3rd Lab

Table of Contents

Creating signal graph

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This is the function of creating diffrent type of signal wave

```matlab
function y = lab3(t)

if nargin == 0
    t = 0:0.01:6.5;
end
t_sawf = (t>=4)&(t<6); t_saw = t(t_sawf);
t_zerof = (t>=2)&(t<4); t_zero = t(t_zerof);
t_sinf = (t>=6)&(t<6.5); t_sin = t(t_sinf);
t_constf = (t>=0)&(t<1.5); t_const = t(t_constf);
t_noisef = (t>=1.5)&(t<=2); t_noise = t(t_noisef);

% Sine signal
% t_sin = 6:0.01:6.5;
A0 = 0; A = 2; f = 1;
delay = 6;
y_sin = A0 + A*sin(2*pi*f*(t_sin-delay));
plot(t_sin,y_sin)
axis([0 6.5 -1 4])

% Linear function
% t_saw = 4:0.01:6;
k = -2;
delay = 6;
y_saw = k*(t_saw-delay);
hold on
plot(t_saw,y_saw)

% Constant signal
% t_const = 0:0.01:1.5;
y_const = zeros(size(t_const))+2;
plot(t_const,y_const)

% Zero signal
% t_zero = 2:0.01:4;
y_zero = zeros(size(t_zero));
plot(t_zero,y_zero)
```
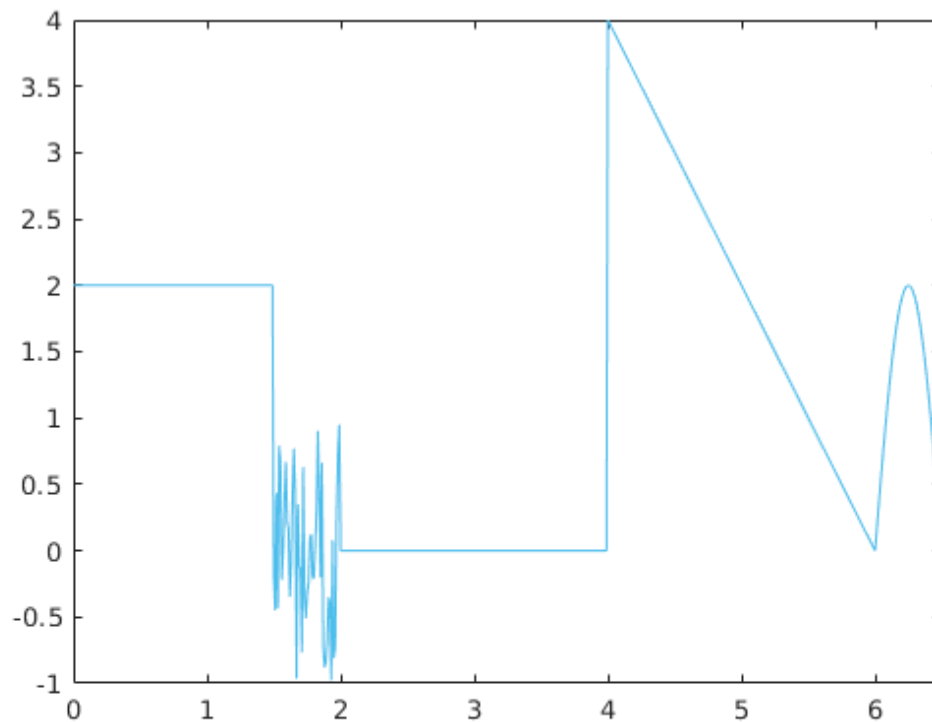
```matlab
% Noise signal
% t_noise = 1.5:0.01:2;
y_noise = 2*rand(size(t_noise))-1;
plot(t_noise,y_noise)

% We will join the signal together
t = [t_const,t_noise,t_zero,t_saw,t_sin];
y = [y_const,y_noise,y_zero,y_saw,y_sin];
if nargout == 0
    plot(t,y)
    y=[];
end
```

ans =

    [ ]

Conclusion:

Today I learned how to create my own signal graph with different type of waves, for example, Constant Signal, Zeros, Linear function, Noise, Harmonic

And the test remind me of commands difference between matlab and other programming languages (C, Python etc.).

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