

Matlab

- Matlab
- M
- Matlab
-
-
-

Matlab

Matlab

- Matlab
- Matlab 6.x

Command Window)

Launch Pad

Workspace

Command History

Current Directory

Workspace

Stack: Base

Name	Size	Bytes	Class
x	2x3	48	double array
y	2x3	48	double array

Launch Pad Workspace

Current Directory

C:\MATLAB6p1\work

All files	File Type	Last Modified

Command History Current Directory

Command Window

To get started, select "MATLAB Help" from the Help menu.

```
>> x=[2 3 5;4 2 1]
x =
     2     3     5
     4     2     1

>> x=[2 3 5;4 2 1];
>> y=[1 3 5;2 2 1];
>> y
y =
     1     3     5
     2     2     1

>>
```

1

Matlab

$x = [2 \ 3 \ 5; 4 \ 2 \ 1]$

“ ”

“ ”

2x3

$x = 2 \ 3 \ 5$

$4 \ 2 \ 1$

“ ”

2

Matlab

M

Command Window

To get started, select "MATLAB Help" from the Help menu.

```
>> x=[2 3 5; 4 2 1]
```

```
x =
```

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

```
>> x=[2 3 5; 4 2 1];
```

```
>> y=[1 3 5; 2 2 1];
```

```
>> z=x;
```

```
>> y
```

```
y =
```

```
     1     3     5
     2     2     1
```

```
>> |
```

