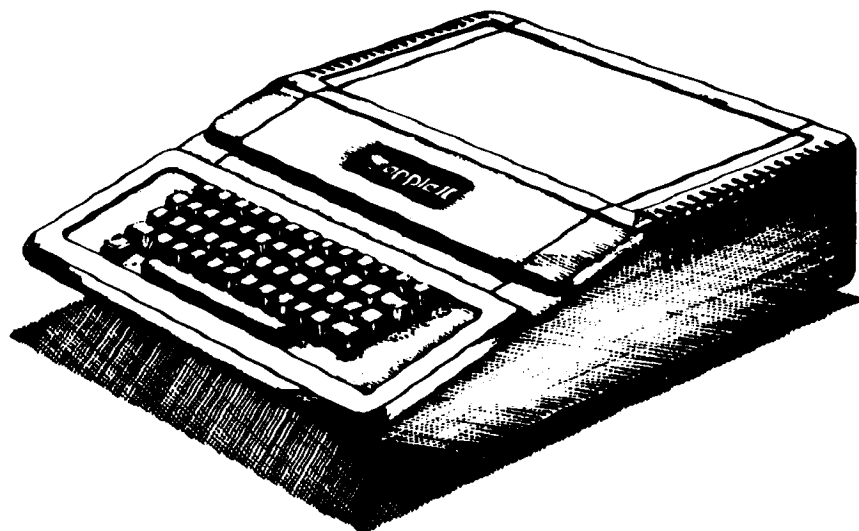


Apple 2 Computer Technical Information



Apple II Computer Family Information

AppleSoft BASIC Source Listing
Aug. 1983 (see also docs: 49, 194)

Document #

7

Ex Libris David T. Craig

Apple II Computer

AppleSoft BASIC Interpreter Source Code Listing

Language: 6502 Assembly
Author: Microsoft and Apple Computer
Date: August 1983



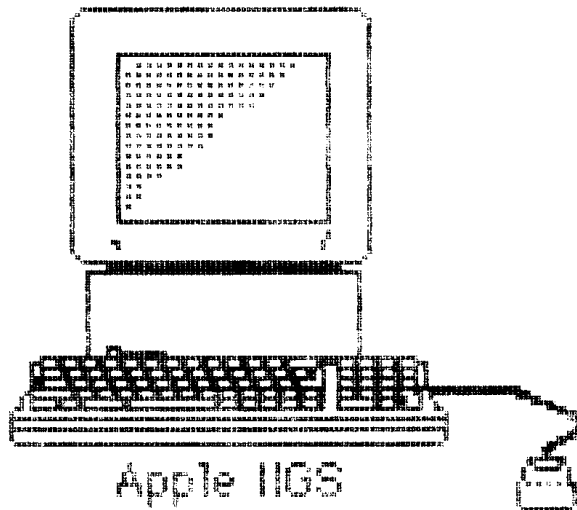
Apple II
Apple II+



Apple IIe



Apple IIc



Apple II GS

Pages: 145

Comments about the AppleSoft BASIC Source Code Listing

by David T. Craig - 28 Dec 1994

People

Token Table: p. 11
Error Messages: p. 13

Randy Wigginton (p. 2)

John Arkley (p. 2)

J. R. Huston (p. 2) "LOLLY" = Apple IIc

Stere Wozniak (p. 124)

Misc.

- Location KIMY (p. 4, line 90) seems to use the name "KIM" which was the 1st 6502-based computer from the mid-1970's.
- The Microsoft programmer may have been British (or European) since the Latin "N.B." (Nota Bene) is used (p. 5, line 126)

[illegible]

[illegible]

```

;TRACE ON/OFF
;FOR FLASH, NORMAL, INVERSE
;DISPLAY MODES.

```

```

;PLACE FOR ERROR. DURING ERROR.
;SAVE STACK POINTER
;FOR EVERY TIME.
;RUN-ONLY PROGRAM?

```

"DTCA2DOC-007-004.PICT" 197 KB 2001-03-26 dpi: 250h x 250v pix: 1975h x 2523v

"DTC A2DOC-007-005.PICT" 196 KB 2001-03-26 dpi: 250h x 250v pix: 2005h x 2529v

"DTCA2DOC-007-006.PICT" 226 KB 2001-03-26 dpi: 250h x 250v pix: 2000h x 2564v

```
00000000000000000000
00000000000000000000
=====
456789AABACADAEAFEFF
00000000000000000000
00000000000000000000
```

[illegible]

കരകരകരകരകരകര ൩൩൩
 ഫഫഫഫഫഫഫഫഫഫ
 മമമമമമമമമമമമമമ

0 ARGUMENT

;;SOMETHING FOR 'SHIFTR' TO USE.
(XED) ----;

```

A SIGN REFLECTING THE RESULT.
OVERFLOW BYTE OF THE FAC DESCRIPTOR.
POINTER TO A STRING OR DESCRIPTOR.
POINTER TO A FBUFFER USED BY FOUT.
POINTER TO BUUF USED BY CRUNCH.
POINTER TO STRING OR DESC.
POINTER INTO POLYNOMIAL COEFFICIENTS.
ABSOLUTE LINEAR INDEX IS FORMED HERE.

