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# **Specifications and requirements**

1. @Time: 2021-1-16

2. @Author: Hiroaki Wagatsuma

 $3. @ Site: https://github.com/hirowgit/1B0\_matla\_optmization\_course$ 

4. @IDE: MATLAB R2018a

5. @File: A1\_ExcelRead\_and\_Plot\_Normal.m

## Main program

```
clear all;
clc

dataF='output';
fname='to_csv2.csv';
dname='Mdat';

Mdat=readtable(fullfile(dataF,fname));
lineD={};
```

```
Mdat.Properties
size(Mdat)
varnames=Mdat.Properties.VariableNames;
varnames
j=1;
Lsize=(size(Mdat,2)-1)/2;
for k=1:Lsize
    strLx=['x',num2str(k),'=',dname,'.',varnames\{k*2\}];
    strLy=['y',num2str(k),'=',dname,'.',varnames\{k*2+1\}];
    eval(strLx); eval(strLy);
    strLx=['lineD{',num2str(k),'}(:,1)=',dname,'.',varnames{k*2}];
    strLy=['lineD{',num2str(k),'}(:,2)=',dname,'.',varnames{k*2+1}];
    eval(strLx); eval(strLy);
end
for k=1:Lsize
    Dedge=find(lineD{k}(:,1)>0 & lineD{k}(:,1)>0);
    mD=max(Dedge);
    lineD2\{k\}=[lineD\{k\}(1:mD,1) \ lineD\{k\}(1:mD,2)];
응
      lineD\{k\}(:,1)=find(lineD\{k\}(:,1)
end
figure(1); clf
colM=colormap(lines(Lsize));
for k=1:Lsize
    pdata=lineD2{k};
    plot(pdata(:,1),pdata(:,2), 'color',colM(k,:), 'LineWidth',2),
hold on;
end
myXlim=get(gca,'xlim'); myYlim=get(gca,'ylim');
set(gca,'xlim',myXlim+[-10 10],'ylim',myYlim+[-10 10]);
grid on; xlabel('x','FontSize',12); ylabel('y','FontSize',12)
ans =
  struct with fields:
             Description: ''
                UserData: []
          DimensionNames: {'Row'
                                   'Variables' }
           VariableNames: {1x9 cell}
    VariableDescriptions: {}
           VariableUnits: {}
      VariableContinuity: []
                RowNames: { }
ans =
   202
           9
```

```
varnames =
  1×9 cell array
 Columns 1 through 7
                \{'x1'\} \{'y1'\} \{'x2'\} \{'y2'\} \{'x3'\}
    {'Var1'}
 {'y3'}
 Columns 8 through 9
   {'x4'} {'y4'}
x1 =
   72.0000
   72.0000
   72.0000
   73.0141
   74.0282
   75.0423
   76.0563
   77.0704
   78.0845
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   97.3521
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 156.9296
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 158.9577
 159.9718
 160.9859
 162.0000
lineD =
 1×1 cell array
```

{202×1 double}

```
lineD =
  1×1 cell array
    {202×2 double}
x2 =
   72.0000
   72.0000
   72.0000
   73.0141
   74.0282
   75.0423
   76.0563
   77.0704
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	79.8776
	81.0000
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	wagaisuna Lao Kyuteen
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lineD =
  1×2 cell array
    \{202\times2 \text{ double}\} \{202\times1 \text{ double}\}
lineD =
  1×2 cell array
```

#### $\{202\times2 \text{ double}\}\$ $\{202\times2 \text{ double}\}$

*x*3 = 180.0000 180.0000 180.0000 179.9722 179.8900 179.7553 179.5698 179.3354 179.0538 178.7269 178.3566 177.9445 177.4925 177.0025 176.4763 175.9155 175.3222 174.6981 174.0449 173.3646 172.6589 171.9296 171.1785 170.4076 169.6185 168.8131 167.9932 167.1606 166.3171 165.4645 164.6047 163.7395 162.8707 162.0000 162.0000 160.5803 159.1684 157.7723 156.3998 155.0588 153.7571 152.5027 151.3034 150.1671 149.1016 148.1149 147.2148 146.4091

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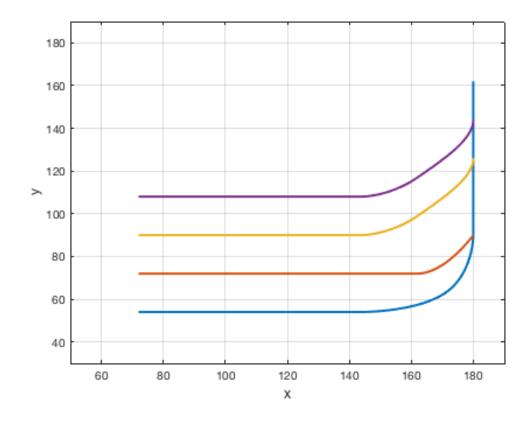
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lineD =
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double }
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