2

-

Launch Pad

Database Toolbox
Help

Help
3

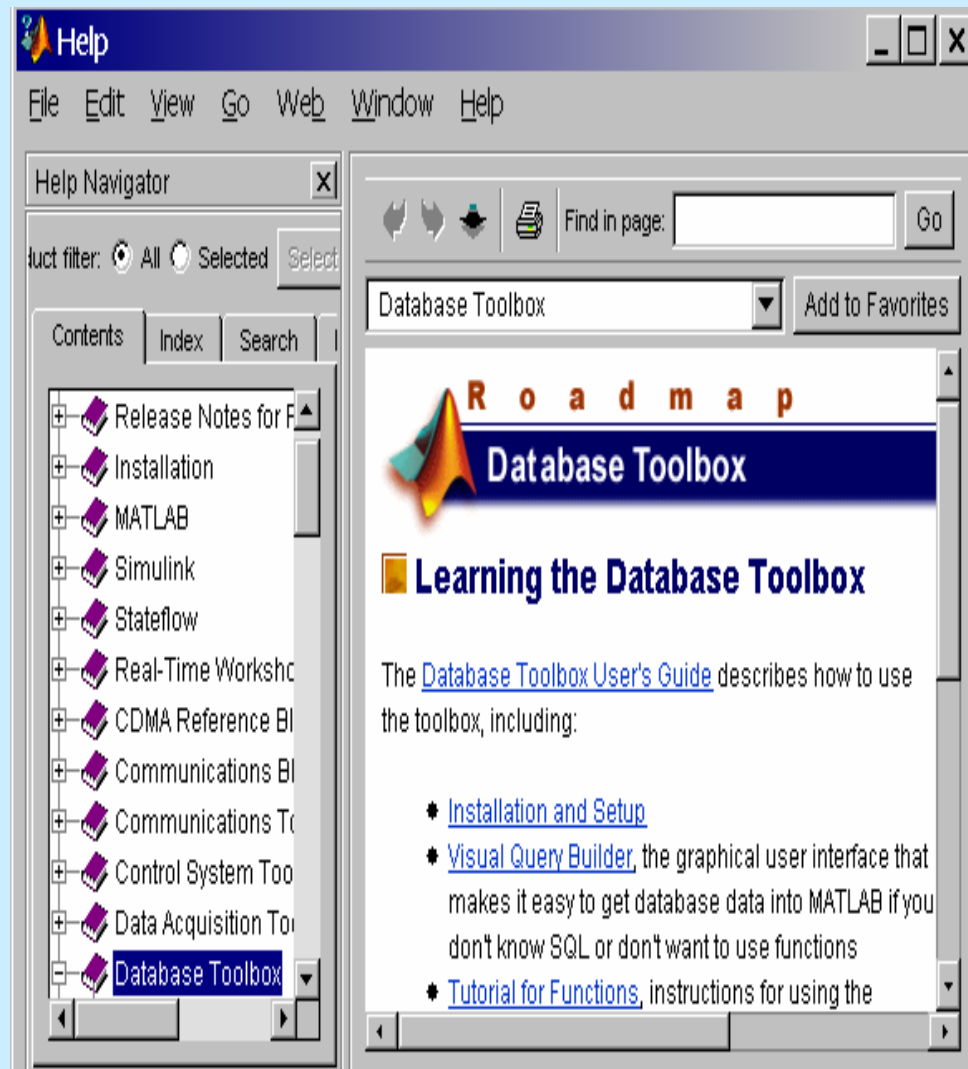
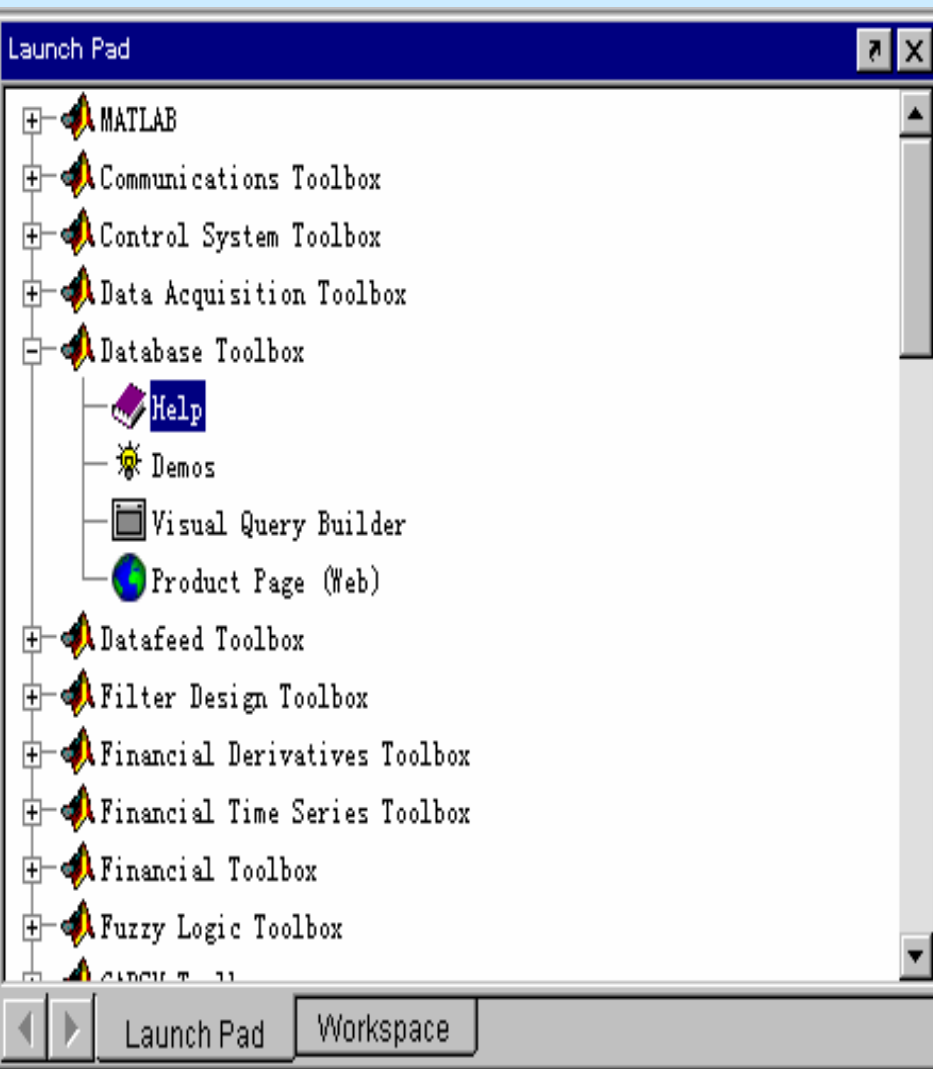
- 3

Matlab

x y

x

x



The image displays the MATLAB software interface. The **Workspace** window shows two variables, `x` and `y`, both of size `2x3` and class `double array`. The **Command Window** shows the command `>> x=[2 3 5;4 2 1]` and the resulting matrix `x`:

```
x =  
     2     3     5  
     4     2     1
```

The **Array Editor: x** window shows the matrix `x` in a grid format:

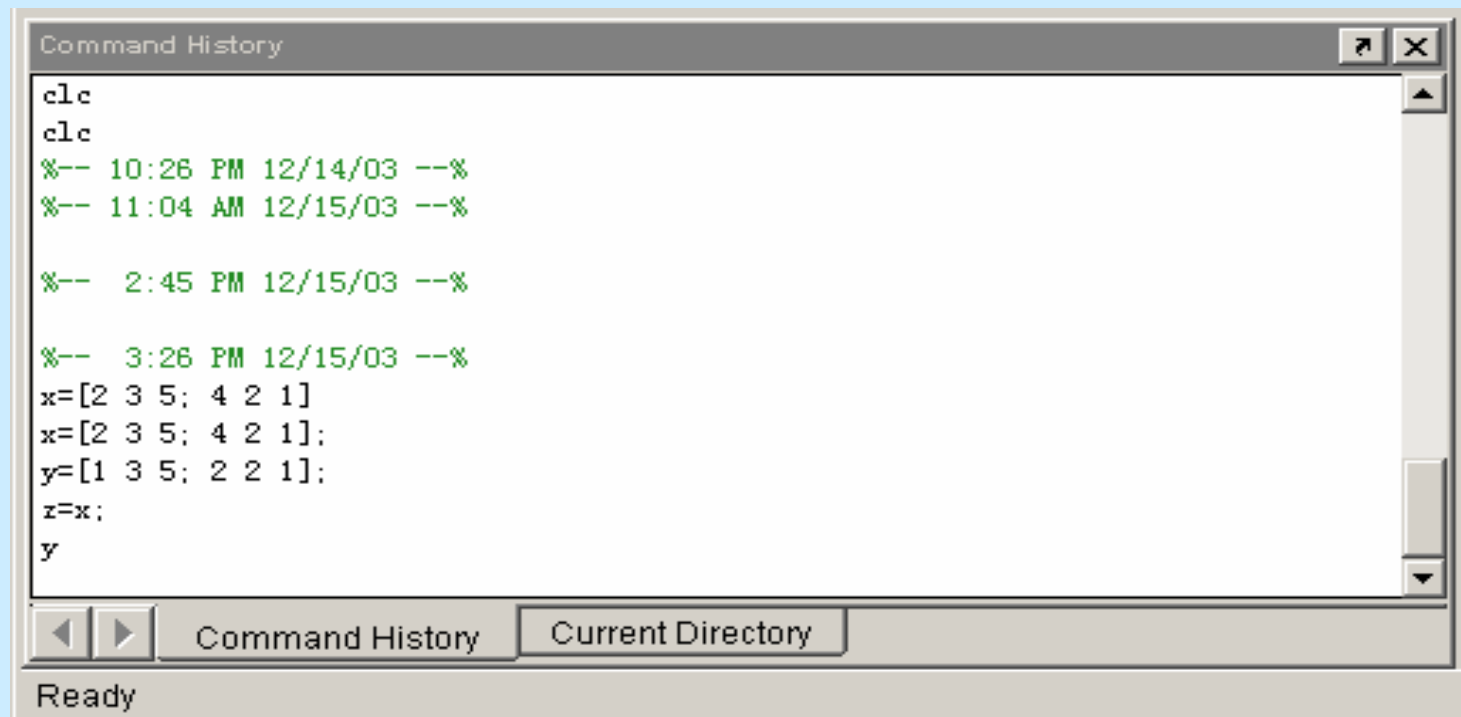
	1	2	3	4
1	2	3	5	
2	4	2	1	

The **Command Window** also shows the prompt `>>` and the text "To get started, select 'MATLAB'".

4

-

Command History



The screenshot shows a window titled "Command History" with a scrollable list of commands and timestamps. The commands include "clc", "x=[2 3 5; 4 2 1]", "y=[1 3 5; 2 2 1]", and "z=x;". The timestamps range from 10:26 PM 12/14/03 to 3:26 PM 12/15/03. The window also features a "Current Directory" button and a "Ready" status bar.

```
Command History
clc
clc
%-- 10:26 PM 12/14/03 --%
%-- 11:04 AM 12/15/03 --%

%-- 2:45 PM 12/15/03 --%

%-- 3:26 PM 12/15/03 --%
x=[2 3 5; 4 2 1]
y=[1 3 5; 2 2 1];
z=x;
y
```