```

B200002
A0A0A0
000000
000000

"DTCA2DOC-007-008.PICT" 139 KB 2001-03-26 dpi: 250h x 250v pix: 2010h x 2282v

"DTCA2DOC-007-009.PICT" 108 KB 2001-03-26 dpi: 250h x 250v pix: 1995h x 2247v

```

29-MAR-84 08:16 PAGE 10

ISPATCH TABLES, RESERVE
344 LET-1
345 GOTO-1
346 RUN-1
347 IF-1
348 RESTOR-1
349 $3F4
350 GOSUB-1
351 RETURN-1
352 REM-1
353 STOP-1
354 ONGOTO-1
355 FNWAIT-1
356 LOLLY
357 $3F4
358 $3F4
359 LOAD-1
360 SAVE-1
361 FIN
362 PLIST
363 OFF
364 ELSE
365 FIN
366 DOT
367 ELSE
368 FIN
369 DEF-1
370 POK-1
371 PRINT-1
372 CONT-1
373 LIST-1
374 CLEAR-1
375 GET-1
376 SCRATH-1
377 SGN
378 INT
379 ABS
380 USRPOK
381 ERROR
382 PDLHNDL
383 POS
384 SQR
385 RND
386 LOG
387 EXP
388 COS
389 SIN
390 TAN
391 ATN
392 PEEK
393 LEN
394 STR$
395 VAL
396 ASC
397 CHR$
398 LEFT$
399 RIGHT$
400 MID$
401 FADDT-1

;WHY THE HELL NOT

;UNSUPPORTED IN LOLLY, DO & HOOK

;FILL W/ GET ADDR.

;DUMMY FILL FOR SCRNC).
    
```

```

02 ROMSOFTA
0054:45 DA
0056:30 DA
0058:11 DA
005A:C8 DA
005C:E4 DA
005E:20 DA
0060:0A DA
0062:03 DA
0064:00 DA
0066:00 DA
0068:00 DA
006A:00 DA
006C:F4 03
006E:F4 03
0070:
0072:
0074:
0076:
0078:
007A:
007C:
007E:
0080:
0082:
0084:
0086:
0088:
008A:
008C:
008E:
0090:
0092:
0094:
0096:
0098:
009A:
009C:
009E:
00A0:
00A2:
00A4:
00A6:
00A8:
00AA:
00AC:
00AE:
00B0:
00B2:
00B3:
    
```

"DTCA2DOC-007-011.PICT" 120 KB 2001-03-26 dpi: 250h x 250v pix: 1990h x 2091v

29-MAR-84 08:16 PAGE 12

```

02 RMSOFTA
D149:49 4E 52 4D
D14F:46 4E 56 45
D15B:43 4E 41 4F
D161:50 4E 00 0A1
D164:58 54 1 0C2
D168:44 4E 4D 45
D16E:44 4E 45 52
D174:52 4E 45 51
D17F:52 4E 45 52
D18A:53 4E 45 45
D190:53 4E 45 45
D193:47 4E 45 45
D197:52 55 CE
D19A:52 55 53 54
D19C:52 4F 53 55
D1A3:47 4F 53 55
D1A9:52 45 54 CD
D1AF:52 45 54 CD
D1B2:53 54 CE
D1B8:47 4F 41 4C
D1BC:47 4F 41 4C
D1C4:53 45 56 C5
D1C7:53 45 45 4E
D1C8:50 52 49 0BA
D1D0:43 4E 53 45
D1D4:43 4E 45 45
D1D8:43 4E 45 45
D1DD:4E 45 45 45
D1E3:54 41 42 A8
D1E7:54 CF
D1E9:46 CE
D1EB:53 50 43 A3
D1EF:54 48 45 CE
D1F3:41 D+
D1F5:4E 4F D4
D1F8:53 54 45 00C6
D1FC:

ISPATCH TABLES, RESERVE
DCI I "NORMAL"
DCI I "INVERSE"
DCI I "FLASH"
DCI I "COLOR="
DCI I "POPTK+30"
DCI I "DATATK+30"
DCI I "VIABM:"
DCI I "HIMEM:"
DCI I "LONERR:"
DCI I "RESUME"
DCI I "RECALL"
DCI I "STORE="
DCI I "SPEED="
DCI I "LET"
DCI I "GOTO"
DCI I "POPTK+10"
DCI I "RUN"
DCI I "IF,RESTORE"
DCI I "&GOSUB"
DCI I "GOSUB+5"
DCI I "GOSUB+5"
DCI I "RETURN"
DCI I "RECALL"
DCI I "GOSUB+2"
DCI I "STOP"
DCI I "ON IT"
DCI I "WAIT"
DCI I "LOAD"
DCI I "SAVE"
DCI I "DEFE"
DCI I "POKE"
DCI I "PRINT+8"
DCI I "REMTK+8"
DCI I "CONT"
DCI I "LIST"
DCI I "CLEAR"
DCI I "GET"
DCI I "NEWK+5"
DCI I "PRINT+5"
DCI I "LIST"
DCI I "TABATK+1"
DCI I "SCRATK+1"
DCI I "TABATK+1"
DCI I "FN"
DCI I "TOTK+1"
DCI I "SPC+"
DCI I "FNTHK+1"
DCI I "THEN"
DCI I "SPCTK+1"
DCI I "AT"
DCI I "THENJK+1"
DCI I "NOT"
DCI I "ATTKN+1"
DCI I "ATTEN"
DCI I "NOTTK"
DCI I "STEPTK+1"
DCI I "END OF COMMAND"
DCI I "TABATK"
DCI I "TOTK"
DCI I "FNTHK"
DCI I "SPCTK"
DCI I "THENTK"
DCI I "ATTEN"
DCI I "NOTTK"
DCI I "STEPTK"

;FOR DISK HOOKS.

```

"DTCA2DOC-007-013.PICT" 134 KB 2001-03-26 dpi: 250h x 250v pix: 1995h x 2297v


```

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02 ROMSOFT A
D2A5: 4F 50 45 52
D2AD: 4F 55 54 20
D2BA: 55 4E 44 00
D2CB: 42 41 44 00
D2D8: 52 45 44 00
D2E5: 44 49 56 49
D2F3: 49 4C 4C 00
D303: 54 59 50 45
D310: 53 54 52 49
D31F: 46 4F 52 40
D322: 43 41 4E 27
D340: 55 4E 44 45
D350: 20 45 52 52
D356: 07 00 49 20
D358: 20 49 4E 20
D35C: 00 52 45 41
D35E: 42 07 52 00
D363: 07 52 00 00

ISPATCH TABLES, RESERVE
576 ERROV
577 ERROM
578 ERRUS
580 ERRBS
581 ERRDD
582 ERRDVO
583 ERRIO
584 ERRTM
585 ERRRLS
586 ERRST
587 ERRCN
588 ERRUF
589 : NEEDED
590 ERR:
591 INTXT:
592 BRKTX:
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607

"OVERFLOW"
ERRC+16
ERRUT
ERRUV+8
!UNDEF'D
ERRUM+13
ERRBAD
ERRUS+17
ERRDIM+13
ERRDIVISION
ERRDO+13
ERRILLEGAL
ERRDVO+16
ERRTYPE
ERRID+14
ERRSTRNG
ERRTM+13
ERRFORMULA
ERRLS+15
ERRCAN
ERRSI+19
!UNDEF'D
ERRCN+14
ERRCNCN IN ALL VERSIONS-
ERROR
IN
OF MEMORY
STATEMENT!
SUBSCRIPT
ARRAYS
BY ZERO
DIRECT
MISMATCH
TOO LONG
TOO COMPLEX
CONTINUE!
FUNCTION!

