

Class_1.m

```
%Lab
%Title: Introduction to MATLAB
% 1. Matrix operation

rv = [1, 2, 3, 4]    % row vector
srv = size(rv) %returns the two-element row vector
lrv = length(rv) % Maximum(size(rv))

A = [1 2 3; 3 4 5; 6 7 8] ; %semicolon is used to suppress output

A = [1 2 3; 3 4 5; 6 7 8] ; D = [0 0 1; 0 1 0; 1 0 0];
rA = rank(A) %rank of matrix
la = tril(A) %lower triangular matrix
uA = triu(A) %upper triangular matrix
A = [1 2;3 4]
B = [4 5;8 12]

C = A + B    %Matrix Addition
D1 = A * B    %Matrix Multiplication (ElementWise)
D2 = A.*B    %Matrix Multiplication (Component Wise)
A = [4 5;8 12]
B = [4 5;8 12]
E = Inv(A) %Inverse of Matrix
```

Output Window:

```
class_1
```

```
rv =
```

```
    1    2    3    4    5
```

```
cv =
```

```
    1
    2
    3
    4
    5
```

```
srv =
```

```
    1    5
```

lrv =

5

rA =

2

la =

1	0	0
3	4	0
6	7	8

uA =

1	2	3
0	4	5
0	0	8

B = [4 5;8 12]

B =

4	5
8	12

A = [4 5;8 12]

A =

4	5
8	12

C = A + B

C =

8	10
16	24

D1 = A*B

D1 =

56	80
128	184

```
D2 = A.*B
```

```
D2 =
```

```
    16    25  
    64   144
```

```
E =
```

```
    1.5000   -0.6250  
   -1.0000    0.5000
```

Class_2.m

```
A = [1 2 3 4; 5 6 7 8; 9 10 11 12; 13 14 15 16]
```

```
size(A)
```

```
H = A.^3 %operation on each element
```

```
A(:,3) % view column
```

```
A(3,:) % view row
```

```
(:,3) = [] % remove column
```

```
(3,:) = [] % remove row
```

```
sm1 = A(2:3, 2:3) %intersection of row2 and 3 with column2 and 3
```

```
clc
```

```
clear
```

```
%Solving System of linear equation
```

```
% 4x+5y=7, 7x+8y=21
```

```
A = [4 5; 7 8];
```

```
B = [7 ; 21];
```

```
x = inv(A)*B % Solution X = (A^-1)*B
```

A =

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

ans =

4	4
---	---

H =

1	8	27	64
125	216	343	512
729	1000	1331	1728
2197	2744	3375	4096

ans =

3
7
11
15

ans =

9	10	12
---	----	----

sm1 =

6	8
10	12

x =

16.3333
-11.6667