Command Window in the MATLAB Tutorial

```
To get started, select MATLAB Help or Demos from the Help menu.

>> syms x
>> x ) 0
??? x ) 0
      |
Error: Unbalanced or misused parentheses or brackets.

>> x = 0

x =

     0

>> doc
>> x = 3 + 2*i

x =

   3.0000 + 2.0000i

>> x = 3 + 2*j

x =

   3.0000 + 2.0000i

>> 'sadsf'

ans =

sadsf

>> ['asd' 'asdaf']

ans =

asdasdaf

>> v = [1 1 342 -1 3+23*j]

v =

  1.0e+002 *

  Columns 1 through 4

   0.0100             0.0100             3.4200            -0.0100

  Column 5

   0.0300 + 0.2300i

>> [2 3 5; 2 3 4]

ans =

     2     3     5
     2     3     4

>> c = cell(2,3)

c =

     []    []    []
     []    []    []

>> c{2,2} = 'sdfsd'

c =

     []        []    []
     []    'sdfsd'   []

>> c{2,3} = v
```

```
c =

     []         []              []
     []    'sdfsd'    [1x5 double]

>> help sin
 SIN    Sine.
    SIN(X) is the sine of the elements of X.

    See also asin, sind.

    Overloaded functions or methods (ones with the same name in other directories)
       help sym/sin.m

    Reference page in Help browser
       doc sin


>> doc sin
>> clear x
>> 1 & 0

ans =

     0

>> (3 > pi)

ans =

     0

>> (3 < pi)

ans =

     1

>> x = 2 + 5*i

x =

   2.0000 + 5.0000i

>> x'

ans =

   2.0000 - 5.0000i

>> v = [2 3 54]

v =

     2     3    54

>> v = linspace(0, 1, 100)

v =

  Columns 1 through 7

         0    0.0101    0.0202    0.0303    0.0404    0.0505    0.0606

  Columns 8 through 14

    0.0707    0.0808    0.0909    0.1010    0.1111    0.1212    0.1313

  Columns 15 through 21

    0.1414    0.1515    0.1616    0.1717    0.1818    0.1919    0.2020

  Columns 22 through 28

    0.2121    0.2222    0.2323    0.2424    0.2525    0.2626    0.2727

  Columns 29 through 35

    0.2828    0.2929    0.3030    0.3131    0.3232    0.3333    0.3434
```

```
  Columns 36 through 42

    0.3535    0.3636    0.3737    0.3838    0.3939    0.4040    0.4141

  Columns 43 through 49

    0.4242    0.4343    0.4444    0.4545    0.4646    0.4747    0.4848

  Columns 50 through 56

    0.4949    0.5051    0.5152    0.5253    0.5354    0.5455    0.5556

  Columns 57 through 63

    0.5657    0.5758    0.5859    0.5960    0.6061    0.6162    0.6263

  Columns 64 through 70

    0.6364    0.6465    0.6566    0.6667    0.6768    0.6869    0.6970

  Columns 71 through 77

    0.7071    0.7172    0.7273    0.7374    0.7475    0.7576    0.7677

  Columns 78 through 84

    0.7778    0.7879    0.7980    0.8081    0.8182    0.8283    0.8384

  Columns 85 through 91

    0.8485    0.8586    0.8687    0.8788    0.8889    0.8990    0.9091

  Columns 92 through 98

    0.9192    0.9293    0.9394    0.9495    0.9596    0.9697    0.9798

  Columns 99 through 100

    0.9899    1.0000

>> v = linspace(0, 1, 100);
>> v = -1:1

v =

    -1     0     1

>> v = -1:0.15:1

v =

  Columns 1 through 7

   -1.0000   -0.8500   -0.7000   -0.5500   -0.4000   -0.2500   -0.1000

  Columns 8 through 14

    0.0500    0.2000    0.3500    0.5000    0.6500    0.8000    0.9500

>> doc rand
>> rand(1, 5)

ans =

    0.9501    0.2311    0.6068    0.4860    0.8913

>> v

v =

  Columns 1 through 7

   -1.0000   -0.8500   -0.7000   -0.5500   -0.4000   -0.2500   -0.1000

