Applesoft: Understanding FRE(0)

PRINT FRE(0) displays the amount of memory available for Applesoft varibles.
This value may be negative due to the way Applesoft handles integer numbers on
48K systems. Numbers greater than 32767 appear to have 65536 subtracted from
them; in such a case, add 65536 to the value returned in order to get the
number of free bytes. For example:

        1000 PRINT FRE (0) - 65536 * (FRE (0) < 0)

PRINT FRE(0) can cause the Apple to hang when it's executed in command mode
immediately after loading your program from a diskette or using Applesoft
RENUMBER. This hang is due to the variable pointers not resetting properly.
Type CLEAR before entering PRINT FRE(0) to return the expected results.

The following program checks the memory for string variables; however, it
doesn't give the expected results.

```
 10  DIM A$(100)
 20 B$ = "ABC"
 30  FOR I = 1 TO 100
 40 A$(I) = B$
 50  PRINT FRE (0) + 65536
 60  NEXT I
```

Since B$ is assigned to a string constant in line 20, and the pointer for
A$(I) is assigned B$ (line 40), the PRINT statement in line 50 prints the
same number. If we change line 40 to read:

```
 40 A$(I) = B$ + "D"
```

the program uses memory for each assignment, because concatenation creates a
new string in the free memory space each time the new line 40 is executed.
Apple Tech Notes

Keywords: <None>

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