```

```

29-MAR-84 08:16 PAGE 15

ENERAL STORA
02 ROMSOFT
0365: 0012
0366: 0012
0367: 0012
0368: 0012
0369: 0012
0370: 0012
0371: 0012
0372: 0012
0373: 0012
0374: 0012
0375: 0012
0376: 0012
0377: 0012
0378: 0012
0379: 0012
0380: 0012
0381: 0012
0382: 0012
0383: 0012
0384: 0012
0385: 0012
0386: 0012
0387: 0012
0388: 0012
0389: 0012
0390: 0012
0391: 0012
0392: 0012
0393: 0012
0394: 0012
0395: 0012
0396: 0012
0397: 0012
0398: 0012
0399: 0012
0400: 0012
0401: 0012
0402: 0012
0403: 0012
0404: 0012
0405: 0012
0406: 0012
0407: 0012
0408: 0012
0409: 0012
0410: 0012
0411: 0012
0412: 0012
0413: 0012
0414: 0012
0415: 0012
0416: 0012
0417: 0012
0418: 0012
0419: 0012
0420: 0012
0421: 0012
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0424: 0012
0425: 0012
0426: 0012
0427: 0012
0428: 0012
0429: 0012
0430: 0012
0431: 0012
0432: 0012
0433: 0012
0434: 0012
0435: 0012
0436: 0012
0437: 0012
0438: 0012
0439: 0012
0440: 0012
0441: 0012
0442: 0012
0443: 0012
0444: 0012
0445: 0012
0446: 0012
0447: 0012
0448: 0012
0449: 0012
0450: 0012
0451: 0012
0452: 0012
0453: 0012
0454: 0012
0455: 0012
0456: 0012
0457: 0012
0458: 0012
0459: 0012
0460: 0012
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0464: 0012
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0467: 0012
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0472: 0012
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0486: 0012
0487: 0012
0488: 0012
0489: 0012
0490: 0012
0491: 0012
0492: 0012
0493: 0012
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0495: 0012
0496: 0012
0497: 0012
0498: 0012
0499: 0012
0500: 0012
0501: 0012
0502: 0012
0503: 0012
0504: 0012
0505: 0012
0506: 0012
0507: 0012
0508: 0012
0509: 0012
0510: 0012
0511: 0012
0512: 0012
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0540: 0012
0541: 0012
0542: 0012
0543: 0012
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0545: 0012
0546: 0012
0547: 0012
0548: 0012
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0551: 0012
0552: 0012
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0560: 0012
0561: 0012
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0564: 0012
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0567: 0012
0568: 0012
0569: 0012
0570: 0012
0571: 0012
0572: 0012
0573: 0012
0574: 0012
0575: 0012
0576: 0012
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0580: 0012
0581: 0012
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0586: 0012
0587: 0012
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0589: 0012
0590: 0012
0591: 0012
0592: 0012
0593: 0012
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0597: 0012
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0599: 0012
0600: 0012
0601: 0012
0602: 0012
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0605: 0012
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0658: 0012
0659: 0012
0660: 0012
0661: 0012
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0663: 0012
0664: 0012
0665: 0012
0666: 0012
0667: 0012
0668: 0012
0669: 0012
0670: 0012
0671: 0012
0672: 0012
0673: 0012
0674: 0012
0675: 0012
0676: 0012
0677: 0012
0678: 0012
0679: 0012
0680: 0012
0681: 0012
0682: 0012
0683: 0012
0684: 0012
0685: 0012
0686: 0012
0687: 0012
0688: 0012
0689: 0012
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0691: 0012
0692: 0012
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0698: 0012
0699: 0012
0700: 0012
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0773: 0012
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0783: 0012
0784: 0012
0785: 0012
0786: 0012
0787: 0012
0788: 0012
0789: 0012
0790: 0012
0791: 0012
0792: 0012
0793: 0012
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0795: 0012
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0797: 0012
0798: 0012
0799: 0012
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0807: 0012
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0809: 0012
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0840: 0012
0841: 0012
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0845: 0012
0846: 0012
0847: 0012
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0849: 0012
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0855: 0012
0856: 0012
0857: 0012
0858: 0012
0859: 0012
0860: 0012
0861: 0012
0862: 0012
0863: 0012
0864: 0012
0865: 0012
0866: 0012
0867: 0012
0868: 0012
0869: 0012
0870: 0012
0871: 0012
0872: 0012
0873: 0012
0874: 0012
0875: 0012
0876: 0012
0877: 0012
0878: 0012
0879: 0012
0880: 0012
0881: 0012
0882: 0012
0883: 0012
0884: 0012
0885: 0012
0886: 0012
0887: 0012
0888: 0012
0889: 0012
0890: 0012
0891: 0012
0892: 0012
0893: 0012
0894: 0012
0895: 0012
0896: 0012
0897: 0012
0898: 0012
0899: 0012
0900: 0012
0901: 0012
0902: 0012
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0946: 0012
0947: 0012
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0950: 0012
0951: 0012
0952: 0012
0953: 0012
0954: 0012
0955: 0012
0956: 0012
0957: 0012
0958: 0012
0959: 0012
0960: 0012
0961: 0012
0962: 0012
0963: 0012
0964: 0012
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0974: 0012
0975: 0012
0976: 0012
0977: 0012
0978: 0012
0979: 0012
0980: 0012
0981: 0012
0982: 0012
0983: 0012
0984: 0012
0985: 0012
0986: 0012
0987: 0012
0988: 0012
0989: 0012
0990: 0012
0991: 0012
0992: 0012
0993: 0012
0994: 0012
0995: 0012
0996: 0012
0997: 0012
0998: 0012
0999: 0012
1000: 0012

; FIND A "FOR" ENTRY ON THE STACK VIA "VARPNT".
; FORSIZ
; FNDFOR:
; LOAD XREG WITH STK PNTR.
; IGNORE ADR(NEWSTT) AND RTS ADDR.
; GET STACK ENTRY, TOKEN?
; IS IT A "FOR" LOOPS IN THIS PNTR.
; NO, NO "FOR" LOOPS IN THIS PNTR.
; GET HIGH.
; PNTR IS ZERO, SO ASSUME THIS ONE.
; NOT THIS ONE.
; GET DOWN.
; WE GOT IT! WE GOT IT!
; ADD 16 TO X.
; RESULT BACK INTO X.
; RETURN TO CALLER.
; FFRTS: IS THE BLOCK TRANSFER ROUTINE.
; IT MAKES SPACE BY SHOVING EVERYTHING FORWARD.
; ON ENTRY:
; Y=A=HIGHS (FOR REASON).
; HIGHS= DESTINATION OF HIGH ADDRESS.
; LOWTR= LOWEST ADDR TO BE TRANSFERRED.
; HIGHTR= HIGHEST ADDR TO BE TRANSFERRED.
; A CHECK IS MADE TO ASCERTAIN THAT A REASONABLE
; AMOUNT OF SPACE REMAINS BETWEEN THE BOTTOM
; OF THE STRINGS AND THE HIGHEST LOCATION TRANSFERRED INTO
; LOWTR ARE UNCHANGED.
; HIGHS=LOWTR-200 OCTAL.
; HIGHTR=LOWEST ADDR TRANSFERRED INTO MINUS 200 OCTAL.
; BLTU: JSR SCERTAIN THAT STRING SPACE WON'T
; BE OVERRUN.
; STREND STA
; STREND+1 SEC
; HIGHTR LDA
; LOWTR SBC
; INDEX STA
; HIGHTR+1 LDA
; LOWTR+1 SBC
; DECRLT TAX
; HIGHTR INX
; LDA BEQ
; SEC

; PUT IT IN A COUNTER REGISTER.
; SO THAT COUNTER ALGORITHM WORKS.
; SEE IF LOW PART OF COUNT IS ZERO.
; YES, GO START MOVING BLOCKS.
; NO, MUST MODIFY BASE ADDR.

