Introduction

Mathlab is a Software package for high performance mathematical Computation, Visualization and programming envirorment with hundreds of bulit-in functions for technical Computing, graphics and animation.

Basic Commands_

Command	Purpose
clc	clears command window
clear	Removes variable from memory
exist	checks for existence of file
global	Declares variable to be golobal
help	Searches help entries for a key.
look for	Searche for a help topic
quit	Stops MATLAB
who	Lists Current Variable
whos	Lists Current (logic displays)

Command to Create 1-D Array :-

a=[1,2,3,4,5]

b= [1,2,3 4 5]

C = [1:5]

Command to create 1-D Array using Step-size :-

d= Start : Step : end

Ex : d = 1 : 02 : 10

e = 1 : 0.5 : 5

f = 5 : -1 : 1

Command to Create 2-D Array :-

1.) a = [1,2,3; 4,5,6]

2.) Magic command → Magic Command is used to Create a matrix of Size a x a with random numbers

Ex :- magic(2)

output - $\begin{bmatrix} 1 & 5 \\ 7 & 10 \end{bmatrix}$

Zeros Command :- Zeros command is used to create a matrix of 0's.

Ex :- Zeros(2)

output - $\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$

Ones Command :- ones Command is used to create a matrix with 1's

Ex:- ones(2)

output - $\begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$

Command to multiply two matrixs :-

C = a*b where a and b are two matrices of Size nxp respectively

Then, we get a matrix of size mxp

Ex:- a = Ones(2)
b = ones(2)
C = a*b

output - $\begin{bmatrix} 2 & 2 \\ 2 & 2 \end{bmatrix}$

Scalar Operation :- It is used to multiply indexwise

Ex :- a = ones(2)
b = ones(2)
C = a.*b

output - $\begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$

Read the Image

Syntax :-

A = imread (file-name)

It needs the image from the file specified by file name, inferring the format of the file from its Contents.

Ex – ~~If~~ i1 = imread('Cameraman.Tif');

Intoo With hold on, hold off and Subplot

Hold → Retain current plot when adding new plots.

Hold on → Hold on retain plots in the current axes, So that new plots added to the axes clear exici do not delete exisiting plots.

Hold off → Hold off sets the held state to off See that new plot allow to the axes clear existing plots and reset all axes properties.

```
X = linspace (-pi, pi);
Y1 = Sin(n);
plot (x, y1)
hold on
Y2 = Cos(X);
plot (X, Y2)·
hold off
```

Subplot function → Subploat (m,n,p) divides the current figures into an m by n grid and creates axes in the position specified by p.

```
i1 = imread ('cameraman.tif');
Subplot (2,2,1)
imshow (i1);
imshow (i2);
Subplot ( 2,2,2)
imshow (i1);
```

Read the image and perform the TCC and FCC :-

FCC → False Colour Composite
Any other Combination of Colours.

TCC → True Colour Composite
Read band-Red, Green band-Green, Blueband-Blue.

Cat Command → It is used to concentrate two or more Commands.

```
i1 = imread C'C:\users\C1235\Pictures\glau.jpeg');
b1 = i1 C:,:,1);
b2 = i1 C:,:,2);
b3 = i1 C:,:,3);
Subplot C2,2,1);
imshow(i1);
Subplot(2,2,2);
imshow ( b1);
Subplot ( 2,2,3);
imshow (b2);
Subplot (2,2,4);
imshow (b3);
tcc = Cat C 3,b1,b2,b3);
imshow (tcc);
FCC = Cat ( 3, b3,b1,b2 );
imshow ( FCC);
```