



all letters to upper-case before it starts its matching. The Spectrum will also allow spaces to be included in variable names, but these can lead to problems and we advise against their use.

Spectrum BASIC does not make the strict distinction found in most other BASIC dialects between string variables and string arrays — in fact, a Spectrum string variable is more like a character array. Since we can have, for example, T\$ and T\$(i), referring to a string and part of the same string, the program does not attempt to distinguish between simple string variables and string arrays. This is not a real limitation, however, as Spectrum BASIC does not allow you to have a string variable and array with the same name.

To use our utility program, first type it in and save it, and then merge it with the program you want searched, using the MERGE command on the Spectrum or the method described in Chapter 37 of the User Guide for the BBC Micro. Invoke the search routine with RUN 9000 (Spectrum) or GOTO 30000 (BBC Micro), and type in the name you want to find when asked for it. If you want an array name, add an open bracket at the end of the name.

Finally, as an exercise, you may like to use the principles described here to write a program that tells you which lines in a program contain a call to a specified subroutine. In the next instalment of this course we will supply a full listing of this program for the Commodore 64.

Spectrum

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9000 INPUT "Name to search for? "; LINE $
9010 FOR I:=1 TO LEN (S)
9020 IF T$(I)="" AND T$(I)="" THEN
LET T$(I)=CHR$(CODE (T$(I))-32)
9030 NEXT I
9040 LET TokenforREM=234
9050 LET Quote=34
9060 LET Newline=13
9070 LET Underscore=95
9080 LET Number=14
9090 LET PRG=23635
9100 LET Textpointer=PEEK (PRG)+256*PEEK
K (PRG+1)
9110 LET LIneno=256*PEEK (Textpointer)+P
EEK (Textpointer+1)
9120 IF LIneno=9000 THEN STOP
9130 LET Textpointer=Textpointer+2
9140 LET Textlength=PEEK (Textpointer)+2
56*PEEK (Textpointer+1)
9150 LET Textpointer=Textpointer+2
9160 LET Nextline=Textpointer+Textlength
9170 IF PEEK (Textpointer)=Newline THEN
LET Textpointer=Textpointer+1: GO TO 91
10
9180 IF PEEK (Textpointer) <> TokenforREM
THEN GO TO 9220
9190 REM Skip over REM line
9200 LET Textpointer=Nextline
9210 GO TO 9110
9220 IF PEEK (Textpointer) <> Quote THEN
GO TO 9280
9230 REM Skip anything between quotes, b
ut stop at end of line in case of unmat
hed quote
9240 LET Textpointer=Textpointer+1
9250 IF PEEK (Textpointer)=Newline THEN
LET Textpointer=Textpointer+1: GO TO 91
10
9260 IF PEEK (Textpointer) <> Quote THEN
GO TO 9240
9270 LET Textpointer=Textpointer+1
9275 GO TO 9170
9280 IF PEEK (Textpointer) <> Number THEN
GO TO 9320
9290 REM Skip 5-byte binary number
9300 LET Textpointer=Textpointer+6
9305 GO TO 9170
9310 REM First character of name must be
upper or lower case letter
9320 IF PEEK (Textpointer) <= CODE ("A") A
ND PEEK (Textpointer) <= CODE ("Z") THEN
LET C=CHR$(PEEK (Textpointer)): GO TO
9370
9330 REM Use upper case instead of lower
case
9340 IF PEEK (Textpointer) <= CODE ("a") A
ND PEEK (Textpointer) <= CODE ("z") THEN
LET C=CHR$(PEEK (Textpointer)-32): GO
TO 9370
9350 LET Textpointer=Textpointer+1
9360 GO TO 9170
9370 LET N=""
9380 LET N=N+C
9390 LET Textpointer=Textpointer+1
9400 REM Letter, digit or underscore aft
er first character of name
9410 IF PEEK (Textpointer) <= CODE ("A") A
ND PEEK (Textpointer) <= CODE ("Z") THEN
LET C=CHR$(PEEK (Textpointer)): GO TO
9380
9420 REM Use upper case instead of lower
case
9430 IF PEEK (Textpointer) <= CODE ("a") A
ND PEEK (Textpointer) <= CODE ("z") THEN
LET C=CHR$(PEEK (Textpointer)-32): GO
TO 9380
9440 IF PEEK (Textpointer) <= CODE ("0") A
ND PEEK (Textpointer) <= CODE ("9") THEN
LET C=CHR$(PEEK (Textpointer)): GO TO
9380
9450 IF PEEK (Textpointer) = Underscore TH
EN GO TO 9380
9460 REM End with $ for string variable
9470 IF PEEK (Textpointer) = CODE ("$") TH
EN LET N=N+"$": LET Textpointer=Textp
ointer+1: GO TO 9500
9480 REM ( if array or function
9490 IF PEEK (Textpointer) = CODE ("(") TH
EN LET N=N+"(": LET C=CHR$(PEEK (Textpointer)):
LET Textpointer=Textpointer+1
9500 IF N="" THEN PRINT N: IN LINE "
LIneno
9520 GO TO 9170