Command History Current Directory

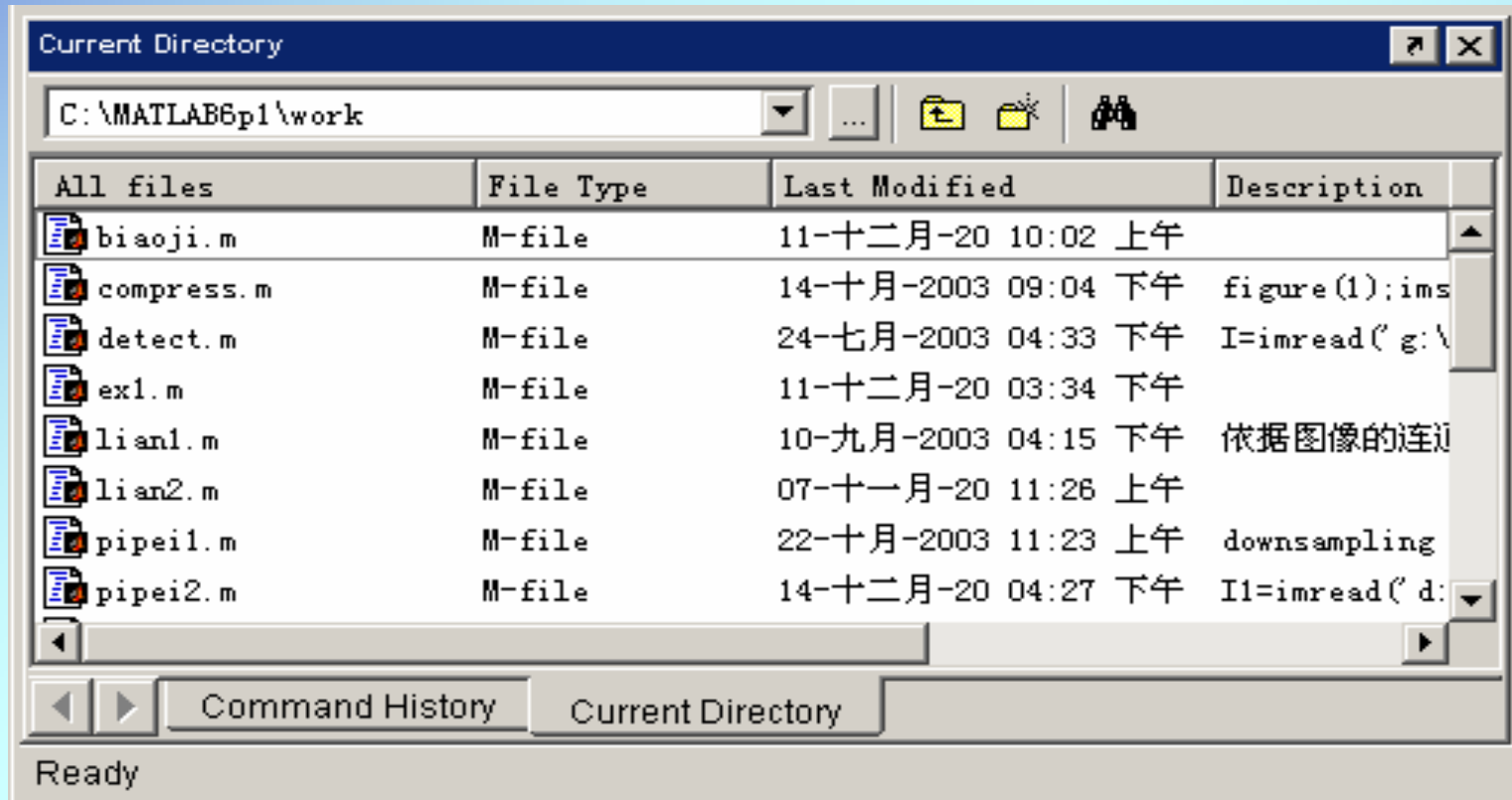
Ready

5

M

M

6



M

•

File

New M -

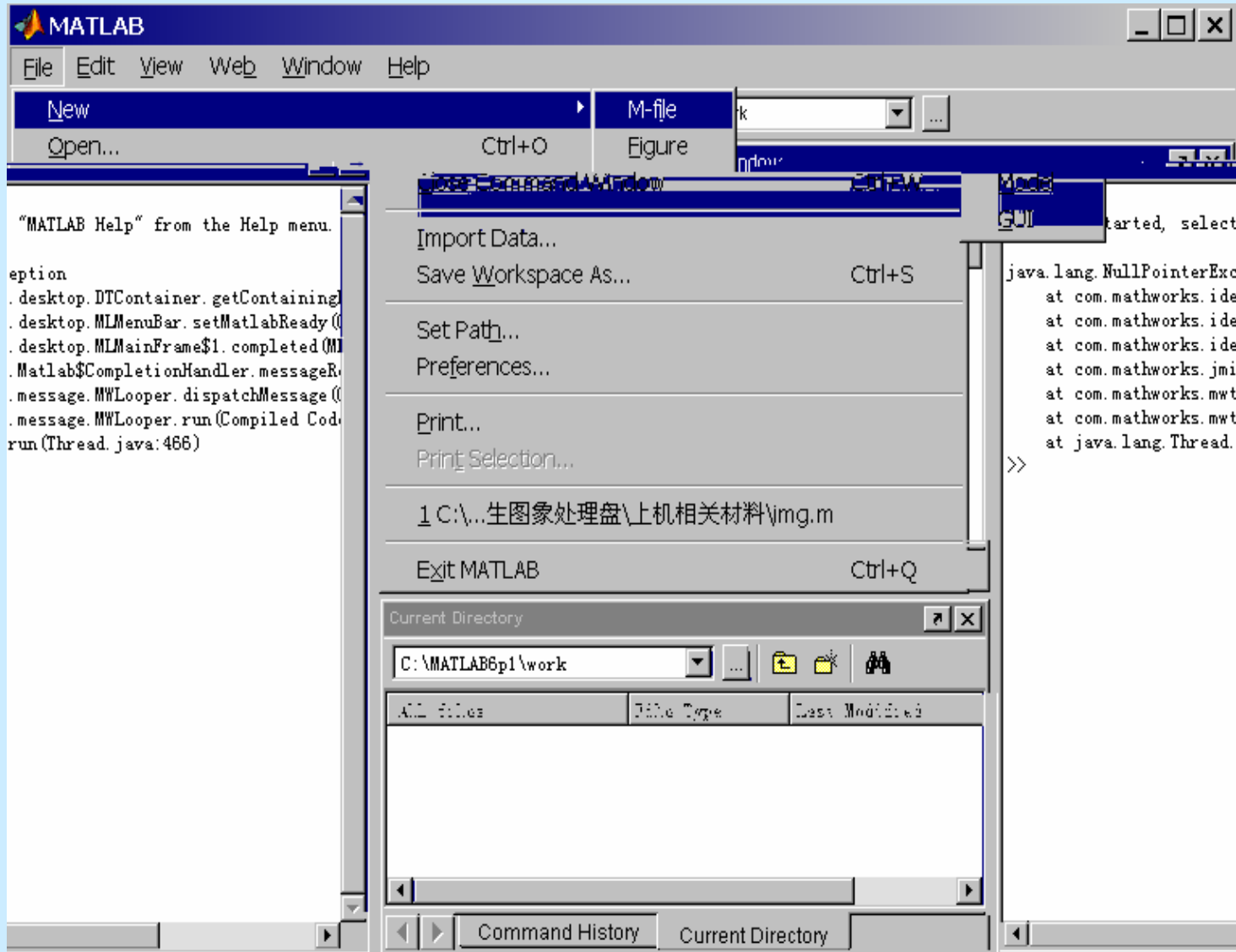
File

M

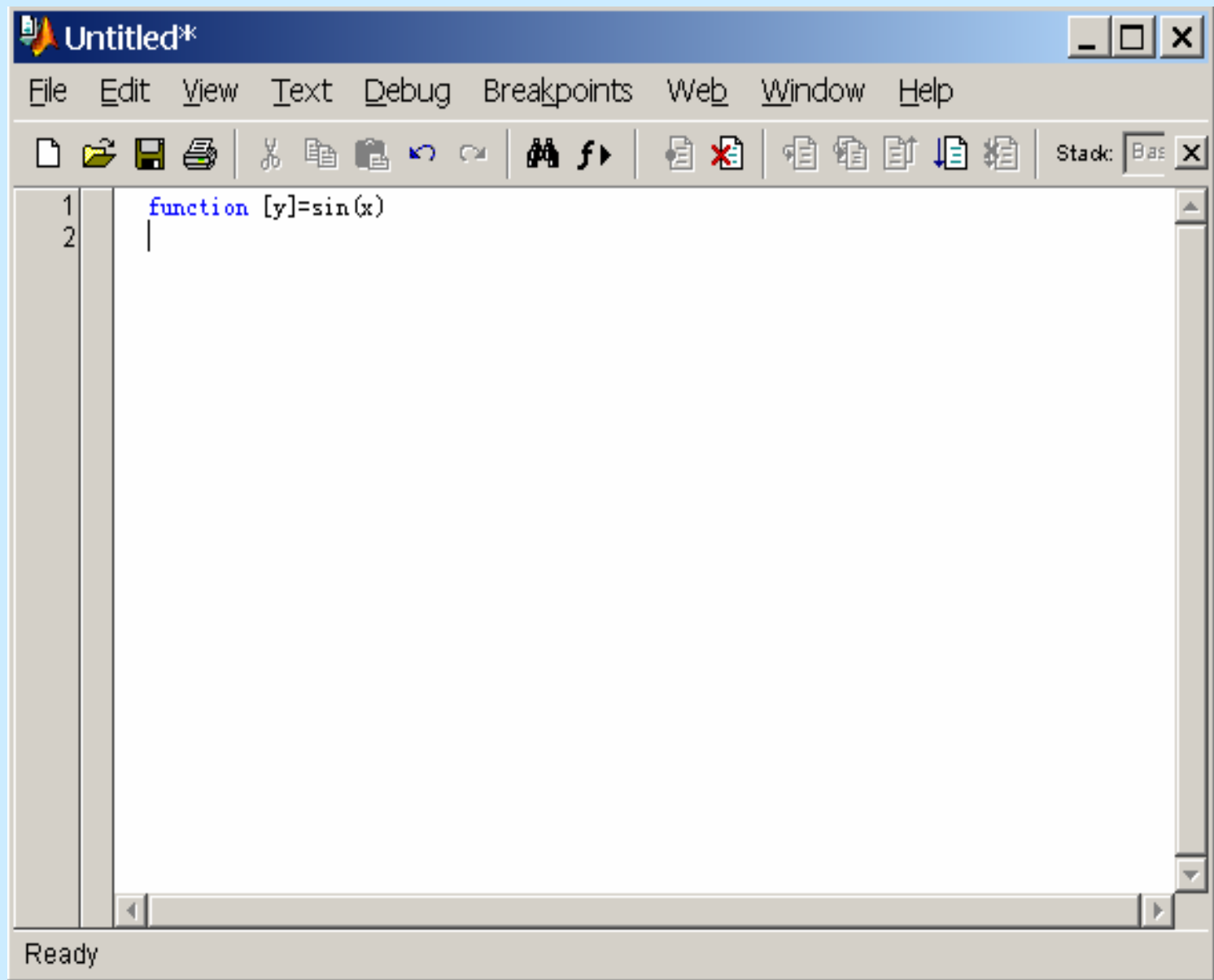
M

*.m

M



M



M

Matlab

2

M

•

•

H1

•

•

•

- `mean.m`

- function `y = mean(x)`

- MEAN Average or mean value H1

- for vectors `MEAN(X)` is the mean value of `x`

.....

.....

- `[m,n] = size(x);`

- `if m == 1`

- `m = n`

- `end`

- `y = sum(x)/m`

-

-

-

```
function Printresults(x)
```

```
function [] rintfresults(x)
```

-

```
function [x,y,z] sphere(theta,phi,pho)
```

-

```
globe
```

•

•

•

•

•





if else if end
if

if 1

elseif

end

else

end



for

for

for

end

for

for

end

end

-

while

-

While

end

-

r=1;

while r<10

r=r+1;

if r>7

break ;

end

end



switch

if

switch

case

case

case

otherwise

end



var={-1,0,1}

switch var

case -1

disp("var is -1")

case 0

disp("var is 0")

case 1

disp("var is 1")

end





Matlab

1

- imread imshow

```
I imread('d:\image\x.bmp')  
I imread 'd:\image\x','bmp'
```

```
figure(1)  
imshow I I
```

2

- fopen fread

- ```
fid fopen 'd:\img\lena.img','r' ;%fid
data fread fid [256 256] 'uint8' ;
figure(1);
images(data,[255]); %
colormap(gray)
axis image
```

- ```
data  
data=uint8(data);
```

3

- subplot(m,n)

...

