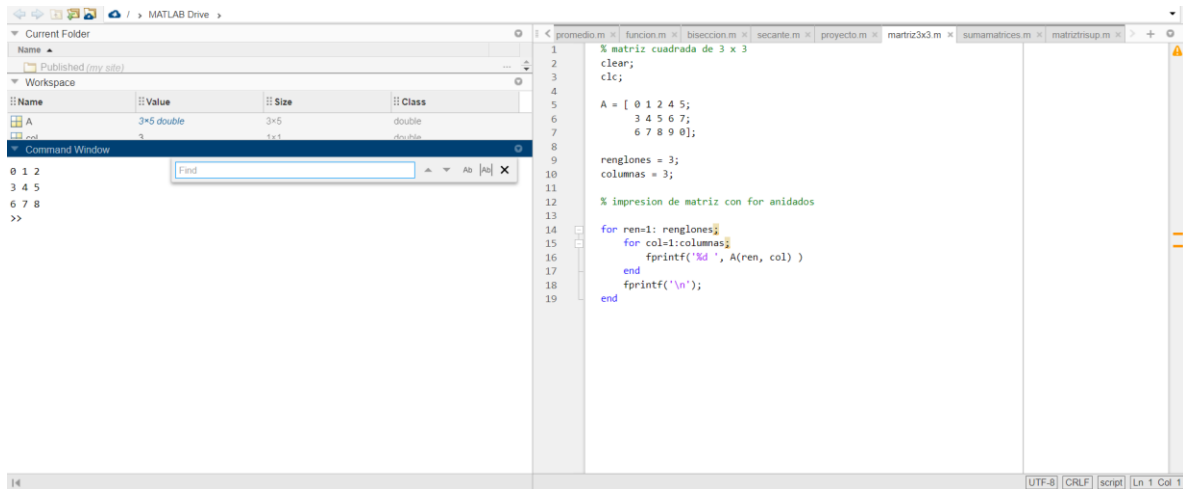


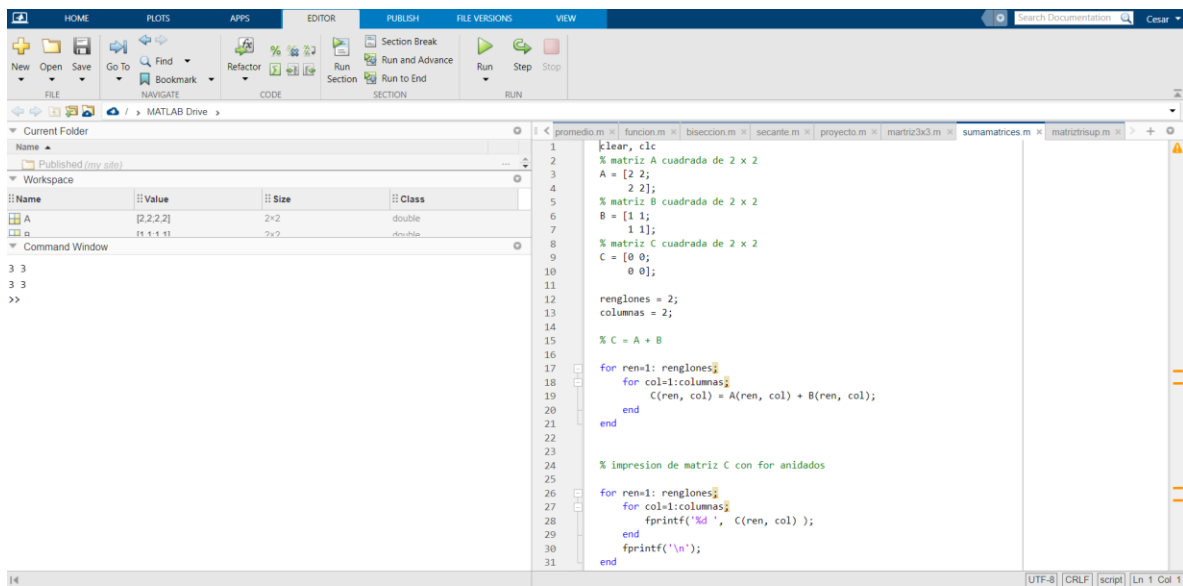
## Definir matriz 3x3



The screenshot shows the MATLAB Editor with a script named 'matriz3x3.m'. The workspace contains a variable 'A' of size 3x5, class 'double'. The Command Window shows the output of the script: a 3x5 matrix of zeros.

```
1 % matriz cuadrada de 3 x 3
2 clear;
3 clc;
4
5 A = [ 0 1 2 4 5;
6       3 4 5 6 7;
7       6 7 8 9 0];
8
9 renglones = 3;
10 columnas = 3;
11
12 % impresion de matriz con for anidados
13
14 for ren=1: renglones
15     for col=1:columnas
16         fprintf('%d ', A(ren, col) )
17     end
18     fprintf('\n');
19 end
```

