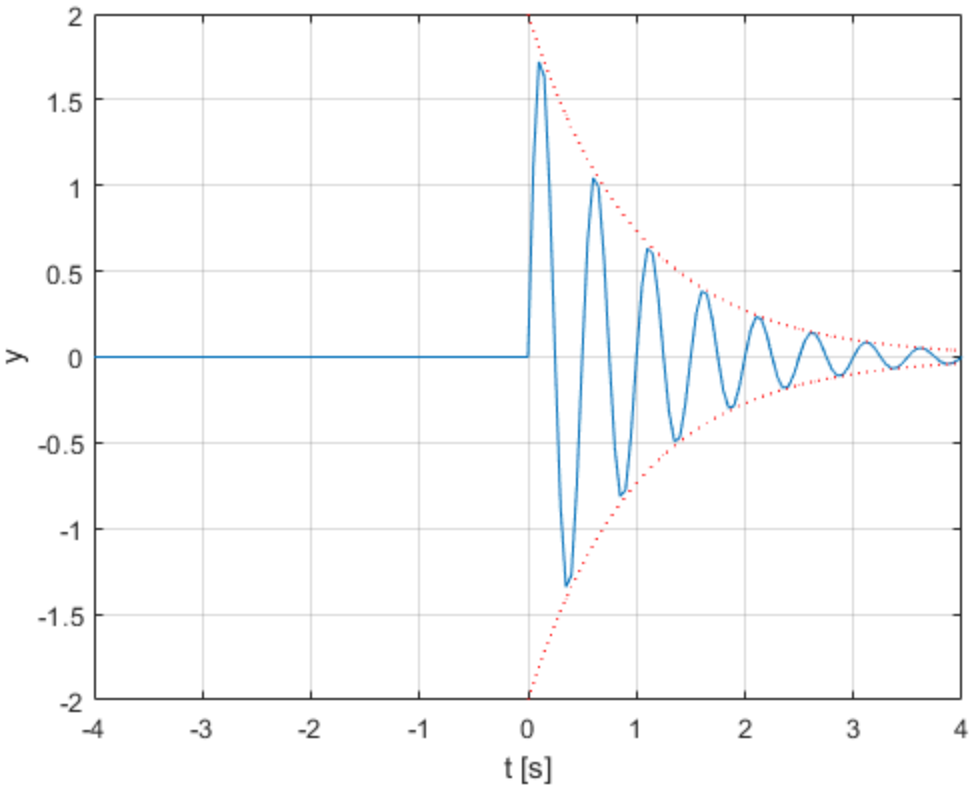
```
% Dan Otieno.
% CPE 381-01.
% Homework 1 - Q4.
% 01/30/2023.
%=========================================================================%
%                          INITIALIZATION.
%=========================================================================%
Fs = 20;%<-------------------------Sampling frequency.
Ts = 1/Fs;%<-----------------------Sampling interval.
f = 2;%<---------------------------Signal frequency 2Hz.
tmax = 4;%<------------------------Maximum time.
t = -tmax:Ts:tmax;%<---------------Time [s].
N = length(t);%<-------------------Number of elements in Vector.
i0 = round(4*Fs)+1;%<--------------Index of time 0 (4s after -4s).
t1 = 0:Ts:4;%<---------------------Time > 0 [s].
%=========================================================================%
%                          SIGNAL.
%=========================================================================%
A = 2;%<---------------------------Amplitude.
xenv = A*exp(-t1);%<---------------Envelope A*e^(-t).
x = xenv.*sin(2*pi*f*t1);%<--------Signal for t>0.
y = zeros(1,N);%<------------------Initialize all elements to 0.
y(i0:N) = x;%<---------------------Add values from time 0.
%=========================================================================%
%                          SIGNAL PLOT.
%=========================================================================%
figure
plot(t,y,t1,xenv,'r:',t1,-xenv,'r:'), xlabel('t [s]'), ylabel('y'), grid on;
%=========================================================================%
```



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