```

Source: David T Craig

"DTCA2DOC-007-018.PICT" 147 KB 2001-03-26 dpi: 250h x 250v pix: 1975h x 2267v

| 03 ROMSOFTB | RROR HANDL | (LOWTR),Y | 29-MAR-84 08:16 PAGE 19 |
|-------------|------------|-----------|-------------------------|
| 42 | | SBC | |
| 43 | | CLC | |
| 44 | | STA | |
| 45 | | LDA | |
| 46 | | STA | |
| 47 | | LDA | |
| 48 | | STA | |
| 49 | | TAX | |
| 50 | | SEC | |
| 51 | | LDA | |
| 52 | | SBC | |
| 53 | | TAY | |
| 54 | | BCS | |
| 55 | | INX | |
| 56 | | DEC | |
| 57 | | CLC | |
| 58 | | ADC | |
| 59 | | BCC | |
| 60 | | CLC | |
| 61 | | LDA | |
| 62 | | INX | |
| 63 | | BNE | |
| 64 | | INC | |
| 65 | | DEX | |
| 66 | | BNE | |
| 67 | | LDA | |
| 68 | | BEQ | |
| 69 | | LDA | |
| 70 | | LDY | |
| 71 | | STY | |
| 72 | | LDA | |
| 73 | | ADC | |
| 74 | | STY | |
| 75 | | LDY | |
| 76 | | BCC | |
| 77 | | INX | |
| 78 | | JSR | |
| 79 | | LDA | |
| 80 | | LDY | |
| 81 | | STY | |
| 82 | | LDA | |
| 83 | | LDY | |
| 84 | | STY | |
| 85 | | LDA | |
| 86 | | LDY | |
| 87 | | STY | |
| 88 | | LDA | |
| 89 | | LDY | |
| 90 | | STY | |
| 91 | | LDA | |
| 92 | | LDY | |
| 93 | | STY | |
| 94 | | LDA | |
| 95 | | LDY | |
| 96 | | STY | |
| 97 | | LDA | |
| 98 | | LDY | |
| 99 | | STY | |
| 00 | | LDA | |
| 01 | | LDY | |
| 02 | | STY | |
| 03 | | LDA | |
| 04 | | LDY | |
| 05 | | STY | |
| 06 | | LDA | |
| 07 | | LDY | |
| 08 | | STY | |
| 09 | | LDA | |
| 10 | | LDY | |
| 11 | | STY | |
| 12 | | LDA | |
| 13 | | LDY | |
| 14 | | STY | |
| 15 | | LDA | |
| 16 | | LDY | |
| 17 | | STY | |
| 18 | | LDA | |
| 19 | | LDY | |
| 20 | | STY | |
| 21 | | LDA | |
| 22 | | LDY | |
| 23 | | STY | |
| 24 | | LDA | |
| 25 | | LDY | |
| 26 | | STY | |
| 27 | | LDA | |
| 28 | | LDY | |
| 29 | | STY | |
| 30 | | LDA | |
| 31 | | LDY | |
| 32 | | STY | |
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| 35 | | STY | |
| 36 | | LDA | |
| 37 | | LDY | |
| 38 | | STY | |
| 39 | | LDA | |
| 40 | | LDY | |
| 41 | | STY | |
| 42 | | LDA | |
| 43 | | LDY | |
| 44 | | STY | |
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| 46 | | LDY | |
| 47 | | STY | |
| 48 | | LDA | |
| 49 | | LDY | |
| 50 | | STY | |
| 51 | | LDA | |
| 52 | | LDY | |
| 53 | | STY | |
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| 55 | | LDY | |
| 56 | | STY | |
| 57 | | LDA | |
| 58 | | LDY | |
| 59 | | STY | |
| 60 | | LDA | |
| 61 | | LDY | |
| 62 | | STY | |
| 63 | | LDA | |
| 64 | | LDY | |
| 65 | </ | | |

```

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;DO CLEAR & SET UP STACK.
;SET INDEX TO TXTTAB.

STOLOP
RUNC
TXITAB-1.
TXITAB
TXITAB+1
INDEX
INDEX+1

;CHEAD GOES THROUGH PROGRAM STORAGE AND FIXES
;UP ALL THE LINKS. THE END OF EACH LINE IS FOUND
;BY SEARCHING FOR THE ZERO AT THE END.
;THE DOUBLE ZERO LINK IS USED TO DETECT THE END OF PROG
;CHEAD:
LDY #1
LDA (INDEX),Y
CCHHEAD
BNE VARGTAB
LDA VARGTAB
STA PRGEND+1
LDA PRGEND+1
STA PRGEND+1
JMP MAIN
#4
(INDEX),Y
CZLOOP

INDEX
#0
(INDEX),Y
INDEX+1
#0
(INDEX),Y
INDEX+1
CCHHEAD
#0
C.PRMP
C.INLN
#8UFLEN-1
#8UFLEN-1
#8UFLEN-1
#0
BUF,X
NOCHR
BUF-1,X
#127
BUF-1,X
LOP8HT
#0
#8UF-1
#8UF-1/256

;POINT AT THE BEGINNING
;GO TO FINISH
;INCH:
FAR, FAR AWAY.
INCH:

