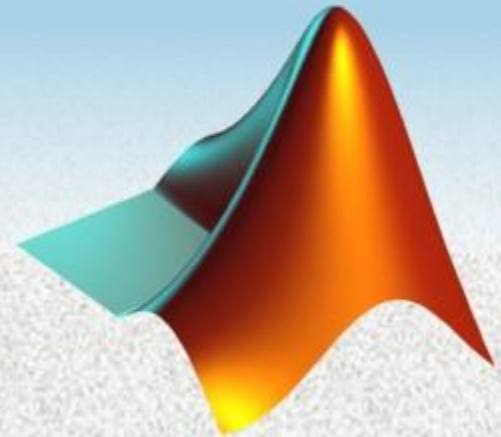




**UNIVERSIDAD
NACIONAL DE
INGENIERÍA**

MATLAB

R2016a



Maria Pimentel Herrera
uni.kernel@gmail.com

HOME PLOTS APPS

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FILE VARIABLE CODE SIMULINK ENVIRONMENT RESOURCES

C:\Program Files\MATLAB\R2016a\bin

Current Folder

Name

- m3iregistry
- registry
- util
- win64
- deploytool.bat
- lcdata.xml
- lcdata.xsd
- lcdata_utf8.xml
- matlab.exe
- mbuild.bat
- mcc.bat
- mex.bat
- mex.pl
- mexext.bat
- mexsetup.pm
- mexutils.pm
- mw_mpiexec.bat
- worker.bat

Details

Command Window

New to MATLAB? See resources for [Getting Started](#).

New MATLAB Graphics System

MATLAB R2014b introduces a new MATLAB graphics system, with new default colors, fonts, and styles, and many new features. Some existing code may need to be revised to work in this version of MATLAB.

[Learn more](#)

fx >> |

Workspace

Name	Value
------	-------

Muestra versión de Matlab

>> version

```
>> version  
  
ans =  
  
9.0.0.341360 (R2016a)
```

Limpia área de comando y ubica cursor en la parte superior de la ventana

>> clc

Muestra versión de Matlab y versión de cada Toolbox

>> ver

```
>> ver
-----
MATLAB Version: 9.0.0.341360 (R2016a)
MATLAB License Number: 123456
Operating System: Microsoft Windows 10 Pro Version 10.0 (Build 10240)
Java Version: Java 1.7.0_60-b19 with Oracle Corporation Java HotSpot(TM) 64-Bit Server VM mixed mode
-----
MATLAB                               Version 9.0           (R2016a)
Simulink                             Version 8.7           (R2016a)
Aerospace Blockset                   Version 3.17          (R2016a)
Aerospace Toolbox                    Version 2.17          (R2016a)
Antenna Toolbox                      Version 2.0           (R2016a)
Audio System Toolbox                 Version 1.0           (R2016a)
Bioinformatics Toolbox               Version 4.6           (R2016a)
Communications System Toolbox        Version 6.2           (R2016a)
Computer Vision System Toolbox       Version 7.1           (R2016a)
Control System Toolbox               Version 10.0          (R2016a)
Curve Fitting Toolbox                Version 3.5.3         (R2016a)
DO Qualification Kit                 Version 3.1           (R2016a)
DSP System Toolbox                   Version 9.2           (R2016a)
Data Acquisition Toolbox              Version 3.9           (R2016a)
Database Toolbox                     Version 6.1           (R2016a)
Datafeed Toolbox                     Version 5.3           (R2016a)
Econometrics Toolbox                 Version 3.4           (R2016a)
Embedded Coder                       Version 6.10          (R2016a)
Filter Design HDL Coder               Version 3.0           (R2016a)
Financial Instruments Toolbox         Version 2.3           (R2016a)
```

Operaciones

>> 7+9.3

ans =

16.3000

>> 12-4.89

ans =

7.1100

>> 15*7.89

ans =

118.3500

>> 28/12.4

ans =

2.2581

Toda operación
que se realice
se guarda en la
variable ans.

