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' -----
'           This demo program moves 1000 dots around on a NTSC screen.
' -----

' Define CONS
CONSTANT NumDots = 1000
CONSTANT MaxDots = 999

' Define HUB variables
DIM dots AS HUB LONG(NumDots) ' x, y, xdir, ydir

' Define variables (LONGs only)
DIM curDot      AS LONG
DIM dotsAddr    AS LONG
DIM X           AS LONG
DIM Y           AS LONG
DIM dirX        AS LONG
DIM dirY        AS LONG
DIM seed        AS LONG
DIM temp        AS LONG

' Start of main code
SUB MAIN

    dotsAddr = GETADDR dots

    FOR curDot = 0 TO MaxDots

        RANDOM seed, x
        x = x AND 255

        DO
            RANDOM seed, y
            y = y AND 255
        LOOP UNTIL y < 192

        DO
            RANDOM seed, dirX
            dirX = dirX AND 255
            dirX = dirX / 52
            RANDOM seed, dirY
            dirY = dirY AND 255
            dirY = dirY / 52

            IF dirX <> 2 OR dirY <> 2 THEN EXIT

        LOOP

        WRBYTE dotsAddr, x, y, dirX, dirY
        TV_XPlot x, y
        dotsAddr = dotsAddr + 4

    NEXT

    DO
        dotsAddr = GETADDR dots

        FOR curDot = 0 TO MaxDots

            RDBYTE dotsAddr, x, y, dirX, dirY
            TV_XPlot x, y

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x = x + dirX
x = x - 2

IF x > 255 OR x < 0 THEN
    dirX = 4 - dirX
    x = x + dirX
    x = x - 2
ENDIF

y = y + dirY
y = y - 2

IF y > 191 OR y < 0 THEN
    dirY = 4 - dirY
    y = y + dirY
    y = y - 2
ENDIF

TV_XPlot x, y

WRBYTE dotsAddr, x, y, dirX, dirY

dotsAddr = dotsAddr + 4

NEXT

PAUSE 10

LOOP

END

ENDSUB
```