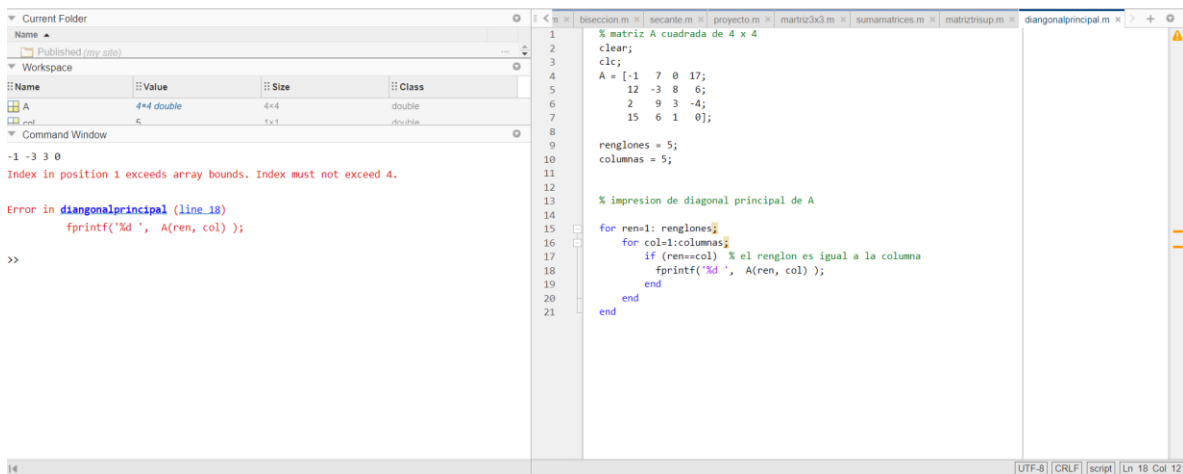
## Suma Matrices



The screenshot shows the MATLAB Editor with a script named 'sumamatrices.m'. The workspace contains variables 'A' (2x2), 'B' (2x2), and 'C' (2x2), all of class 'double'. The Command Window shows the output of the script: a 2x2 matrix of zeros.

```
1 clear, clc
2 % matriz A cuadrada de 2 x 2
3 A = [2 2;
4       2 2];
5 % matriz B cuadrada de 2 x 2
6 B = [1 1;
7       1 1];
8 % matriz C cuadrada de 2 x 2
9 C = [0 0;
10      0 0];
11
12 renglones = 2;
13 columnas = 2;
14
15 % C = A + B
16
17 for ren=1: renglones
18     for col=1:columnas
19         C(ren, col) = A(ren, col) + B(ren, col);
20     end
21 end
22
23 % impresion de matriz C con for anidados
24
25 for ren=1: renglones
26     for col=1:columnas
27         fprintf('%d ', C(ren, col) );
28     end
29     fprintf('\n');
30 end
31 end
```

## Diagonal principal



The screenshot shows the MATLAB Editor with a script named 'diagonalprincipal.m'. The workspace contains a variable 'A' of size 4x4, class 'double'. The Command Window shows an error message: 'Index in position 1 exceeds array bounds. Index must not exceed 4.' The error occurs in line 18 of the script, where the script attempts to print the main diagonal of matrix A.

```
1 % matriz A cuadrada de 4 x 4
2 clear;
3 clc;
4
5 A = [-1 7 0 17;
6      12 -3 8 6;
7      2 9 3 -4;
8      15 6 1 0];
9
10 renglones = 5;
11 columnas = 5;
12
13 % impresion de diagonal principal de A
14
15 for ren=1: renglones
16     for col=1:columnas
17         if (ren==col) % el renglon es igual a la columna
18             fprintf('%d ', A(ren, col) );
19         end
20     end
21 end
```

## Traza

The MATLAB interface shows a script named 'caltraza.m' in the Editor. The script calculates the trace of a 3x3 matrix A. The Workspace window shows the following variables:

Name	Value	Size	Class
A	[5,7,0;-1,5,3;0,2,5]	3x3	double
col	3	1x1	double
columnas	3	1x1	double
ren	3	1x1	double
renglones	3	1x1	double
traza	15	1x1	double