Definiendo variable

```
>> a=15+7.56*2.3-17.5/3
```

```
a =
```

```
26.5547
```

```
>> b=[1 2 3]
```

```
b =
```

```
1    2    3
```

```
>> c=[3 5; 7 9]
```

```
c =
```

```
3    5
```

```
7    9
```

```
>> d=[1 2 3; 4 5 6]
```

```
d =
```

```
1    2    3
```

```
4    5    6
```

```
>> e=[9,8,7,6,5,-1]
```

```
e =
```

```
9 8 7 6 5 -1
```

```
>> f=[5;7;11;-3]
```

```
f =
```

```
5
```

```
7
```

```
11
```

```
-3
```

```
>> A=[4 5 8;
```

```
7 8 9;
```

```
-1 0 i;
```

```
2 -i 6
```

```
]
```

En Matlab las
variables no son
iguales las
mayúsculas y
minúsculas.

$a \neq A$

```
A =
```

4.0000 + 0.0000i	5.0000 + 0.0000i	8.0000 + 0.0000i
7.0000 + 0.0000i	8.0000 + 0.0000i	9.0000 + 0.0000i
-1.0000 + 0.0000i	0.0000 + 0.0000i	0.0000 + 1.0000i
2.0000 + 0.0000i	0.0000 - 1.0000i	6.0000 + 0.0000i

Variables definidas

Listar las variables
definidas

>> who

```
Your variables are:
```

```
A  a  b  c  d  e  f
```

Listar variables y
dimensiones

>> whos

Name	Size	Bytes	Class	Attributes
A	4x3	192	double	complex
a	1x1	8	double	
b	1x3	24	double	
c	2x2	32	double	
d	2x3	48	double	
e	1x6	48	double	
f	4x1	32	double	

Eliminar variable

>> clear d % elimina la variable d

>> clear all % elimina todas las variables definidas

Limpiar ventana de comando

>> clc % limpia y ubica cursor en la parte superior

Guardar variables

Guardando en la carpeta MATLAB del PC

```
>> save C:\Users\Master\Documents\MATLAB\s0001.mat
```

Guardando en la carpeta Matlab del disco externo

```
>> save I:\Matlab\s0001.mat
```

Guardando en
un disco externo

Guarda secuencia de comandos

```
>> diary C:\Users\Master\Desktop\ejercicios\pasos01.txt
```

```
>> ver
```

```
...
```

```
>> version
```

```
...
```

```
>> help format
```

```
....
```

```
>> diary off    % finalize el archive creado pasos01.txt
```

Cargar variables

```
>> load
```

Consultar ayuda de un comando

```
>> help clear
```

```
>> help format
```

sd001.m

```
clear all; clc;
A=magic(3);
B=[1 -2 3; 5 4 8; 0 3 17];
disp('suma de matrices');
Suma=A+B
disp('matriz simetrica');
(A+A')/2
disp('matriz antisimetrica');
format rat
(B-B')/2
% se almacena en la variable ans la última operación.
format
```


sd002.m

```
clear all;  
clc;  
A=magic(3);  
B=[1 -2 3; 5 4 8; 0 3 17];  
disp('producto de matrices');  
M=A*B  
disp('suma de la diagonal principal');  
disp(trace(M));  
disp('imprimir como un vector horizontal');  
disp(M(:)')
```

sd003.m

```
clear all; clc;  
% A=magic(3)  
A=[1 -2 3; 5 4 8; 0 3 17];  
traza=trace(A)  
disp('matriz A de izquierda a derecha');  
disp(fliplr(A));  
contradiagonal=trace(fliplr(A))  
disp('matriz A de arriba hacia abajo');  
disp(flipud(A));  
sumaColumna=sum(A,1)  
sumaFila=sum(A,2)  
rango=rank(A)
```

sd004.m

```
clear all
clc
disp('matriz de ceros');
zeros(2) % zeros(2,2)
zeros(3,2) % 3 filas, 2 columnas
disp('matriz de unos');
ones(3)
ones(2,4)
disp('matriz identidad');
eye(4)
eye(3,4)
```

sd005.m

```
clear all; clc; A=magic(4)
% cambiando valor: de la posición 8 al valor 28
A(8)=28;
% mostrar los valores de la fila 4
A(4,:)
% mostrar valores de la columna 2
A(:,2)
% columna 4 cambiar por valor cero
A(:,4)=zeros(4,1); % A(:,4)=0
% fila 3 cambiar por los valores de un vector
A(3,:)=[-1 -2 -3 -4];
A
```

sd006.m

```
clear all
```

```
clc
```

```
A=magic(3)
```

```
v=[-1 0 1];
```

```
% aumentando una fila
```

```
[A;v]
```

```
% aumentando una columna
```

```
[A v']
```