  Columns 8 through 14

    0.0500    0.2000    0.3500    0.5000    0.6500    0.8000    0.9500

>> v(3)
```

```
ans =

   -0.7000

>> v([3 5 6])

ans =

   -0.7000   -0.4000   -0.2500

>> v(3:6)

ans =

   -0.7000   -0.5500   -0.4000   -0.2500

>> length(v)

ans =

    14

>> [1 2 3; -1 -2 -3; 4 5 5]

ans =

     1     2     3
    -1    -2    -3
     4     5     5

>> [1 2 3; -1 -2 -3; 4 5, 5]

ans =

     1     2     3
    -1    -2    -3
     4     5     5

>> A = [1 2 3; -1 -2 -3; 4 5, 5]

A =

     1     2     3
    -1    -2    -3
     4     5     5

>> A(4, 3) = 4

A =

     1     2     3
    -1    -2    -3
     4     5     5
     0     0     4

>> A(8, 3) = 4

A =

     1     2     3
    -1    -2    -3
     4     5     5
     0     0     4
     0     0     0
     0     0     0
     0     0     0
     0     0     4

>> zeros(4)

ans =

     0     0     0     0
     0     0     0     0
     0     0     0     0
     0     0     0     0

>> zeros(4, 2)

ans =
```

```
     0     0
     0     0
     0     0
     0     0

>> eye(4)

ans =

     1     0     0     0
     0     1     0     0
     0     0     1     0
     0     0     0     1

>> eye(4, 7)

ans =

     1     0     0     0     0     0     0
     0     1     0     0     0     0     0
     0     0     1     0     0     0     0
     0     0     0     1     0     0     0

>> A

A =

     1     2     3
    -1    -2    -3
     4     5     5
     0     0     4
     0     0     0
     0     0     0
     0     0     0
     0     0     4

>> A(3,4)
??? Index exceeds matrix dimensions.

>> A(3,2)

ans =

     5

>> A(3,[2 3])

ans =

     5     5

>> size(A)

ans =

     8     3

>> A = magic(5)

A =

    17    24     1     8    15
    23     5     7    14    16
     4     6    13    20    22
    10    12    19    21     3
    11    18    25     2     9

>> B = magic(5)

B =

    17    24     1     8    15
    23     5     7    14    16
     4     6    13    20    22
    10    12    19    21     3
    11    18    25     2     9

>> B = rand(5, 5)

B =
```

```
    0.7621    0.6154    0.4057    0.0579    0.2028
    0.4565    0.7919    0.9355    0.3529    0.1987
    0.0185    0.9218    0.9169    0.8132    0.6038
    0.8214    0.7382    0.4103    0.0099    0.2722
    0.4447    0.1763    0.8936    0.1389    0.1988

>> A*B

ans =

   37.1712   38.9403   46.9521   12.4284   13.9798
   38.5550   37.7225   40.4691   11.1483   16.8754
   32.2394   37.8389   47.0211   16.1728   19.6704
   32.0338   49.2032   44.0005   20.8873   22.1968
   22.7072   47.1328   53.0872   28.5873   23.2359

>> A.*B

ans =

   12.9556   14.7704    0.4057    0.4631    3.0415
   10.4988    3.9597    6.5483    4.9402    3.1795
    0.0740    5.5309   11.9198   16.2633   13.2834
    8.2141    8.8585    7.7951    0.2071    0.8166
    4.8917    3.1728   22.3412    0.2778    1.7893

>> A/B

ans =

   34.5483  -29.1895   21.8317   10.4357  -11.2008
  194.3148  -76.1752   34.5618 -121.3435   19.6034
   85.1453  -69.7560   44.9943  -50.3882   25.8804
  186.2596    0.3520   15.6088 -157.0889   -7.5632
  -99.6154   18.1170   -2.2087   86.7751   16.6627

>> A./B

ans =

  1.0e+003 *

    0.0223    0.0390    0.0025    0.1382    0.0740
