$=HP$
540 IF FD=3 AND DT<3 THEN FD=2:Z$=HP$
550 Z$=Z$+"AT AGE "+STR$(D)+" "
560 IF P(N,2,DT)<>7 THEN 580
570 Z$=Z$+"I WAS "+A$(7)+" "+D$(FD)+"":GOSUB 1000:GOS
UB 2000:GOTO 110
580 Z$=Z$+"MY "+D$(FD)+" WAS "+A$(P(N,2,DT))+"":GOSUB
1000:GOSUB 2000:GOTO 110
590 IF FD=4 AND DT>2 THEN Z$=HP$:FD=5:GOTO 610
600 IF FD>4 AND DT<3 THEN Z$=HP$:FD=4
610 IF FD=6 AND (N>4 OR N=2) THEN Z$=HP$:FD=7
620 IF FD=7 AND N<5 AND N<>2 THEN Z$=HP$:FD=6
630 Z$=Z$+"AT AGE "+STR$(D)+" "
640 IF P(N,3,DT)<>43 THEN 660
650 Z$=Z$+"I WAS "+A$(43)+"":GOSUB 1000:GOSUB 2000:GO
TO 110
660 Z$=Z$+"MY "+D$(FD)+" WAS "+A$(P(N,3,DT))+"":GOSUB
1000:GOSUB 2000:GOTO 110
670 PRINT CHR$(147):PRINT:Z$="WHO DO YOU THINK IT IS?"
:GOSUB 1000:INPUT NA$
680 GOSUB 3000:IF N=0 THEN 110
690 PRINT CHR$(147):PRINT:Z$="AT WHAT AGE WAS "+NA$+"
CONNECTED TO..":GOSUB1000
700 FL=0:FOR A=37 TO 42
710 IF A=N+36 THEN 740
720 PRINT A$(A);:INPUT S
730 IF S<>(ASC(MID$(A$(44),A-36,1))-58)*10 THEN FL=FL+
1
740 NEXT A
750 IF N=6 AND FL=0 THEN 780
760 PRINT CHR$(147):PRINT:PRINT "SORRY, YOU'RE WRONG."
:PRINT
770 GOSUB 2000:GOTO 110
780 PRINT CHR$(147):PRINT
790 POKE 54296,15:POKE 54278,228:POKE 54273,57
800 POKE 54276,33:FOR T=1 TO 200:NEXT T:POKE 54276,0
810 Z$="YOU SOLVED THE PUZZLE!":GOSUB 1000
820 END
1000 IF LEN(Z$)<40 THEN 1060
1010 FOR A=1 TO 39
1020 IF ASC(MID$(Z$,A,1))=32 THEN J=A
1030 NEXT A
1040 PRINT LEFT$(Z$,J-1)
1050 Z$=RIGHT$(Z$,LEN(Z$)-J):GOTO 1000
1060 PRINT Z$:PRINT:Z$="":RETURN
2000 Z$="PRESS ANY KEY TO CONTINUE.":GOSUB 1000
2010 GET AN$:IF AN$="" THEN 2010
2020 PRINT CHR$(147):RETURN
3000 N=0:FOR A=37 TO 42
3010 IF NA$=A$(A) THEN N=A-36
3020 NEXT A
3030 IF N<>0 THEN 3060
3040 PRINT CHR$(147):PRINT:Z$="THERE IS NO ONE HERE BY
THAT NAME."
3050 GOSUB 1000:GOSUB 2000
3060 RETURN
4000 DATA SODAVILLE ELEMENTARY,SPUTZ VOCATIONAL,PIZZA
VILLAGE,LE STUFFE
4010 DATA CHEZ WILMA,FRANKLIN MILITARY,NOT ASSOCIATED
WITH ANY,HOME LIGHTING
4020 DATA DATA-TECH,GOLDEN STUDIOS,EDWARDS ELEMENTARY
4030 DATA SODAVILLE COMMUNITY COLLEGE,ARLES ACADEMY,ES
TON UNIVERSITY
4040 DATA ABC INDUSTRIES,MORRIS POLYTECHNIC,MAKING MUD
PIES,BAKING,BASEBALL

```

```

4050 DATA MAKE-BELIEVE,FILMS,NIGHTLIFE,PLAYING THE STO
CK MARKET,JOGGING
4060 DATA WALKING,KNITTING,TV,RUNNING A LEMONADE STAND
,CLASSICAL MUSIC,WINE
4070 DATA TENNIS,YACHTING,SCIENCE FICTION,CHESS,PHOTOG
RAPHY,GOLF
4080 DATA WILMA,FRED,CARLA,SALLY,WALTER,PHILLIP,UNATTA
CHED,;>?;=!
