MAT LAB (matrix laboratory)

Important Keyboard Shortcut keys:  
  
ctrl+R 🡪 comments the data   
ctrl +shift+ R 🡪 uncomments the data .

Class 1 : (12 jan 2024)

Introduction to matlab :

% is used for comments ; what ever written after the ‘%’ is considered as a comment ;   
  
Operators in MatLab

^ 🡪 it is used for the Power   
example : 2^3 🡪 two power of three , that is 2\*2\*2 =8   
  
+ 🡪 it is used for the Addition   
- 🡪 it is used for the subtraction  
\* 🡪 it is used for the multiplication

/ 🡪 it is used for forward division   
Example 4/2 here 4 is divided by 2 so the answer is 2 ;

\ 🡪 it is used for Backed division  
Example 2 : 2\6 here the denominator 6 is divided by 2 so the answer is 3;  
  
  
  
Order of Precedence in matlab (left to right )  
  
1.parenthesis   
2. Exponentiation

3.multiplication and Division with equal precedence

4.Addition and subtraction

Commands in MATLAB

* clc 🡪 it will clear the console
* clear 🡪 it will clear all the saved data
* clear x y 🡪 it will clear the x and y data
* exist(‘abc’) 🡪 with this command matlab will check if there is any file with abc or any variable named as abc . if exist it return 1 or it returns 0
* quit 🡪 this command is used to Exit from the MATLAB software.

who 🡪 this command will Lists all the variables in the memory

whos 🡪 this command gives all the variables list with size and indicate if they are imaginary .  
  
: 🡪 colon is used to generate an Array in Matlab

Example : 0:1:9  
  
it will give 0,1,2,3,4,5,6,7,8,9  
starts from 0 to 9 with difference 1 on each element

; 🡪 semi colon is used for the new row and supressing the screen printing ;

… 🡪 it is used for the continuation of the line (Ellipsis)

* “eps” is used to get the accuracy of the floating point percision .
* “Inf” Infinity
* “ Pi” is 3.147

Numerical Display Formats in MatLab   
  
format short   
format long

format short e   
format long e

format blank 🡪 it shows only 2 decimal points line 3.14  
format special 🡪it give the sign positive or negative / zero   
format rat 🡪 it gives the rational number from a decimal number .  
format compact 🡪 supresses some blank spaces  
format loose 🡪 resets to less compact display  
  
  
Arrays In MATLAB:  
  
to print the number from 1 to 10 with increment of 1 ;  
  
code :

ar1 = 1:1:10  
  
ar1 =

1 2 3 4 5 6 7 8 9 10

When you try to multiply something to a matrix ar1   
example :

Ar1\*5   
each element is multiplied by 5

ans =

5 10 15 20 25 30 35 40 45 50  
  
  
  
Polynomial Roots :  
  
to find the polynomial roots , first we have to write the co-efficient in order of degree.