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BBC Micro

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30000 INPUT "Name to search for";
TARGET $
30010 TokenforREM=244
30020 Quote=34
30030 Hex=36
30040 Newline=13
30050 Underscore=95
30060 Textpointer=PAGE
30070 Textpointer=Textpointer+1
30080 LIneno=256*Textpointer+(Textpoin
ter+1)
30090 IF LIneno=30000 THEN END
30100 Textpointer=Textpointer+2
30110 LineLength=Textpointer
30120 Endline=Textpointer+LineLength-3
30130 Textpointer=Textpointer+1
30140 IF Textpointer=Newline THEN GOTO
30070
30150 IF Textpointer <> TokenforREM THEN
GOTO 30180
30160 REM Skip over REM line
30170 Textpointer=Endline:GOTO 30070
30180 IF Textpointer <> Quote THEN GOTO 3
0240
30190 REM Skip anything between quot
es, but stop at end of line in case of u
nmatched quote
30200 Textpointer=Textpointer+1
30210 IF Textpointer=Newline THEN GO
TO 30070
30220 IF Textpointer <> Quote THEN GOTO
30280
30230 Textpointer=Textpointer+1
30235 GOTO 30140
30240 IF Textpointer <> Hex THEN GOTO 303
00
30250 REM Skip hex number, to avoid c
onfusion with variable names
30260 Textpointer=Textpointer+1
30270 IF Textpointer=ASC("0") AND ?
Textpointer <= ASC("9") THEN GOTO 30240
30280 IF Textpointer=ASC("A") AND ?
Textpointer <= ASC("F") THEN GOTO 30240
30285 GOTO 30140
30290 REM First character of name must b
e upper or lower case letter
30300 IF Textpointer=ASC("A") AND ?Tex
tpointer <= ASC("Z") THEN GOTO 30330
30310 IF Textpointer=ASC("a") AND ?Tex
tpointer <= ASC("z") THEN GOTO 30330
30320 GOTO 30130
30330 Name=""
30340 Name=Name+CHR$(Textpointer)
30350 Textpointer=Textpointer+1
30360 REM Letter, digit or underscore af
ter first character
30370 IF Textpointer=ASC("A") AND ?Tex
tpointer <= ASC("Z") THEN GOTO 30340
30380 IF Textpointer=ASC("a") AND ?Tex
tpointer <= ASC("z") THEN GOTO 30340
30390 IF Textpointer=ASC("0") AND ?Tex
tpointer <= ASC("9") THEN GOTO 30340
30400 IF Textpointer=Underscore THEN GO
TO 30340
30410 REM End with $ for string variable
, % for integer variable
30420 IF Textpointer=ASC("$") THEN Name
=Name+CHR$(Textpointer):Textpointer=T
extpointer+1:GOTO 30450
30430 IF Textpointer=ASC("%") THEN Name
=Name+CHR$(Textpointer):Textpointer=T
extpointer+1
30440 REM ( if array, procedure or funct
ion
30450 IF Textpointer=ASC("(") THEN Name
=Name+CHR$(Textpointer):Textpointer=T
extpointer+1
30460 IF Name=TARGET$ THEN PRINT Name:
IN LINE "LIneno
30470 GOTO 30140
30480 END

```