```

```

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RROR HANDL
158 INCRIS:
159 ;OF THE TEXT
160 ;AFTER TXTPTR HAS BEEN SETUP TO POINT INTO BUF
161 ;BUFOFS
162 ;DO
163 ;LST
164 ;FIN
165 ;LST
166 ;LST
167 ;LST
168 ;LST
169 ;LST
170 ;LST
171 ;LST
172 ;LST
173 ;LST
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212 ;LST
213 ;LST
214 ;LST
215 ;LST

0200
0000

056:29 7F
058:60
059:A6 B8
05A:40 04
05B:40 13
05C:84 08
05D:24 08
05E:10 08
05F:68 65
060:20 02
061:40 02
062:40 02
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215:40 02

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056C
05F2
05CD
0588
05CD
0590
05CD
05A7
05A8

;SETSOURCE POINTER.
;SET DESTINATION OFFSET.
;ALLOW CRUNCHING.
;RUN ONLY?
;NO SUBROUTINES IN
;GO TO IT!
;AND RUN!!
;UPSHIFT CHARACTERS FOR TOKEN SEARCH

;IS IT A SPACE TO SAVE?
;YES, IGNORE IT.
;IF IT'S A QUOTE, THIS WILL
;QUOTE SIGN?
;YES, DO SPECIAL STRING HANDLING.
;NO CRUNCH, JUST STORE.
;A QMARK?
;YES, STUFF A "PRINT" TOKE
;ALWAYS GO TO STUFFH.
;SKIP NUMERICS.
;AND 'ARE ENTERED STRAIGHTAWAY.
;SAVE BUFFER POINTER.
;FOR INDIRECT.
;LOAD RESLST POINTER.
;ALSO CLEAR COUNT.
;SAVE TEXT POINTER FOR LATER USE.

TXTPTR
#4 DORES
RNONLY
SLOOP
RUNC
NEWSIT
* LOLLY
UPSHFT2
BUFOFS,X
DORES
NOSPCS
#340
SLOOP
ENDCHR
OTHER QUOTE APPEARS.
#34
STRING
STUFFH
#0
KLOOP1
#PRINTK
#STUFFH
#0
MUSTCR
#60
STUFFH
STXPTR
#RESLST
#FAC
#<RESLST-$100 ;HI BYTE
#FAC+1
#0
COUNT
TXTPTR
RESPUL
FAC+1
*
```


"DTCA2DOC-007-022.PICT" 157 KB 2001-03-26 dpi: 250h x 250v pix: 1995h x 2317v

```

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*+4
FAC+1
A
NTHIS1
(FAC),Y
RESCON
LOLLY
UPSHIFT3
;END OF TABLE?

BUFOFS,X
;YES, END OF TABLE. GET 1ST CHR.

GETBPT
BUF-3,Y
LOOK LIKE END OF
TXTPTR+1
#BUF-1
TXTPTR
PLIST
OFF

BNE
INC
BCC
LDA
BNE
DO
JSR
ELSE
LDA
FIN
BPL
STA
WILL
DEC
LDA
STA
RTS
DO
LST
ELSE
FIN
;FNOLIN SEARCHES THE PROGRAM TEXT FOR THE LINE
;WHOSE NUMBER IS PASSED IN "LINNUM".
;THERE ARE TWO POSSIBLE RETURNS:
;1) CARRY SET. POINTS TO THE LINK FIELD IN THE LINE
;WHICH IS NOT SET. LOWTR POINTS TO THE LINE IN THE
;2) CARRY NOT SET. LOWTR POINTS TO THE LINE IN THE
;LINE NOT GREATER THAN THE ONE SOUGHT AFTER.
;FNOLIN: LDA TXITAB
;FNOLNC: LDX TXITAB+1
;#1
LOWTR
LOWTR+1
(LOWTR),Y
FLINRT

LINNUM+1
(LOWTR),Y
FLNRIS
FNDL01
AFFRTS
LINNUM
;COMP HIGH ORDERS OF LINE NUMBERS.
;NO SUCH LINE NUMBER.
;ALWAYS BRANCH.
(LOWTR),Y
FLNRIS
FLNRIS
(LOWTR),Y
;COMPARE LOW ORDERS.
;NO SUCH NUMBER.
;GO TIT.
;FETCH LINK.
(LOWTR),Y
FNDLNC
;ALWAYS BRANCHES.
;C MAY BE HIGH.

```

"DTCA2DOC-007-024.PICT" 162 KB 2001-03-26 dpi: 250h x 250v pix: 1985h x 2347v

;SETUP TEXT POINTER.

#255
TXTPTR
TXTTAB+1
#255
TXTPTR+1
PLIST
ON

```

ADCS
LDA
ADCS
RTS
DO
ELSE
FIN

```

RROR HANDL

0123456789
0000000000
MMMMMMMMMM

000

```
D099E=855F7  
D099E=855F7  
D0A24=:  
D0A24=:  
D0A24=:
```

Source: David T Craig

"DTCA2DOC-007-027.PICT" 139 KB 2001-03-26 dpi: 250h x 250v pix: 1917h x 2275v

"DTCA2DOC-007-028.PICT" 170 KB 2001-03-26 dpi: 250h x 250v pix: 2003h x 2456v

```

03 ROMSOFTB      00
078D:20 81 00
07C0:20 87 00
07C3:20 82 EB
07C6:20 15 DE
07C9:45 80
07CC:48 95
07CE:48 81
07CF:49 81
07D1:48
07D2:

HE "FOR" S
575
576
577 ONEON:
578
579
580
581
582
583 NEXTCON:
584
585 ; BNEA NEWSTT

JSR
JSR
JSR
LDA PHA
LDA PHA
LDA PHA
LDA PHA
FORPNT
FORPNT+1
FORPNT
#FORTK
;SIMULATE BNE TO NEWSTT. JUST FALL IN.
;YES: ADVANCE POINTER.
;READ THE STEP.
;GET SIGN IN ACCA.
;PUSH FAC ONTO STACK (THRU A).
;PUT PNTR TO VARIABLE ON STACK.
;PUT A FORTK ONTO STACK.