The Command Window shows the output: `traza = 15`.

```
1 clear;
2 clc;
3
4 % matriz A cuadrada de 3 x 3
5 A = [ 5 7 0;
6      -1 5 3;
7        0 2 5];
8
9 renglones = 3;
10 columnas = 3;
11
12 traza = 0;
13
14 % calculo de la traza de A
15 for ren=1:renglones
16     for col=1:columnas
17         if (ren==col) % el renglon es igual a la columna
18             traza = traza + A(ren, col);
19         end
20     end
21 end
22
23 fprintf('traza = %d', traza)
```

## Matriz triangular Superior

The MATLAB interface shows a script named 'matriztrisup.m' in the Editor. The script converts a 5x5 matrix A to an upper triangular matrix. The Workspace window shows the following variables:

Name	Value	Size	Class
A	5x5 double	5x5	double
col	5	1x1	double
columnas	5	1x1	double
ren	5	1x1	double
renglones	5	1x1	double

The Command Window shows the output of the matrix A:

```
5 7 0 8 9
0 4 3 2 3
0 0 3 2 3
0 0 0 2 3
0 0 0 0 5
```

```
1 clear, clc
2
3 % matriz A cuadrada de 3 x 3
4 A = [ 5 7 0 8 9;
5       1 4 3 2 3;
6       2 4 3 2 3;
7       3 4 3 2 3;
8       0 2 5 4 5];
9
10 renglones = 5;
11 columnas = 5;
12
13 % convertir A a matriz triangular superior
14 %
15 %
16 for ren=1:renglones
17     for col=1:columnas
18         if (ren<col)
19             A(ren, col) = 0;
20         end
21     end
22 end
23
24 % impresion de A
25 for ren=1:renglones
26     for col=1:columnas
27         fprintf('%d ', A(ren,col));
28     end
29     fprintf('\n');
30 end
```

## Matriz triangular Inferior

The MATLAB interface shows a script named 'MatTriInf.m' in the Editor. The script converts a 5x5 matrix A to a lower triangular matrix. The Workspace window shows the following variables:

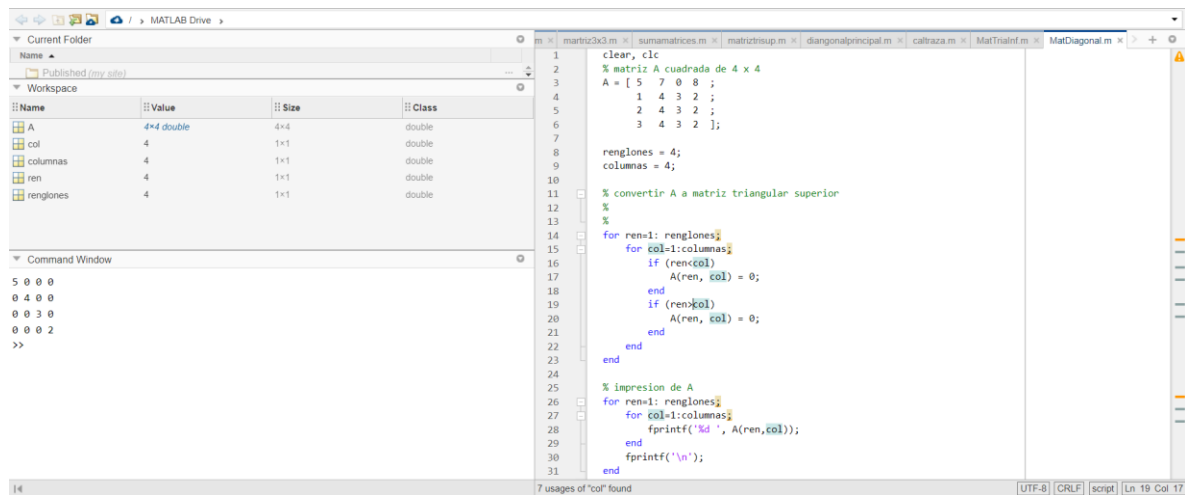
Name	Value	Size	Class
A	5x5 double	5x5	double
col	5	1x1	double
columnas	5	1x1	double
ren	5	1x1	double
renglones	5	1x1	double

The Command Window shows the output of the matrix A:

```
5 0 0 0 0
1 4 0 0 0
2 4 3 0 0
3 4 3 2 0
0 2 5 4 5
```

```
1 clear, clc
2
3 % matriz A cuadrada de 3 x 3
4 A = [ 5 7 0 8 9;
5       1 4 3 2 3;
6       2 4 3 2 3;
7       3 4 3 2 3;
8       0 2 5 4 5];
9
10 renglones = 5;
11 columnas = 5;
12
13 % convertir A a matriz triangular superior
14 %
15 %
16 for ren=1:renglones
17     for col=1:columnas
18         if (ren>col)
19             A(ren, col) = 0;
20         end
21     end
22 end
23
24 % impresion de A
25 for ren=1:renglones
26     for col=1:columnas
27         fprintf('%d ', A(ren,col));
28     end
29     fprintf('\n');
30 end
```

