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In the April, 1982 issue of MICROCOMPUTING in the Letters To The Editor column, there was a letter expounding the speed of the Apple computers. A shell sort program was listed and the sort times were given for sorts of 200, 300, AND 500 numbers. In the June issue times were given for the IBM Personal Computer. In the August issue a letter was PRINTED expounding the speed of the Atari computer. Two forms of Atari BASIC were tested, Atari Microsoft Basic and ATARI 9K ROM BASIC. My curiosity was aroused. I converted the program to TI Extended BASIC. As the chart below shows, TI IS MUCH faster than the Apple, the IBM PC, and Atari with BK ROM in the shell sort. Only Atari with Microsoft BASIC is faster than TI. To run the program you must input the number of numbersto sort, the start time, and the finish time. Enter the time as follows: 07:06:00(hours:minutes:seconds). The Atari and the TI programs are listed below.

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	45	θí	13:
נבוב	1.19	131	444
-1 FC	64	166	255
TAKI (MSB)			48
TART RV			547

## ATARI LISTING

- .0 REM SHELL SDRT TEST
- 10 DIM A(500)
- TO CLS:PRINT SHELL SORT :PRINT
- 40 INPUT How many numbers (2-500) :NN
- 50 IF NN<2 OR NN>500 THEN END
- 60 FOR I=1 TO NN
- 70 A(I)=RND(1)\*NN
- 30 NEXT I
- 70 PRINT Start ;TIME\$:START=TIME:D=NN:FLAG=0
- 100 D=INT((D+1)/)
- .16 FOR N=1 TO NN-D
- .20 IF A(N) (=A(N+D) THEN BUTO 150
- 30 T=A(N):A(N)=A(N+D):A(N+D)=T
- 40 FLAG=1
- 50 NEXT N

FLAG=1 THEN FLAG=0:60TO 110

IF D>1 THEN GOTO 100

- ev PRINT Finish ;TIMES#:FINISH=TIME
- 90 REM
- 00 REM
- 10 ANS=FINISH-START: ANS=INT(ANS/60)
- 20 PRINT Time ; ANS; Secs : PRINT
- TO GOTO 40

## TI CHOTHE

- The Fifth and Shifter
- 15 Childellite
- 20 CALL CLEAR :: PRINT "SHELL SORT" :: PRINT
- 30 INPUT "HOW MANY NUMBERS (2-500) ?:":NN
- 40 IF NN<2 OR NN>500 THEN 260
- 50 FOR I=1 TO N
- 60 A(I)=INT(RND\*NN+.5)
- 70 NEXT I
- 80 B\$=TIME\$ :: INPUT "START ":B\$
- 90 D=NN :: FLAG=0
- 100 D = INT((D+1)/2)
- 110 FOR N=1 TO NN-D
- 120 IF A(N) <= A(N+D) THEN 60TO 150
- 130 T=A(N):: A(N)=A(N+D):: A(N+D)=T
- 140 51.66-1
- 150 NEXT N
- 160 IF FLAG>1 THEN FLAG=00 :: 60TO 110
- 170 IF D>1 THEN 100
- 180 LET AS=TIMES :: INPUT "FINISH ":AS
- 190 N=2
- 200 M=LEN(B\$)-N+1
- 210 START=VAL(SEG\$(B\$,M,2))+VAL(SEG\$(B\$,4,2))\$60+VAL(SEG\$(B\$,1,2))\$3600
- 230 FINISH=VAL (SEG\$(A\$,M,2))+VAL (SEG\$(A\$,4,2))\$60+VAL (SEG\$(A\$,1,2))\$3600
- 240 TIME=FINISH-START
- 250 PRINT "TIME ":TIME: "SEC"
- 260 END

ENALL FEMILIAS:

The next five pages contain more program reviews:

Color Math Educational Children 6-12 None rate B COLORMATH Gives 3 setsof problems. Varifies answer. Gives new problems in new screen color. Finger Spell Educational Both None FINGERSPEL Use Call File(1), New, if using disk Excelent graphics of sign language for the deaf person Learn by keying letters, or by recognizing the sign of alphabet. Ham Fille 出出的权 MICHAEL TO Disk/Cassett rate B List call letters or names of Hams. Fractical for loging or directory HAM-FILE Haze Race Game Both Controllers rate B MAZERACE 2 players find exit from maze using controllers Don't collid with other player or lose. Points accumulate with each game. Different maze created with each game. Mother Goose Game Children 1-7 Speech Needs speech synthisizer for effect.
Gives the print of nursery rymes along with voice/music. MOTHRGOOSE Othello Came 145111 None rate M 2 players or against computer. Must press 2 to start game. (not clear in directions) 3 levels of experience. OTHELLO-II Playing computer may be slow. Past Tense Educational Children None rate A Gives present tense of a sentence (quite cut too) Asked to give past tense of verb. PAST-TENSE Corrects If wrong rewards with music if right. Invoice Form Adult Business Printer rate C Open statment might need changes for printer. You give address, date, name, amount for invoice form No provision to change for your business. STATEMENT Educational thuldren None rate A State Capitals STCAPITALS Gives states you select among for cities the capital. Response by number, very colorful.

trenth War Game Goth F Basic, Controller rate C

Excellent prompts for loging records send/receive. Good use for saving on disk/cassett.