```


"DTCA2DOC-007-030.PICT" 159 KB 2001-03-26 dpi: 250h x 250v pix: 2013h x 2406v


```

03  ROMSOFTB
049:38
D84A:A5 67
D84C:E9 01
D84E:A4 01
D850:80 01
D852:85 7D
D853:85 7E
D855:84 7E
D857:60
D858:AD 00
D85B:C9 83
D85D:F0 01
D85F:20 53
D863:A2 00
D867:10 03
D869:4C 03
D86C:CB 01
D86E:18 01
D870:DD 3C
D871:DD 3C
D873:DD 3C
D875:A5 88
D877:A6 89
D879:EF 76
D87A:85 0C
D87E:85 79
D880:A5 7A
D882:A5 75
D884:A5 76
D886:84 77
D888:84 78
D889:84 78
D890:84 78
D892:84 78
D894:84 78
D896:84 78
D898:84 78
D89A:84 78
D89C:84 78
D89E:84 78
D8A1:84 78
D8A3:84 78
D8A5:84 78
D8A7:84 78
D8A9:84 78
D8AB:84 78
D8AD:84 78
D8AF:84 78
D8B1:84 78
D8B3:84 78
D8B5:84 78
D8B7:84 78
D8B9:84 78
D8BB:84 78
D8BD:84 78
D8BF:84 78
D8C1:84 78
D8C3:84 78
D8C5:84 78
D8C7:84 78
D8C9:84 78
D8CB:84 78
D8CD:84 78
D8CF:84 78
D8D1:84 78
D8D3:84 78
D8D5:84 78
D8D7:84 78
D8D9:84 78
D8DB:84 78
D8DD:84 78
D8DF:84 78
D8E1:84 78
D8E3:84 78
D8E5:84 78
D8E7:84 78
D8E9:84 78
D8EB:84 78
D8ED:84 78
D8EF:84 78
D8F1:84 78
D8F3:84 78
D8F5:84 78
D8F7:84 78
D8F9:84 78
D8FB:84 78
D8FD:84 78
D8FF:84 78
D84A:A5 67
D84C:E9 01
D84E:A4 01
D850:80 01
D852:85 7D
D853:85 7E
D855:84 7E
D857:60
D858:AD 00
D85B:C9 83
D85D:F0 01
D85F:20 53
D863:A2 00
D867:10 03
D869:4C 03
D86C:CB 01
D86E:18 01
D870:DD 3C
D871:DD 3C
D873:DD 3C
D875:A5 88
D877:A6 89
D879:EF 76
D87A:85 0C
D87E:85 79
D880:A5 7A
D882:A5 75
D884:A5 76
D886:84 77
D888:84 78
D889:84 78
D890:84 78
D892:84 78
D894:84 78
D896:84 78
D898:84 78
D89A:84 78
D89C:84 78
D89E:84 78
D8A1:84 78
D8A3:84 78
D8A5:84 78
D8A7:84 78
D8A9:84 78
D8AB:84 78
D8AD:84 78
D8AF:84 78
D8B1:84 78
D8B3:84 78
D8B5:84 78
D8B7:84 78
D8B9:84 78
D8BB:84 78
D8BD:84 78
D8BF:84 78
D8C1:84 78
D8C3:84 78
D8C5:84 78
D8C7:84 78
D8C9:84 78
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D8CD:84 78
D8CF:84 78
D8D1:84 78
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D8D5:84 78
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D8DB:84 78
D8DD:84 78
D8DF:84 78
D8E1:84 78
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D8EB:84 78
D8ED:84 78
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ISCRIS:
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IF NO TERMINATOR FOR STOP OR END.
;C=0 SO WILL NOT PRINT 'BREAK'.
CONTR STOP OR END.
TXTPTR
TXTPTR+1
CURLIN+1
DIRIS
OLDTXT
OLDTXT+1
CURLIN
CURLIN+1
OLDLIN
OLDLIN+1
#BRKTX
#BRKTX
GORDY
GORDY
READY
READY
#ERRCN
#ERRCN
OLDTXT+1
OLDTXT+1
;BY SIKING AND INUE.
;NOTHING TO CTINUE.
BNE
BNE
JMP C
JMP C
SETUP OLDTXT.
;INPUT AND
;OLDTXT
;TXTPTR
;OLDLIN
;OLDLIN+1
;CURLIN
;CURLIN+1
;STOP, 'END', TYPING CRLF TO
;A STORED TXTPTR OF ZERO IS SETUP
;CONTINUE ERROR.
;MAKE SURE THERE IS A TERMINATOR.
;TYPE 'READY'.
;CARRY CLEAR SO DON'T PRINT 'BREAK'.
;POP OFF NEWSTT ADDR.
;MAKE C NONZERO AS A FLAG.
;RETURN IF NOT CONT-C OR
;IF SO, JUMP TO 'HNDLERR'
;FOR BREAK ERROR NUMBER.
;IN ONERR MODE?
;CHECK THE CHARACTER
;READ FINISHES COME TO 'RESFIN'.

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;RETURN TO CALLER.

03 ROMSOFT3
D8AF:60
D880: 0000
D880:
D880:
EST0
716 CONTKT:
717
718
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RTS
00
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ELSE
FIN
PLIST
ON

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03 RMSOFTB
D8B0: BD 01 0001
D8B1: 10 02 D8C6
D8B2: 11 0E D8CF
D8B3: 12 12 D8CF
D8B4: 13 13 D8CF
D8B5: 14 14 D8CF
D8B6: 15 15 D8CF
D8B7: 16 16 D8CF
D8B8: 17 17 D8CF
D8B9: 18 18 D8CF
D8BA: 19 19 D8CF
D8BB: 20 20 D8CF
D8BC: 21 21 D8CF
D8BD: 22 22 D8CF
D8BE: 23 23 D8CF
D8BF: 24 24 D8CF
D8C0: 25 25 D8CF
D8C1: 26 26 D8CF
D8C2: 27 27 D8CF
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D8C7: 32 32 D8CF
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D8CA: 35 35 D8CF
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D8CC: 37 37 D8CF
D8CD: 38 38 D8CF
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D95C: 681 681 D8CF
D95D: 682 682 D8CF
D95E: 683 683 D8CF
D95F: 684 684 D8CF
D960: 685 685 D8CF
D961: 686 686 D8CF
D962: 687 687 D8CF
D963: 688 688 D8CF
D964: 689 689 D8CF
D965: 690 690 D8CF
D966: 691 691 D8CF
D967: 692 692 D8CF
D968: 693 693 D8CF
D969: 694 694 D8CF
D96A: 695 695 D8CF
D96B: 696 696 D8CF
D96C: 697 697 D8CF
D96D: 698 698 D8CF
D96E: 699 699 D8CF
D96F: 700 700 D8CF
D970: 701 701 D8CF
D971: 702 702 D8CF
D972: 703 703 D8CF
D973: 704 704 D8CF
D974: 705 705 D8CF
D975: 706 706 D8CF
D976: 707 707 D8CF
D977: 708 708 D8CF
D978: 709 709 D8CF
D979: 710 710 D8CF
D97A: 711 711 D8CF
D97B: 712 712 D8CF
D97C: 713 713 D8CF
D97D: 714 714 D8CF
D97E: 715 715 D8CF
D97F: 716 716 D8CF
D980: 717 717 D8CF
D981: 718 718 D8CF
D982: 719 719 D8CF
D983: 720 720 D8CF
D984: 721 721 D8CF
D985: 722 722 D8CF
D986: 723 723 D8CF
D987: 724 724 D8CF
D988: 725 725 D8CF
D989: 726 726 D8CF
D98A: 727 727 D8CF
D98B: 728 728 D8CF
D98C: 729 729 D8CF
D98D: 730 730 D8CF
D98E: 731 731 D8CF
D98F: 732 732 D8CF
D990: 733 733 D8CF
D991: 734 734 D8CF
D992: 735 735 D8CF
D993: 736 736 D8CF
D994: 737 737 D8CF
D995: 738 738 D8CF
D996: 739 739 D8CF
D997: 740 740 D8CF
D998: 741 741 D8CF
D999: 742 742 D8CF
D9A0: 743 743 D8CF
D9A1: 744 744 D8CF
D9A2: 745 745 D8CF
D9A3: 746 746 D8CF
D9A4: 747 747 D8CF
D9A5: 7
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03 ROMSOFT8
090F:
D912:
0003
0AD AND SAVE SUBROUTINES.
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0912:
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JSR
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TXTTAB
POKER
PRGEND+1
TXTTAB+1
POKER+1
VARTIO
C-COUT
PROGIO
C-COUT
VARTIO
C-CSIN
TXTTAB
POKER
VARTAB+1
TXTTAB+1
POKER+1
VARTAB+1
POKER+2
RNONLY
PROGIO
C-CSIN
RNONLY
DOTHEREST
RUNC
FINI
#POKER
#<POKER
@74
@74+1
#POKER+2
@76
@76+1
RNONLY
TXTTAB
TXTTAB+1
@74
@74+1
VARTAB
VARTAB+1
@76
@76+1
29-MAR-84 08:16 PAGE 35
;FILL REMAINDER WITH BREAKS FOR LOLLY
;CALCLUATE PROGRAM SIZE IN POKER
;GET ACTUAL END OF PROGRAM
;WRITE PROGRAM SIZE POK
;WRITE PROGRAM.
;READ SIZE OF PROGRAM INTO POKER
;CALCULATE VARTAB FROM SIZE AND
;TXTTAB
;HAHA!! FUCKED HIM OVER!
;READ PROGRAM.
;IS THIS A SPECIAL PROGRAM?
;REGULAR SAVE...

