
MATLAB programming course for beginners, supported by Wagatsuma Lab@Kyutech

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Specifications and requirements

1. @Time : 2021-5-19
2. @Author : Hiroaki Wagatsuma
3. @Site : (1) https://github.com/hirowgit/1B0_matla_optmization_course
4. @Site : (2) https://github.com/hirowgit/1B1_matlab_signal_analysis_course
5. @IDE : MATLAB R2018a
6. @File : (1) TSP_lecture2.m
7. @File : (2) lec1D_A2_PLF_plot_Normal.m

Main program

```
clear all

close all
% sin wave

figure(1); clf
```

```
set(1,'name','sine_wave2','Position',[720 820 870 400]);
leglabel={'piecewise linear function', 'original sine wave'};
dT=0.1;

t=0:dT:2*pi+dT;
y=sin(t);

y2=@(t) (2/pi*t).*(t<=pi/2)+(-2/pi*t+2).*(t>pi/2 & t<=pi) ...
    +(-2/pi*t+2).*(t>pi & t<=3*pi/2)+(2/pi*t-4).*(t>3*pi/2 & t<=2*pi);
% see more detail of how you can obtain this parameters in
TSP_lecture3.m

plot(t,y2(t),t,y,'.-','LineWidth',2,'MarkerSize',12);
set(gca,'xlim',[0,2*pi],'ylim',[-1.2,1.2],'FontSize',14);
legend(leglabel,'best')

xtickpoint=0:pi/4:2*pi;
xlabel={'0','\pi/4','\pi/2','3\pi/4','\pi','5\pi/4','3\pi/2','7\pi/4','2\pi'};
set(gca,'xtick',xtickpoint,'xticklabel',xlabel)
title('Sine wave');
grid on;
axis equal;

datafname='m_figures';
save_fig;
```

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