- figure(1)

```
% 2 2
```

```
subplot(2,2,1);
```

```
.....
```

```
%
```

```
imshow(I1)
```

```
.....
```

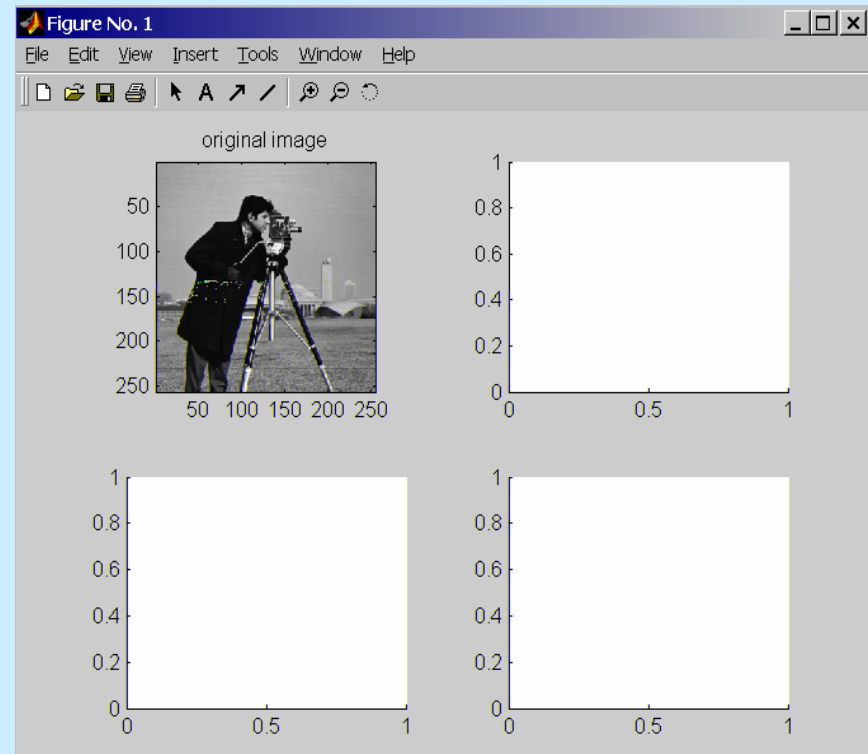
```
% 2 2
```

```
subplot(2,2,4)
```

```
.....
```

```
%
```

```
imshow(I4)
```



matlab

- Size
- Zeros
- Fft2(), ifft2()
- Imhist()
- Histeq()
- Imrotate()
- Imnoise()
- Edge()
- Title()
- Xlabel(), Ylabel()

- Size

```
I = imread('d:\img\radar','bmp');%
```

```
[x,y] = size(I) %
```

x,y

$X \times Y$

- Zeros

```
I=zeros(100,100) %I 100× 100
```

```
imshow(I) % 100× 100
```

```
I1=zeros(128,128) % 128× 128
```

```
for I=38:1:90
```

```
    for j=58:1:70
```

```
        I1(i,j)=255 % I1(i,j)=1
```

```
    end
```

```
end
```

```
imshow(I1) %I1
```

- `fft2()`, `ifft2()`
`fft2()`

- `Imrotate()`

```

J = imrotate(I,angle,method)
I          J
angle
method     'nearest'  'bilinear'  'bicubic'
I=imread('ic.tif');%          ic.tif
J  imrotate(I,45,'bilinear');%          45
imshow(I) %          I
figure,imshow(J) %          J

```

- `Imnoise()`

```

J=imnoise(I ,          ,
I
          0--1
J
J=imnoise(I, 'salt&pepper' 0.02) %

```


- Edge()

```
J = edge(I,'r','b'); % J = I
```

```
J = edge(I,'Roberts') % I
imshow(J); %
```

- Title()

```
title(' ');
% “ ”
```

- Xlabel(), Ylabel()

```

x y
Xlabel(' t'); % x t'
Ylabel(' f(t)'); % y f(t)
```

- Matlab
Matlab Help Help