```

"DTCA2DOC-007-036.PICT" 154 KB 2001-03-26 dpi: 250h x 250v pix: 2003h x 2442v

```

04 ROMSOFTC
UN,GOTO,GOSUB,
30 ;NEVER GETS MATCHED.
31 JSR FNDFOR
32 TXS
33 CMP
34 BEQ
35 LDX
36 DFB
37 LDX
38 JMP
39 PLA
40 PLA
41 CPY
42 BEQ
43 STA
44 PLA
45 STA
46 STA
47 STA
48 TXTPTR
49 TXTPTR+1
50 DATA:
51 ;SINCE WHEN STACK, STUCK THE TEXT PNTR
52 ;ONTO THE STACK, THE LINE NUMBER ARG
53 ;HADN'T BEEN READ YET.
54 ADDN:
55 CLC
56 ADC
57 STA
58 BCC
59 INC
60 RTS
61 LDX
62 DFB
63 LDX
64 STX
65 LDY
66 LDA
67 LDX
68 STX
69 LDA
70 BEQ
71 CMP
72 BEQ
73 CMP
74 BNE
75 PLA
76 PLA
77 PLA
78 PLA
79 PLA
80 DOPOP:
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29-MAR-84 08:16 PAGE 38
;EVALUATE A FORMULA.
;GET CURRNT CHARACTER.
;IS TERMINATING CHARACTER A GOTOTK?
;YES.
;NO, IT MUST BE 'THEN'.
;O=FALSE. ALL OTHERS TRUE.
;TRUE.
;SKIP REST OF STATEMENT.
;WILL ALWAYS BRANCH.
;WILL CURRENT CHARACTER.
;IF A NUMBER, GOTO IT.
;INTERPRET NEW STATEMENT.

```

```

FRMEVL
CHRGOT
#GOTOTK
#GOTOTK
#THENTK
SYNCHRP
FACEXP
DOCOND
REMN
ADON
CHRGOT
DOCO
GOTO
GONE3

```

```

JSR
CMP
BEQ
LDA
JSR
LDA
BNE
JSR
BEQ
JSR
BCS
JMP

```

```

IF ... THEN
IF:
897
898
899
900
901 OKGOTO:
902
903 REM:
904
905 DOCOND:
906
907 DOCO:
908
909

```

```

04 RMSOFTC
D9C9:20 7B DD
D9CC:20 87 00
D9CF:C9 AB D9D8
D9D1:F0 05 DE
D9D5:20 C0
D9D8:A5 05 D9E1
D9DA:00 A9 D998
D9DC:F0 87 00 D9E9
D9E1:80 03 D9
D9E6:4C 3E D8
D9E9:4C 28

