

This illustrative, Teleprinter conformant plot program, running on 4k of memory, not needing an operating system, was used as a popular demonstration routine as well as for a quick-test of a basic PDP-8 system.

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HI THERE. THIS PROGRAM WILL PLOT TWO SINE WAVES, BOTH WITH THE SAME AMPLITUDE. ONE WILL BE DAMPED, WHILE THE OTHER WILL NOT BE. SPECIFY THE VARIOUS PARAMETERS WHEN ASKED, AND HIT THE RETURN KEY AFTER EACH ANSWER. AND AWAY WE GO.....

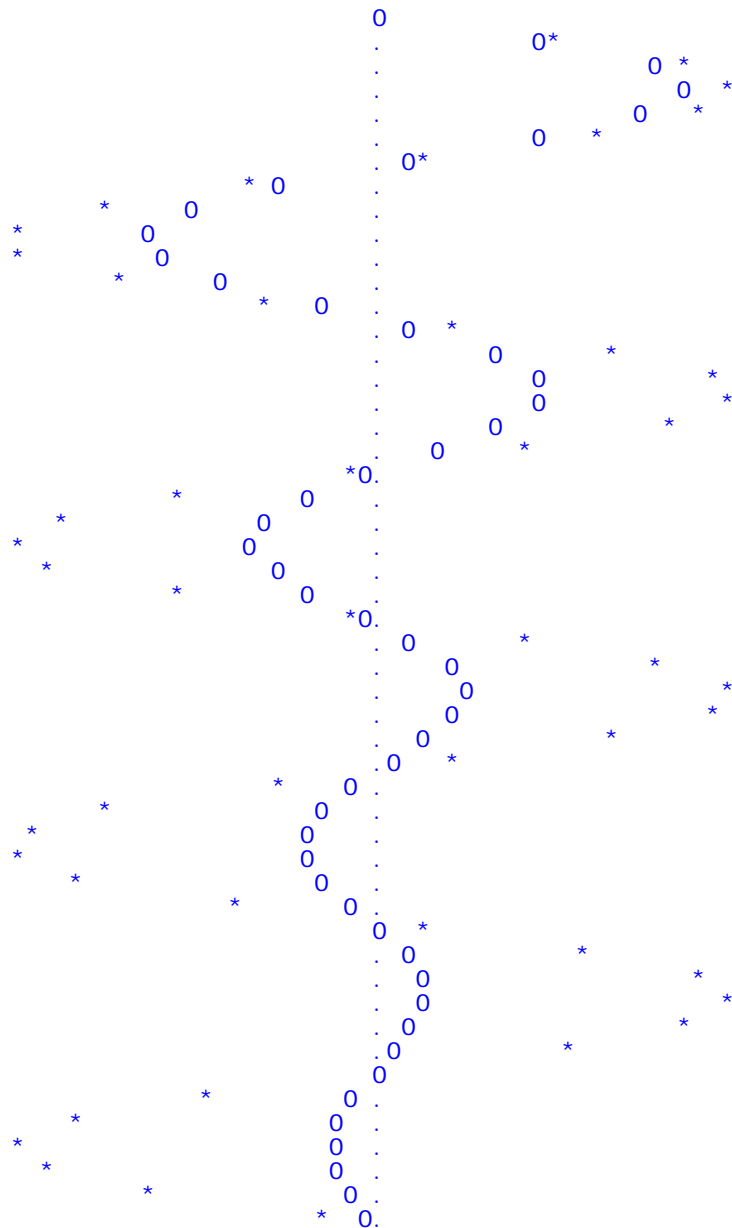
AMPLITUDE (33 MAXIMUM)?: 25

DAMPING FACTOR COEFFICIENT?: 0.1

HOW MANY PERIODS DO YOU WANT TO PLOT?: 4

I WOULD LIKE TO PLOT: 12.58 POINTS PER PERIOD.

TWO SINE WAVES ONE DAMPED BY-- 0.1000



TO RESTART THIS PROGRAM, TYPE GO AND HIT THE RETURN BUTTON.

FOCAL Program of the sine wave plot program:

- **FOCAL** (FOrmula CALculator) is a classic interpreted programming language originally written for PDP-8 machines. Like early versions of BASIC, FOCAL was a complete programming environment in itself, requiring no operating system.
- This particular sine wave plot program was a very useful tool for quick-testing in engineering. Most any of the functions possible on a PDP-8 base system got addressed loading the FOCAL interpreter, then the program, then running it.
- A peculiarity of this small program made it tough for memories. Waiting at the end of the plot for restart, the program actually beats the same few memory cells permanently while waiting in a tiny loop for somebody to hit the key. This rises the temperature of these cells dramatically. Marginal memory units (core or semiconductor) would hardly survive this operating condition.

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C-FOCAL, 1969

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01. 10 TYPE !, !
01. 20 TYPE "HI THERE. THIS PROGRAM WILL PLOT TWO SINE WAVES, "
01. 30 TYPE "BOTH WITH THE SAME!" "AMPLITUDE. ONE WILL BE DAMPED, "
01. 40 TYPE "WHILE THE OTHER WILL NOT BE. SPEC-"!"IFY THE VARIOUS "
01. 50 TYPE "PARAMETERS WHEN ASKED, AND HIT THE RETURN KEY AFTER"!
01. 60 TYPE "EACH ANSWER. AND AWAY WE GO....."!,, !

02. 10 ASK "AMPLITUDE (33 MAXIMUM)?" , A; TYPE !
02. 20 ASK "DAMPING FACTOR COEFFICIENT?" , DA; TYPE !
02. 30 ASK "HOW MANY PERIODS DO YOU WANT TO PLOT?" , PE; TYPE !
02. 40 TYPE "I WOULD LIKE TO PLOT          POINTS PER PERIOD. "#
02. 50 ASK "          "PT; TYPE !,, !

03. 10 TYPE "          T W O   S I N E   W A V E S"
03. 20 TYPE "          ONE DAMPED BY"-DA, !, !
03. 30 SET PI=3.1416
03. 40 FOR T=0, (2*PI)/PT, PE*2*PI; DO 4.0
03. 50 TYPE !, !, !, !"TO RESTART THIS PROGRAM, TYPE GO AND HIT "
03. 60 TYPE "THE RETURN BUTTON."!,, !, !
03. 70 QUIT

04. 10 FOR Y=0, 33; TYPE " "
04. 20 TYPE ". "#
04. 30 FOR Y=0, 33+[A*FSIN(T)]; TYPE " "
04. 40 TYPE "*" "#
04. 50 FOR Y=0, 33+[A*FEXPP(-DA*T)]*FSIN(T); TYPE " "
04. 60 TYPE "0"!
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