    0.0504    0.0063    0.0075    0.0397    0.0805
    0.2162    0.0065    0.0142    0.0246    0.0364
    0.0122    0.0163    0.0463    2.1295    0.0110
    0.0247    0.1021    0.0280    0.0144    0.0453

>> A^2

ans =

        1090         900         725         690         820
         850        1075         815         720         765
         700         840        1145         840         700
         765         720         815        1075         850
         820         690         725         900        1090

>> A.^2

ans =

   289   576     1    64   225
   529    25    49   196   256
    16    36   169   400   484
   100   144   361   441     9
   121   324   625     4    81

>> sin(A)

ans =

   -0.9614   -0.9056    0.8415    0.9894    0.6503
   -0.8462   -0.9589    0.6570    0.9906   -0.2879
   -0.7568   -0.2794    0.4202    0.9129   -0.0089
   -0.5440   -0.5366    0.1499    0.8367    0.1411
   -1.0000   -0.7510   -0.1324    0.9093    0.4121

>> expm(A)

ans =
```

```
  1.0e+027 *

    3.3898    3.3898    3.3898    3.3898    3.3898
    3.3898    3.3898    3.3898    3.3898    3.3898
    3.3898    3.3898    3.3898    3.3898    3.3898
    3.3898    3.3898    3.3898    3.3898    3.3898
    3.3898    3.3898    3.3898    3.3898    3.3898

>> doc exp
 Overloaded functions or methods (ones with the same name in other directories)
   doc ftseries/exp

>> x

x =

   2.0000 + 5.0000i

>> x'

ans =

   2.0000 - 5.0000i

>> x(2) = 3

x =

   2.0000 + 5.0000i   3.0000

>> x'

ans =

   2.0000 - 5.0000i
   3.0000

>> x.'

ans =

   2.0000 + 5.0000i
   3.0000

>> for u = [4 5 8]
u
end

u =

     4


u =

     5


u =

     8

>> for u = 1:8
u
end

u =

     1


u =

     2


u =

     3
```

```
u =

     4


u =

     5


u =

     6


u =

     7


u =

     8

>> if 1 == 2
u
end
>> 1==2

ans =

     0

>> 1==1

ans =

     1

>>
>>
>>
>> g = input('Enter g: ')
Enter g: 50

g =

    50

>> g = input('Enter g: ');
Enter g: 50
>>
>>
>> g

g =

    50

>> disp(g)
    50

>> num2str(g)

ans =

50

>> out = num2str(g)

out =

50

>> disp(['g is ', num2str(g)])
g is 50
>> disp(['g is ', num2str(g) '.'])
g is 50.
>>
>>
```

```
>> time = 0:0.01:3;
>> x = time^2;
??? Error using ==> mpower
Matrix must be square.

>> x = time.^2;
>> x = 2.time.^2 - 1;
??? x = 2.time.^2 - 1;
          |
Error: Missing MATLAB operator.

>> x = 2*time.^2 - 1;
>> plot(time, x)
>> time = 0:0.1:3;
>> x = 2*time.^2 - 1;
>> plot(time, x)
>> time = 0:0.5:3;
>> x = 2*time.^2 - 1;
>> plot(time, x)
>> plot(time, x, '--')
>> plot(time, x, '--r')
>> doc plot
 Overloaded functions or methods (ones with the same name in other directories)
   doc curvefit/plot
   doc ftseries/plot
   doc fixedpoint/plot
   doc mpc/plot
   doc rf/plot
   doc wavelet/plot
   doc simulink/plot

>> plot(time, x, '--rx')
>> plot(time, x, '--rx')
>> plot(time, x, '--bx')
>> plot(time, x, '--rx')
>> hold on;
>> plot(time, 2*x, '--kx')
>> figure;
>> plot(time, 2*x, '--kx')
>> grid on
>> title('tt')
>> figure; stem(time, 2*x, '--kx')
>> figure; stem(time, 2*x, '--k')
>> hold on
>> plot(time, 2*x, '--r')
>> figure; bar(time, 2*x, '--r')
??? There is no 'marker' property in the 'barseries' class.