```

Source: David T Craig

```

29-MAR-84 08:16 PAGE 40
; LINE GET' READS A LINE NUMBER FROM CURRENT TEXT POSITION
; LINE NUMBER RANGE FROM 0 TO 64000-1.
; THE ANSWER IS RETURNED IN LINNUM.
; TXTPTR IS UPDATED TO POINT TO THE TERMINATING CHARACTER
; AND A = THE TERMINATING CHARACTER WITH CONDITION
; CODES SET UP TO REFLECT ITS VALUE.
; INITIALIZE LINE NUMBER TO ZERO.
; IT IS NOT A DIGIT.
; -1 SINCE C=0.
; SAVE CHARACTER.
; LINE NUMBER WILL BE .LT. 64000?
; MULTIPLY BY 10.
; ADD IN DIGIT.

120 INGET -- READ AINE NUMBER INTO
121 ; 'LINE GET' READS A LINE NUMBER FROM CURRENT TEXT POSITION
122 ; LINE NUMBER RANGE FROM 0 TO 64000-1.
123 ; THE ANSWER IS RETURNED IN LINNUM.
124 ; TXTPTR IS UPDATED TO POINT TO THE TERMINATING CHARACTER
125 ; AND A = THE TERMINATING CHARACTER WITH CONDITION
126 ; CODES SET UP TO REFLECT ITS VALUE.
127 ; INITIALIZE LINE NUMBER TO ZERO.
128 ; IT IS NOT A DIGIT.
129 ; -1 SINCE C=0.
130 ; SAVE CHARACTER.
131 ; LINE NUMBER WILL BE .LT. 64000?
132 ; MULTIPLY BY 10.
133 ; ADD IN DIGIT.
134
135 LDX #0
136 STX LINNUM
137 STX LINNUM+1
138 STX ONGRIS
139 SBC #0-1
140 STA CHARAC
141 LDA LINNUM+1
142 STA INDEX
143 STX #25
144 SNERR3
145 LDA LINNUM
146 ASL
147 ROL
148 ASL
149 ROL
150 STA LINNUM
151 LDA LINNUM+1
152 STA LINNUM+1
153 ASL
154 ROL
155 STA LINNUM
156 LDA CHARAC
157 ADC NXTLGC
158 BCC INCR
159 JSR MORLIN
160 JMP

```

[illegible]

```

04 RCM$OFTC      D4 D4 E5
DAB0::20 A9 90
DAB3::A0 8C
DAB5::35 8C
DAB7::84 8D
DAB9::20 35 E6
DABE::AD 00
DABF::B1 3C
DAC0::91 85
DAC2::C8 3C
DAC4::B1 85
DAC5::91 85
DAC7::C8 8C
DAC9::B1 85
DACA::91 85
DACC::60

LET 215
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231

COPY.C:
;FREEING UP ANY STRING SPACE.
MOVINS
#DSCIMP
#<DSCIMP
DSCPNT+1
FREIMS
#0
(DSCPNT),Y
(FORPNT),Y
(DSCPNT),Y
(FORPNT),Y
(DSCPNT),Y
(FORPNT),Y

JSR LDA
LDY LDA
STY STA
STY INY
JSR LDA
LDY LDA
STY STA
STY INY
RTS

;POINT TO OLD DESCRIPTOR.
;REMEMBER POINTER TO DESCRIPTOR.
;FREE UP THE TEMPORARY WITHOUT.
;COPY IT.
29-MAR-84 08:16 PAGE 42

```

"DTCA2DOC-007-043.PICT" 147 KB 2001-03-26 dpi: 250h x 250v pix: 1998h x 2502v

```

04 ROMSOFTC
293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349
RINT CODE:
MORCOM:
TABER:
ASPAC:
XSPAC:
XSPAC2:
NOTABR:
XSPAC1:
STRPR2:
OUTDO:
OUTQST:
OUTDO:
OUTLOC:
NOTABR
#$10
#$F0
TRMPOS
NOTABR
GTBYTC
#41
*+5
SNERR
XSPAC
;COLUMN
TRMPOS
NOTABR
XSPAC1
CHRGET
PRINTC
OUTSPC
XSPAC2
;PRINT STRING TO BY Y,A WHICH ENDS WITH A ZERO.
;IF STRING IS BELOW DSCIMP IT WILL BE COPIED INTO STRING
;STRUT: THE STRING DESCRIPOR IS POINTED TO BY FACMO
;STRPRT:
STRPR2:
OUTDO:
OUTQST:
OUTDO:
OUTLOC:
BNE
ADC
AND
STA
BCC
PHP
JSR
CMP
BEQ
JMP
PLP
BCC
DEX
TXA
SBC
BCC
FIN
TAX
INX
DEX
BNE
JSR
JMP
JSR
BNE
;PRINT STRING TO BY Y,A WHICH ENDS WITH A ZERO.
;IF STRING IS BELOW DSCIMP IT WILL BE COPIED INTO STRING
;STRUT: THE STRING DESCRIPOR IS POINTED TO BY FACMO
;STRPRT:
STRPR2:
OUTDO:
OUTQST:
OUTDO:
OUTLOC:
;OUTDO OUTPUTS THE CHARACTER IN ACCA, USING CNTWFL
; (SUPPSS OR NOT), TRMPOS (PRINT HEAD POSITION),
;TIMING, ETC.. NO REGISTERS ARE CHANGED.
;OUTSPC:
;OUTQST:
;OUTDO:
;OUTLOC:
;FINISH UP
;DO COMMA FOR PRINTER CARD
;THE WRONG WAY SO IT WILL WORK!
;FINISH UP
;REMEMBER IF SPC OR TAB FUNCTION.
GET VALUE INTO ACCX.
;PRINT X SPACES.
1 ISFIRST
;NEGATIVE, DON'T PRINT ANY.
;DECREMENT THE COUNT.
;REGET LAST CHARACTER.
;DON'T CALL CRDO.
;MOVE ONE AHEAD.
;ALL DONE.
;PNTR TO ACT STRNG SET BY FREFAC.
;TYPE REST OF CARRIAGE RETURN.
;AND ON AND ON.
;TURN ON B7 FOR APPLE.
;CONTROL CHARACTER?
;OUTPUT THE CHARACTER.

```

```

04  ROMSOFTC
DB67:29 7F
DB69:48 F1
DB6A:A5 A8 FC
DB6C:20
DB6F:68
DB70:60

RINT CODE.
350
351
352
353
354 GETRIS:
355

AND
PHA
LDA
JSR
PLA
RTS

#2177
SPOBYT
WAITNOW

29-MAR-84 08:16 PAGE 45
;GET A BACK FROM APPLE.
;NOW DELAY FOR SPEED=

```


"DTCA2DOC-007-046.PICT" 165 KB 2001-03-26 dpi: 250h x 250v pix: 1998h x 2385v

