Class_Work_5

Contents

General

```
clear all, clc, format compact
```

String

A special variable type for characters. In MATLAB a sting is actually a vector which
each element is a single character. Defining a string – using " ' " :

```
s='red' %creates a 3-element character array
a1=5
s1=s(1)
s3=s(3)
g1=double(s) %returns the ascii value for s
g2=char(g1)
x=['ab' 'cd' 'ef']  %This line creates a new string variable from three other strings

y=['hello'; 'world'] %each row of such an array must have exactly the same length
r1=['g', s(2), 't','  ','r',s(2),'a',s(3),'y']
r2=[r1, '2010']
```

```
s =
red
a1 =
     5
s1 =
r
s3 =
d
g1 =
   114   101   100
g2 =
red
x =
abcdef
y =
hello
```

```
world
r1 =
get  ready
r2 =
get  ready2010
```

num2str(number)- creates a string from a number

```
clc
f1=750;
f2=num2str(f1);
f3=[f2(2),f2(3),f2(1),f2(2)]
```

```
f3 =
5075
```

str2num(string)-does the opposite (from string to number)

```
clc
f4=str2num(f3)+3
```

```
f4 =
        5078
```

class_assignment_5-1

```
clc
x=9*round(rand*1111)
x1=num2str(x)
x2=x1' %separate digits number
x3=str2num(x2)
s=sum(x3)
result=round(s/9)-s/9
```

```
x =
        9288
x1 =
9288
x2 =
9
2
8
8
x3 =
     9
     2
     8
     8
s =
    27
result =
     0
```

Combine numerical variables in a string

```
a=5;
s='The number of the element is:  ';
s1=[s num2str(a)]
```

```
s1 =
```

```
The number of the element is:  5
```

disp (a) - to display a single variable (either numerical or string)

```
b=45;
disp(b)
disp('hello')
disp(b^2)
disp([s, num2str(a)])
disp(s1)


     45
hello
        2025
The number of the element is:  5
The number of the element is:  5
```

input- waits for input from the user

```
clc
% t=input('time=?  '); % can be string or numeric variable (matrice, vector, function...)
% t=input('time=?  ','s');     %returns the entered text as a MATLAB string
```

class_assignment_5-3

```
clc
% d=input('day=');
% m=input('month=','s');
% y=input('year=');
% disp(['Today is: ',num2str(d),', ',m,' ',num2str(y)])
```

class_assignment_5-4

```
clc
% A=input ('what is your name?  ');
% A=sort(A);
% l=length(A)
% S=[A,'_',num2str(l)]
% %%Second option
% A=sort(input ('what is your name?  '));
% S=[A,'_',num2str(length(A))];
% disp(['your password is:  ', S])
```

class_assignment_5--5

```
A=round(rand(3,5)*30-20);
[l m]=size(A);
b=['The matrice size is:  ',num2str(l), 'X',num2str(m)];
disp (b)


The matrice size is:  3X5
```