Error in ==> bar at 78
    h = [h specgraph.barseries('YData',y(:,k), xdata{:}, pvpairs{:},...

>> figure; bar(time, 2*x)
>> figure;
>> subplot(2, 4, 1)
>> plot(time, 2*x, '--r')
>> subplot(2, 4, 5)
>> plot(time, 2*x, '--r')
>> subplot(2, 4, 6)
>> plot(time, 2*x, '--r')
>> subplot(2, 4, 7)
>> bar(time, 2*x, '--r')
??? There is no 'marker' property in the 'barseries' class.

Error in ==> bar at 78
    h = [h specgraph.barseries('YData',y(:,k), xdata{:}, pvpairs{:},...

>> bar(time, 2*x)
>> xlabel('time')
>> doc function
 Overloaded functions or methods (ones with the same name in other directories)
   doc compiler/function
   doc sloptim/function
   doc commblks/function

>> syms a b c
>> a + 2*a

ans =

3*a
```

```
>> a + 2*a

ans =

3*a


>> solve('2*x + x^2 = 5')

ans =

 -1+6^(1/2)
 -1-6^(1/2)


>> solve('2*x + x^2 + y = 5', 'y')

ans =

-2*x-x^2+5


>> doc solve
>> solve(2*x + x^2)
??? Error using ==> mpower
Matrix must be square.

>> solve(2*a + a^2)

ans =

  0
 -2


>> doc pretty
>> 3 == 4

ans =

     0

>> A

A =

    17    24     1     8    15
    23     5     7    14    16
     4     6    13    20    22
    10    12    19    21     3
    11    18    25     2     9

>> find(A)

ans =

     1
     2
     3
     4
     5
     6
     7
     8
     9
    10
    11
    12
    13
    14
    15
    16
    17
    18
    19
    20
    21
    22
    23
    24
```

```
    25

>> [r c] = find(A)

r =

     1
     2
     3
     4
     5
     1
     2
     3
     4
     5
     1
     2
     3
     4
     5
     1
     2
     3
     4
     5
     1
     2
     3
     4
     5

c =

     1
     1
     1
     1
     1
     2
     2
     2
     2
     2
     3
     3
     3
     3
     3
     4
     4
     4
     4
     4
     5
     5
     5
     5
     5

>> r'

ans =

  Columns 1 through 12

     1     2     3     4     5     1     2     3     4     5     1     2

  Columns 13 through 24

     3     4     5     1     2     3     4     5     1     2     3     4

  Column 25

     5

>> c'

ans =
```

```
  Columns 1 through 12

     1     1     1     1     1     2     2     2     2     2     3     3

  Columns 13 through 24

     3     3     3     4     4     4     4     4     5     5     5     5

  Column 25

     5

>> A

A =

    17    24     1     8    15
    23     5     7    14    16
     4     6    13    20    22
    10    12    19    21     3
    11    18    25     2     9

>> A(4, 4) = 4

A =

    17    24     1     8    15
    23     5     7    14    16
     4     6    13    20    22
    10    12    19     4     3
    11    18    25     2     9

>> [r c] = find(A == 4)

r =

     3
     4


c =

     1
     4

>> A(A == 4)

ans =

     4
     4

>> A(A > 4)

ans =

    17
    23
    10
    11
    24
     5
     6
    12
    18
     7
    13
    19
    25
     8
    14
    20
    15
    16
    22
     9

>> A > 4

ans =
```

```
     1     1     0     1     1
     1     1     1     1     1
     0     1     1     1     1
     1     1     1     0     0
     1     1     1     0     1

>>
```