## Matriz Diagonal



Current Folder: / > MATLAB Drive >

Workspace:

Name	Value	Size	Class
A	4x4 double	4x4	double
col	4	1x1	double
columnas	4	1x1	double
ren	4	1x1	double
renglones	4	1x1	double

Command Window:

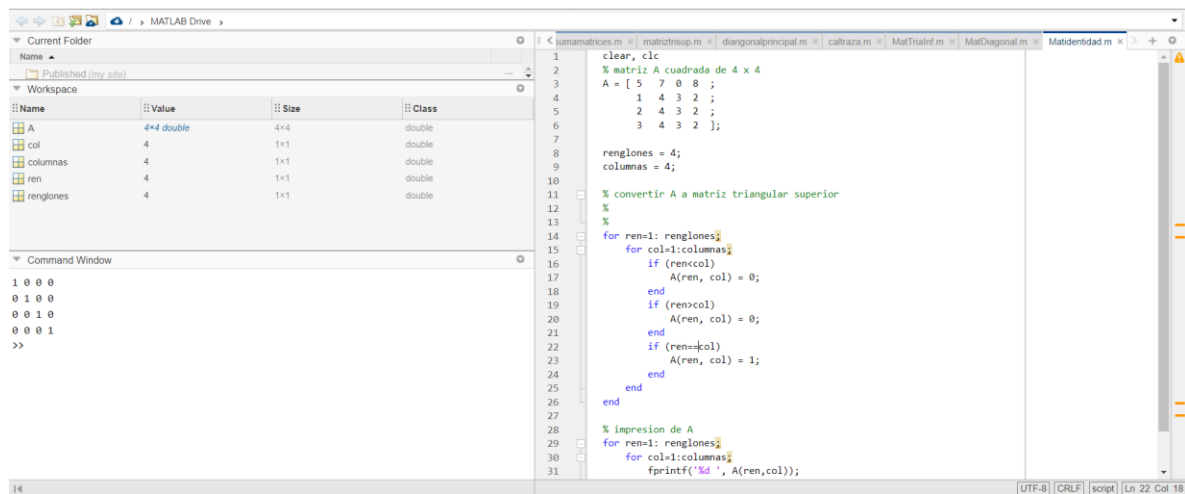
```
5 0 0 0
0 4 0 0
0 0 3 0
0 0 0 2
>>
```

Script: MatrizDiagonal.m

```
1 clear, clc
2 % matriz A cuadrada de 4 x 4
3 A = [ 5 7 0 8 ;
4       1 4 3 2 ;
5       2 4 3 2 ;
6       3 4 3 2 ];
7
8 renglones = 4;
9 columnas = 4;
10
11 % convertir A a matriz triangular superior
12 %
13 %
14 for ren=1:renglones
15     for col=1:columnas
16         if (ren<col)
17             A(ren, col) = 0;
18         end
19         if (ren==col)
20             A(ren, col) = 0;
21         end
22     end
23 end
24
25 % impresion de A
26 for ren=1:renglones
27     for col=1:columnas
28         fprintf('%d ', A(ren,col));
29     end
30     fprintf('\n');
31 end
```

7 usages of 'col' found

## Matriz Identidad



Current Folder: / > MATLAB Drive >

Workspace:

Name	Value	Size	Class
A	4x4 double	4x4	double
col	4	1x1	double
columnas	4	1x1	double
ren	4	1x1	double
renglones	4	1x1	double

Command Window:

```
1 0 0 0
0 1 0 0
0 0 1 0
0 0 0 1
>>
```

Script: MatIdentidad.m

```
1 clear, clc
2 % matriz A cuadrada de 4 x 4
3 A = [ 5 7 0 8 ;
4       1 4 3 2 ;
5       2 4 3 2 ;
6       3 4 3 2 ];
7
8 renglones = 4;
9 columnas = 4;
10
11 % convertir A a matriz triangular superior
12 %
13 %
14 for ren=1:renglones
15     for col=1:columnas
16         if (ren<col)
17             A(ren, col) = 0;
18         end
19         if (ren>col)
20             A(ren, col) = 0;
21         end
22         if (ren==col)
23             A(ren, col) = 1;
24         end
25     end
26 end
27
28 % impresion de A
29 for ren=1:renglones
30     for col=1:columnas
31         fprintf('%d ', A(ren,col));
```