Modem, Disk/Cassett

rate <u>A</u>

Keeps score of responses.

edult.

User

Logon Terminal

TEIILOGON

TRENCHWAR

Good graphics and sound effects.
Ten men move across the field of shell fire & gas bombs.
Control men by designated numbers.
No real skill in game more in chance if hit.
Horizontal movement only, not able to move during shelling.

BY BOBSY MAN ETTEN

LINEAR-REG By L. Poole & M. Borchers MATH - Statistics (SBasic) (Requires 6 sectors on disk - 1 page listing)

Finds the equation of a straight line which best fits a set of data points that you enter.

Calculates Coefficient of Correlation ans Standard Error of Estimate.

You can input any values for 'X' and it calculates the values for 'Y' from the equation.

MOHRCIRCLE (Author not listed) ENGINEERING - Combined Stress (SBasic) (Requires 5 sectors on disk - 1 page listing)

A program to combine stresses in two different directions and find the resultant stress.

For use in mechanical or civil engineering for beams, shafts, etc.

PROJECTILE (Author not listed GAME - Firing Big Gun (SBasic) (Requires 44 sectors on disk - 8 page listing)

Has 4 optional firing problem types: Ground to ground (1 dim), ground to ground (2 dim), Balloon to ground (1 dim), building to ground (2 dim).

These are actually physics problems which can be calculated with a small calculator or you can make a guess. However, you are not likely to get any correct by guessing.

Several equations are given at start of program which can be used.

TOTRESISTN By Robert Cashman ELECTRONICS - Resistors (SBasic) (Requires 5 sectors on disk - 1 page listing)

Calculates total resistance of any number of resistors either in series or in parallel.

That is all that this program does.

MATHQUIZ By Russell Hirschy MATH - Arithmetic (SBasic) (Requires 10 sectors on disk - 1+ page listing)

Offers a sample test of 5 simple problems in addition, subtraction, multiplication and division. Multiple choice answers.

Tells you how to make up your own test using this program.

PRICECOMPR By Ed Culkin PRICE Comparison (SBasic) (Requires 11 sectors on disk - 2 page listing)

For use with PRINTER only. (Same program for screen is COMPARE). Compare prices of products that are identical or similar in design & construction.

Shows the percent difference in price of each one.

You enter the coefficients of the two equations.

Similar to LINE-EQUAN except does not plot the equations.

SPANISHTST (Author not listed) LANGUAGE - Spanish (SBasic) (Requires 5 sectors on disk - 1 page listing)
Computer gives you words in Spanish - you type in equivalent word in English. 20 different words are included in this test.
Your percentage of correct answers is shown at end of test.

XSPRITEDEM By G. Mineo GRAPHICS - Demonstration (XBasic)
(Requires 6 sectors on disk - 1 page listing)
Colorful sprite demonstration - some nice effects.
May give you some ideas on how to use sprites.

XYOULIGHT by Sam Moore, Jr. MUSIC - with Graphics (XBasic)
(Requires 16 sectors on disk - 2 page listing)
Must have disk data file LIGHT-DATA in disk drive to RUN program.
Music is "You Light Up My Life" with graphics display.
Clouds move across the sky and lighthouse sends out flashes of light periodically.
A good music program as always from Sam Moore, Jr.

BUMBLEBOGI By Jack Fina (Jazzed up by Sam Moore, Jr.) MUSIC - Graphics.

(Requires 45 sectors on disk - 6½ page listing)

A neat musical exhibition combined with 9 bees in graphics.

Automatically repeats after each time through the program.

Change line 4200 to: GOTO 19580 to make it end after one play.

Or, more simply, just delete line 4200 and it will not repeat.

DIVIDE (Author not listed MATH - Division (SBasic) (requires 3 sectors on disk - ½ page listing)

A super simple program which does long division only.

You enter the dividend, the divisor and specify how many decimal places you want the answer to be printed.

FLAGORAMA (Author not listed) GRAPHICS - Flags (SBasic)

(Requires 34 sectors on disk - 7 page listing)

Will fill the screen with your choice of 30 different national flags including the 48-star version of the United States flag.

Menu lists the 30 different countries after each flag is held on the screen during automatic time delay loop.

FULLMOON (Author not listed) SCIENCE - Astronomy (SBasic)

(Requires 10 sectors on disk - 1½ page listing)

You specify the year and the program calculates the exact date and time down to the hour and second of the occurrence of each NEW moon & each FULL moon during that year.

Also gives the Julian date of each occurrence.