

Lab Assignment 01

Exercise 1

- Start MATLAB.
- Explain what each of the following commands does.
- Enter the following commands and explain what each do (use the help function when necessary).

- | | |
|---|---|
| 1) X1 = [1 2 3], | 32) A(2,3) |
| 2) X2= [-7;8; -9; 10] | 33) A(5) |
| 3) X3= - 2 : - 0.5 : 3 | 34) A(1,:) |
| 4) X4=linspace(1.1 , 1.9 , 9) | 35) A(:,2) |
| | 36) A(:) |
| 5) n=5 ; m=3 | 37) A(:)=100 |
| 6) X5=ones(1,n) | |
| 7) X6=zeros(m,1) | 38) A = [1 2 3 ;4 5 6 ;7 8 9 ;11 12 13] |
| 8) X7=4*ones(m,n) | 39) A(A>5) |
| | 40) A(2,end) |
| 9) length(X1) | 41) A(end) |
| 10) X2(3) | |
| 11) X1(5) | 42) A(3 , :)=[] |
| | 43) A=[] |
| 12) prod(X1) , | |
| 13) prod(X2,1) | 44) R=ceil(RR*100) |
| 14) sum(X1), sum(X1,2) | 45) Z=fix(RR*10) |
| 15) abs(X2) | 46) W=floor(RR) |
| | |
| 16) A = [1 2 3 ;4 5 6 ;7 8 9 ;11 12 13] | 47) A=[1 2 3 ;4 5 6 ;7 8 9 ;11 12 13] |
| 17) D=magic(n) | 48) prod(A) |
| 18) R=randn(1,n) | 49) prod(A,1) |
| 19) RR= rand(n,m) | 50) prod(A,2) |
| 20) ZZ=randi([-2,4],4,5) | 51) sum(A) |
| | 52) mean(A), mean(A,1), mean(A,2) |
| 21) E=repmat (100, 4, 3) | 53) max(A) |
| 22) F=repmat(X1,3,2) | 54) [val, pos]=min(A) |
| 23) FF=repmat(X2,2,3) | |
| 24) G=A([1 2 1 2] ,[1 2 3 1 2 3]) | <u>Supplementary</u> |
| 25) H= reshape(A,3,4) | eye(n) |
| 26) I= transpose(A) | diag(A) |
| 27) II= A' | diag(A,1) |
| 28) J=[A, X2] | diag(A,-2) |
| 29) K=[A ;X1] | tril(A) |
| | triu(A) |
| 30) length(A) | tril(A,2) |
| 31) size(A) | triu (A,-1) |
| [lig,col]=size(A) | det(D) |
| | inv(D) |

Exercise 2 : Open the MATLAB code editor , Create and execute the following m.files

```
clc
clear

lig= input('enter the number of rows')
col= input('enter the number of columns')
i=1
while (i<=lig)
    j=1
    while (j<=col)
        A(i,j) = (i-1)*col +j;
        j=j+1
    end
    i=i+1
end
fprintf('matrix A of  %f rows et %f\n',lig, col)
disp(A)
```

creMATRICE.m

```
function [A]=my_function(lig,col)

i=1
while (i<=lig)
    j=1

    while (j<=col)
        A(i,j) = (i-1)*col +j;
        j=j+1
    end

    i=i+1
end

end
```

choix.m

```
clear
clc

ch= input('enter your\nchoice : 1 or 2')

switch ch
    case 1
        Boucle

    case 2
        creMATRICE(3,4)

    otherwise
        'Only values 1\nand 2 are accepted'

end
```

Exercise 3 : Create and execute MATLAB functions to :

- 1- Determine the maximum of three entered values
- 2- Read a row vector V and a value X, and produce a new vector where X is inserted between each pair of elements in V

V1	X	V2	X	V3	X	
----	---	----	---	----	---	------