Display a table

```
clc
x=1:10;
y=exp(x);
disp('     x          exp(x)')
disp([x' y'])
```

```
     x       exp(x)
  1.0e+004 *
    0.0001    0.0003
    0.0002    0.0007
    0.0003    0.0020
    0.0004    0.0055
    0.0005    0.0148
    0.0006    0.0403
    0.0007    0.1097
    0.0008    0.2981
    0.0009    0.8103
    0.0010    2.2026
```
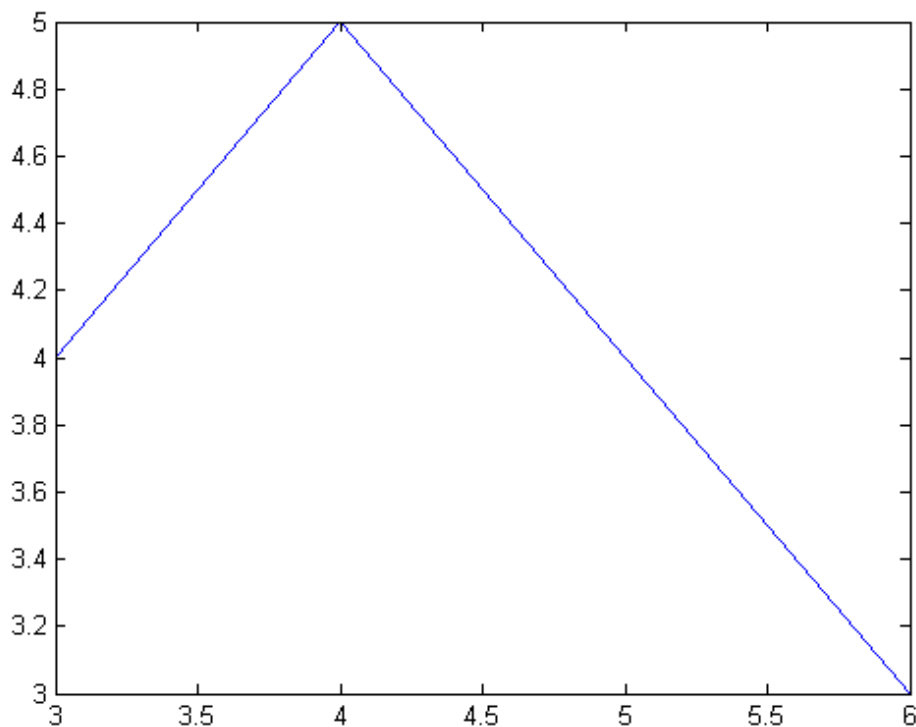
class_assignment_5-6

```
clc
A=(10-6)*rand(4,5)+6;
disp('     Min     Max     Mean')
disp([min(min(A)), max(A(:)), mean(A(:)) ])
```

```
      Min      Max      Mean
    6.0476   9.7360    7.7618
```
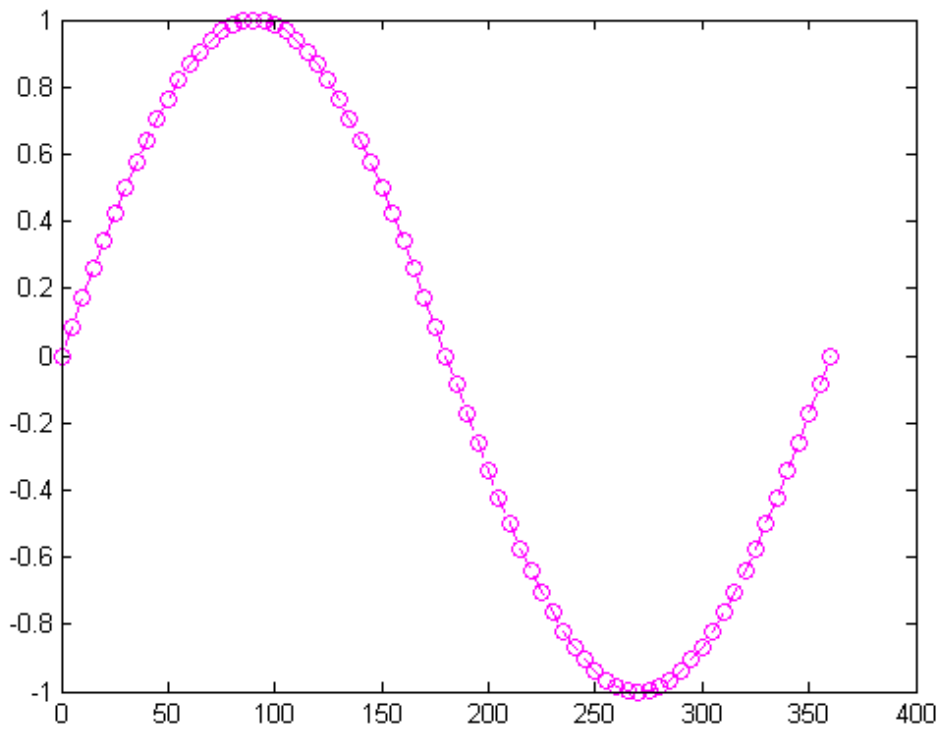
Plot- plot(x,y)

```
plot([ 3 4 6],[4 5 3]) % several coordinates
```
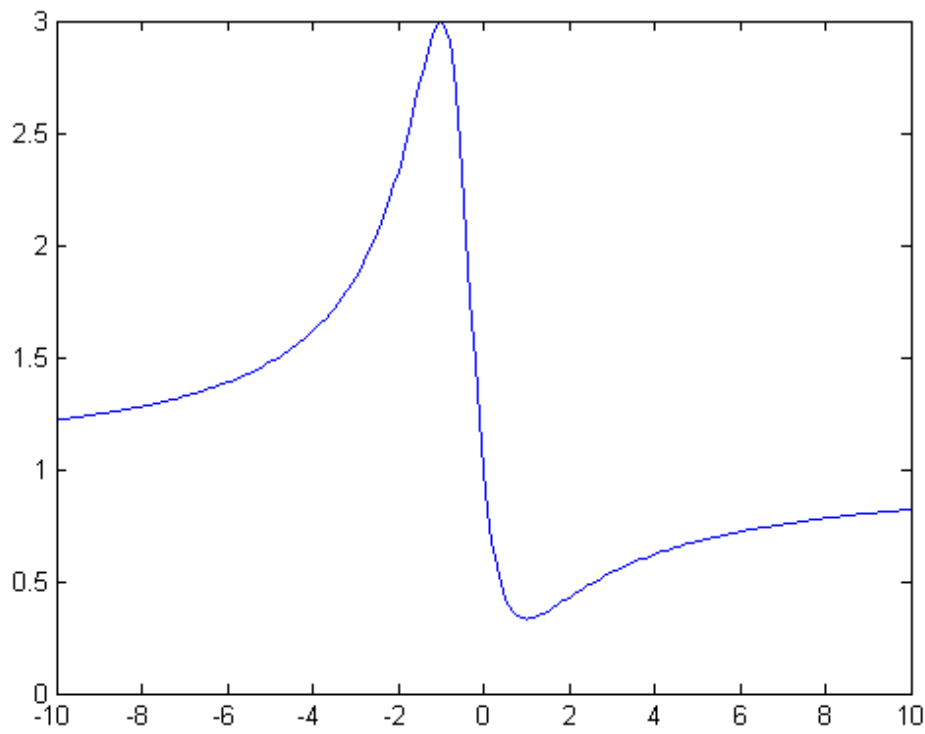

Generate plot of continious function

LineSpec- Line specification syntax - line style, marker, and color specifiers

```
x=0:5:360;
y=sind(x);
plot(x,y,'r:s')
plot(x,y,'b--d')
plot(x,y,'m--o')
```


class_assignment_5-8

```
x=-10:0.1:10;
y=(x.^2-x+1)./(x.^2+x+1);
plot(x,y)
```

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