4090 DATA 17,19,20,17,28,33,1,6,11,1,13,1,43,43,41,42
4100 DATA 39,40,18,19,21,24,29,33,2,7,12,12,14,16,38
4110 DATA 37,41,43,39,43,18,19,22,25,31,34,3,8,10,8
4120 DATA 15,15,43,40,43,38,43,18,19,22,26,36,35,4
4130 DATA 9,10,7,15,9,43,40,43,38,43,43,18,19,23,27,32
4140 DATA 30,5,10,10,7,15,9,43,40,42,38,43,39
4150 DATA HOBBY,SCHOOL,COMPANY,STEADY DATE,SPOUSE,HUSB
AND,WIFE

```

MODIFICATIONS FOR OTHER COMPUTERS

ADAM/Crossing Paths

Use the base version, with the following alterations:
 Change PRINT CHR\$(147) to HOME in lines 160, 190, 280, 410, 670, 690, 760, 2020, and 3040. Omit lines 30, 220, 790, and 800. Finally, change lines 90, 210, 780, 820, 1000, and 1010 to read as follows:
 90 HOME:INVERSE:HTAB 8:PRINT ":CROSSING PATHS:":NORMAL
 210 GET LR\$:IF LR\$=CHR\$(13) THEN 280
 780 HOME
 820 END
 1000 IF LEN(Z\$) < 31 THEN 1060
 1010 FOR A=1 TO 30

Apple/Crossing Paths

Use the base version, with the following alterations:
 Change PRINT CHR\$(147) to HOME in lines 160, 190, 280, 410, 670, 690, 760, 2020, and 3040. Omit lines 30, 220, 790 and 800. Finally, change lines 90, 210, 780, and 820 to read as follows:
 90 HOME:INVERSE:HTAB 11:PRINT ":CROSSING PATHS:":NORMA
 L:POKE 34,1
 210 GET LR\$:IF LR\$=CHR\$(13) THEN 280
 780 HOME:PRINT:FOR A=1 TO 4:PRINT CHR\$(7):NEXT A
 820 POKE 34,0:END

Atari/Crossing Paths

First type in the following lines:
 20 DIM A\$(493),A(44,2),D\$(46),D(7,2),P(15,6),Z\$(100),H
 P\$(50),TY\$(80),TK\$(32),NS\$(20),DIS\$(10),NA\$(20),LR\$(1)
 30 DIM US\$(1),RDS\$(27),TNS\$(32),K\$(1),CS\$(16):US=CHR\$(34)
 :OPEN #1,4,0,"K":CS\$=":CROSSING PATHS:"
 40 FOR A=1 TO 44:READ RDS:A(A,1)=LEN(A\$)+1:A\$(LEN(A\$)+
 1)=RDS:A(A,2)=LEN(A\$):NEXT A
 50 FOR Q=1 TO 5:FOR H=1 TO 3:FOR A=1 TO 6:READ X:P((Q*
 3)+H-3,A)=X:NEXT A:NEXT H:NEXT Q
 60 FOR A=1 TO 7:READ RDS:D(A,1)=LEN(D\$)+1:D\$(LEN(D\$)+1
)=RDS:D(A,2)=LEN(D\$):NEXT A
 90 PRINT CHR\$(125):POSITION 11,0:FOR C=1 TO LEN(CS\$):P
 =ASC(CS\$(C,C))+128:PRINT CHR\$(P):NEXT C
 110 PRINT:PRINT:PRINT TK\$:TK\$=TNS:Z\$="":PRINT
 120 PRINT "(TYPE ";US;"GUESS";US;" TO GUESS THE ANSWER
 ,":PRINT US;"QUIT";US;" TO STOP THE PROGRAM)":INPUT NA
 \$
 150 IF NA\$="QUIT" THEN PRINT CHR\$(125);"SORRY, ";NS\$;"
 BETTER LUCK NEXT TIME.":GOTO 820
 190 PRINT CHR\$(125):PRINT:PRINT "HELLO, ";NS\$;" THIS IS
 ";NA\$;"."
 200 PRINT:PRINT "WHAT DO YOU WANT TO KNOW ABOUT ME?":T
 Y\$="":PRINT:PRINT "=->";
 210 GET #1,LR:LR\$=CHR\$(LR):IF LR=155 THEN 280
 230 TY\$(LEN(TY\$)+1)=LR\$
 240 IF LR\$<>CHR\$(126) OR LEN(TY\$)=0 THEN 270
 260 TY\$=TY\$(1,LEN(TY\$)-2)
 310 FOR A=1 TO LEN(TY\$):K\$=TY\$(A,A)
 320 IF K\$>"/" AND K\$<" THEN DIS\$(LEN(DIS\$)+1)=K\$:IF A<
 >LEN(TY\$) THEN 350
 370 IF A+LEN(D\$(D(B,1),D(B,2)))-1 > LEN(TY\$) THEN 390