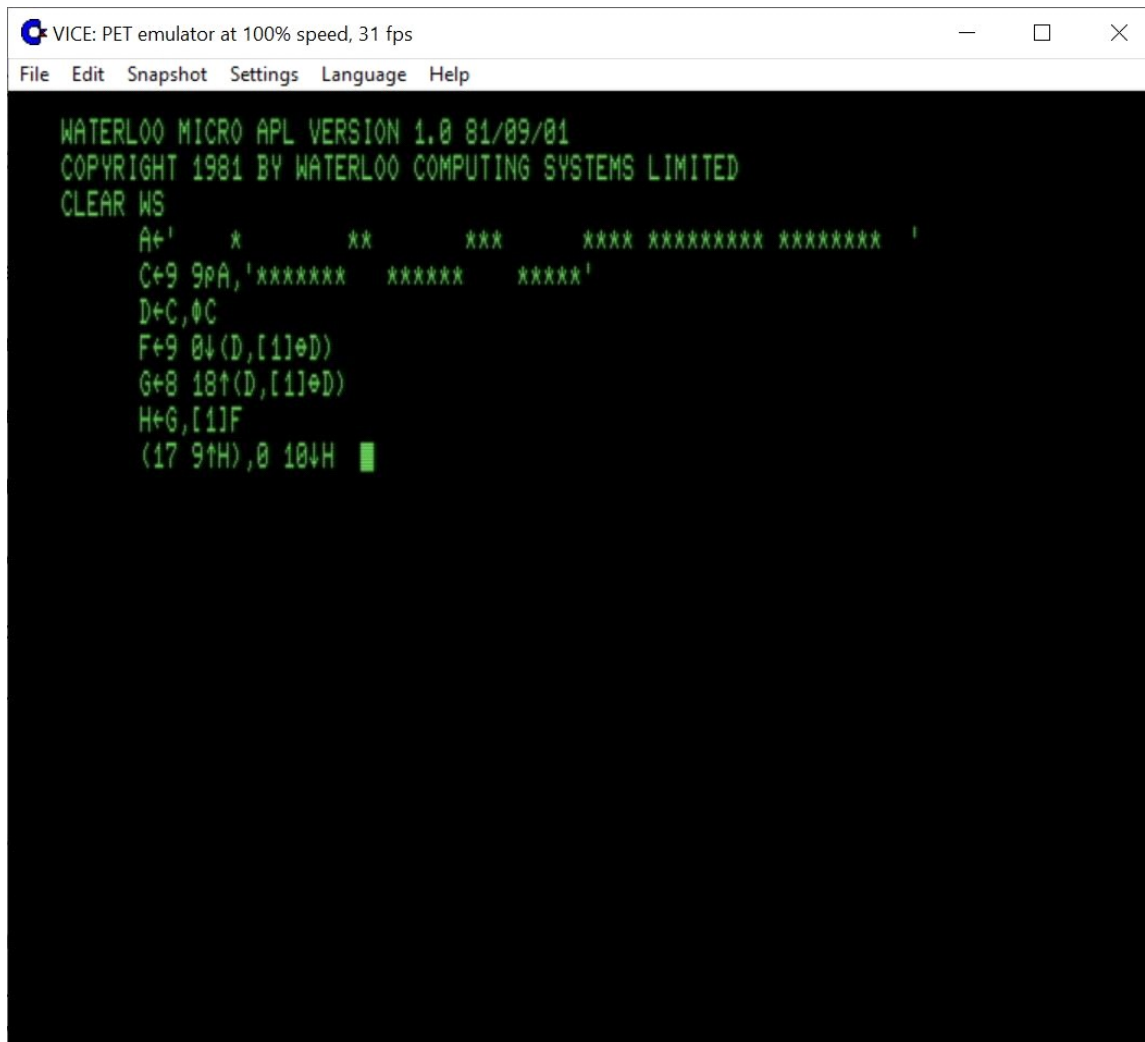


Solving the VC3 2022 Christmas Coding Challenge in APL

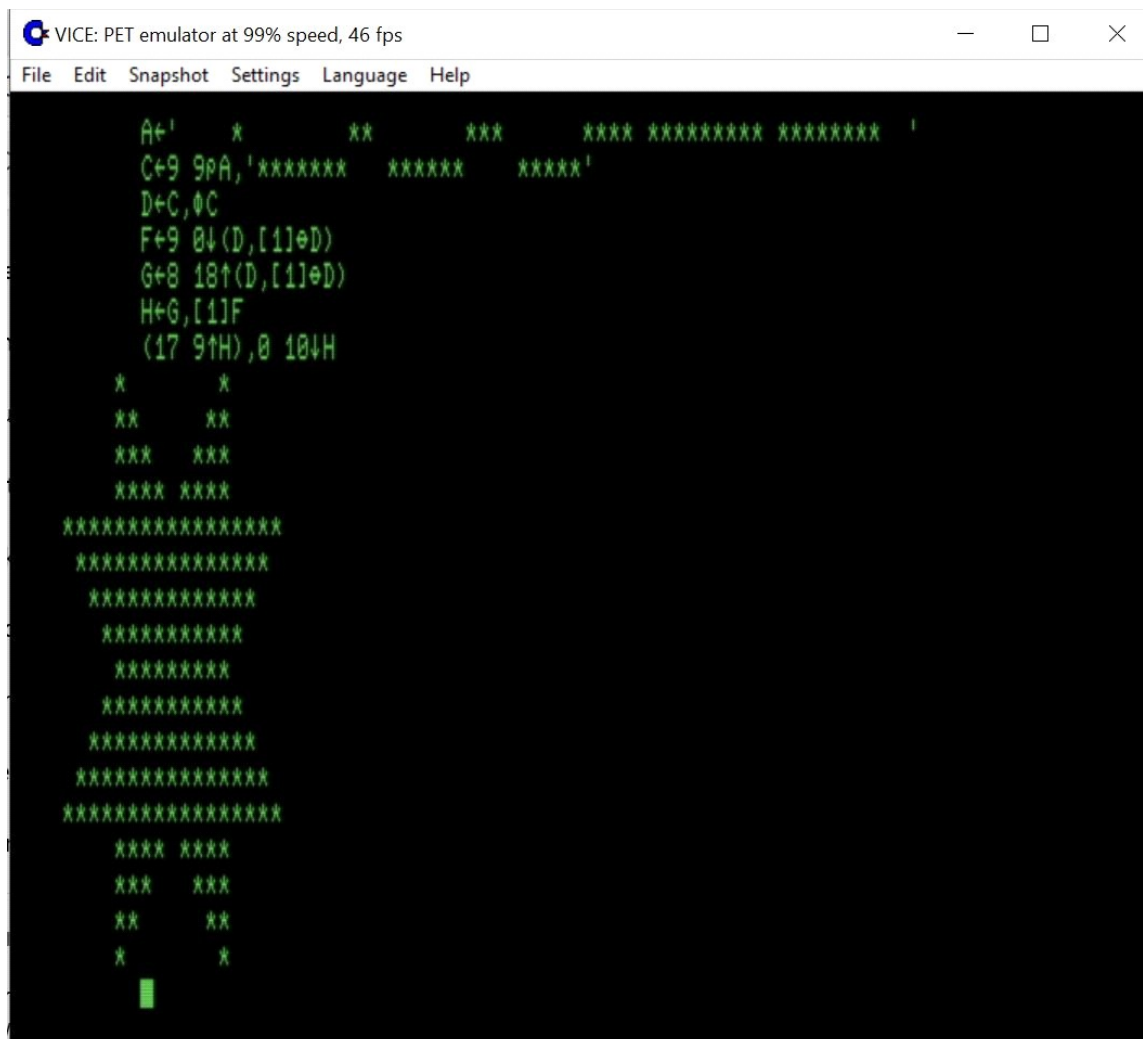
microAPL on the SuperPET solution set up:



```
VICE: PET emulator at 100% speed, 31 fps
File Edit Snapshot Settings Language Help

WATERLOO MICRO APL VERSION 1.0 81/09/01
COPYRIGHT 1981 BY WATERLOO COMPUTING SYSTEMS LIMITED
CLEAR WS
A←' * ** *** **** ***** '
C←9 9pA,'***** ***** '
D←C,0C
F←9 0↓(D,[1]0D)
G←8 18↑(D,[1]0D)
H←G,[1]F
(17 9↑H),0 104H ■
```

