Two Dimensional Plots

1. Simple Line Plot

```
% Example 1
   X = [1 2 3 5 7 7.5 8 10];
   Y = [2 6.5 7 7 5.5 4 6 8];
   plot (X,Y)
% Example 2
   X = 0:pi/100:2*pi;   % 0 to 2*pi with steps pi/100
   Y = sin(x);
   Plot (X,Y)
% Example 3
   x=linspace(0,2*pi); % a lin vect between 0 to 2pi with built-in 100 points
   y=sin(x);
   plot(x,y)
   xlabel('x')
   ylabel('sin(x)')
   title('plot of sine function')

% Example 4    ( all three characteristics (line color, style, and marker))
   x = linspace(0,2*pi,50);  % a lin vect between 0 to 2pi with 50 points
   y = sin(x);
   plot(x,y,':')   % dotted line, colour built-in blue
   hold on
   y2 = cos(x);
   plot(x,y2,'--ro')  % dashed line with colour red and marker circle
   hold off
```

2. Additional Options

>> plot (x, y, 'line specifiers', 'Property Name', Property Value)

Line specifiers defines type and colour of the line and the marker

Property Name defines the line width

Property value defines the size of the marker

Line Specifier : solid '-', dashed '--', dotted ':', dash-dot '-.'

Line Colour : red 'r', green 'g', blue 'b', yellow 'y', black 'k', magenta 'm'

Marker Type : + , o, *, ., etc. square 's' diamond 'd' star 'p' etc.

Try to understand these commands

```
plot(x,y)
plot(x,y,'r')
plot(x,y,'--y')
plot(x,y,'*')
plot(x,y,'g:d')
```

```
%Example 5
   x = -pi:pi/10:pi;
   y = tan(sin(x)) - sin(tan(x));

   figure
   plot(x,y,'--gs',...
       'LineWidth',2,...
       'MarkerSize',10,...
       'MarkerEdgeColor','y',...
       'MarkerFaceColor',[0.5,0.5,0.5])
```

3. **Simple Line Plot**

```
% Example 6
x = linspace(0,10,50);
y1 = sin(x);
plot (x,y1)
title ('combine plots')
hold on
y2 = cos (x);
plot (x,y2)
y3 = sin (x/2);
plot (x, y3)
hold off
% Example 7
    %t = plots in two rows and two columns
    t = Tiledlayour
    title (t,"Trigonometric Functions")
    x = linspace(0,30);
    nexttile
    plot(x,sin(x))
    title("Sine")
    hold on
    nexttile
    plot(x,cos(x))
    title("Cosine")
    nexttile
    plot(x,tan(x))
    title("Tangent")
    nexttile
    plot(x,sec(x))
    title("Secant")
    hold off
```