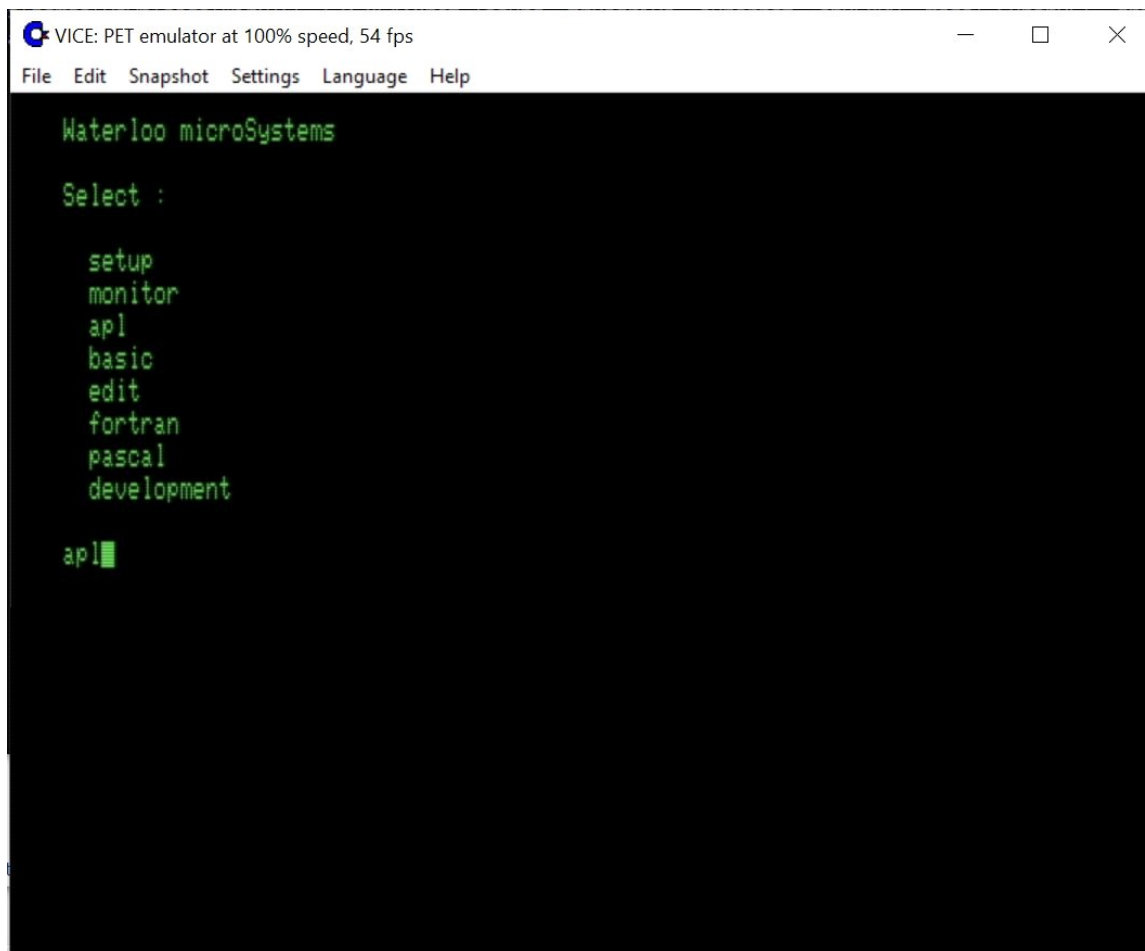
Solution expression is evaluated:



To verify this solution save `sp900lang.d80` into the Vice folder, then load `xpet` as follows:

```
xpet +sound -truedrive -superpet -cpu6809 -model SuperPET -drive8type 8050 -9 sp9000lang.d80
```

Type `apl` at the Waterloo languages prompt:



To load and run the saved workspace and verify the solution:

```
)LOAD DISK/1.VCCC22
```

All of the variables are loaded in. For convenience the final expression has been saved into K so you may type K and hit return

```
VICE: PET emulator at 99% speed, 44 fps
File Edit Snapshot Settings Language Help

WATERLOO MICRO APL VERSION 1.0 81/09/01
COPYRIGHT 1981 BY WATERLOO COMPUTING SYSTEMS LIMITED
CLEAR WS
)LOAD DISK/1.VCCC22
SAVED 81/01/01 00:31:56
)VARS
A B C D E F H G J I K
A
* ** *** **** *****
D
* *
** **
*** ***
**** ****
*****
*****
*****
*****
*****
*****

```

Easier in an APL that supports drop with axis, but in Waterloo microAPL it is not implemented.

[illegible]

Code explanation:



VICE: PET emulator at 99% speed, 45 fps



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```
WATERLOO MICRO APL VERSION 1.0 81/09/01
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CLEAR WS
A←'  *      **      ***      **** ***** '
B←'***** ***** *****'  A DATA FOR UPPER LEFT SIDE OF SNOWFLAKE
C←9 9pA,B  A CONCATENATE A WITH B AND THEN RESHAPE INTO A 9X9 ARRAY
C      A THIS GIVES US ONE QUARTER IF THE SNOWFLAKE

*
**
***
****
*****
*****
*****
*****
*****
*****
■
```



VICE: PET emulator at 99% speed, 43 fps



File Edit Snapshot Settings Language Help

```
B←'*****' *****' a DATA FOR UPPER LEFT SIDE OF SNOWFLAKE
C←9 9P A,B a CONCATENATE A WITH B AND THEN RESHAPE INTO A 9X9 ARRAY
C a THIS GIVES US ONE QUARTER IF THE SNOWFLAKE
```

```
 *
 **
 ***
 ****
 *****
 *****
 *****
 *****
 *****
 *****
```

```
D←C,0C a CAT C WITH ITS VERTICAL ROTATION
D a TO COMPLETE THE UPPER HALF OF THE SNOWFLAKE
```

```
 *      *
 **     **
 ***    ***
 ****   ****
 *****
 *****
 *****
 *****
 *****
 *****
```



