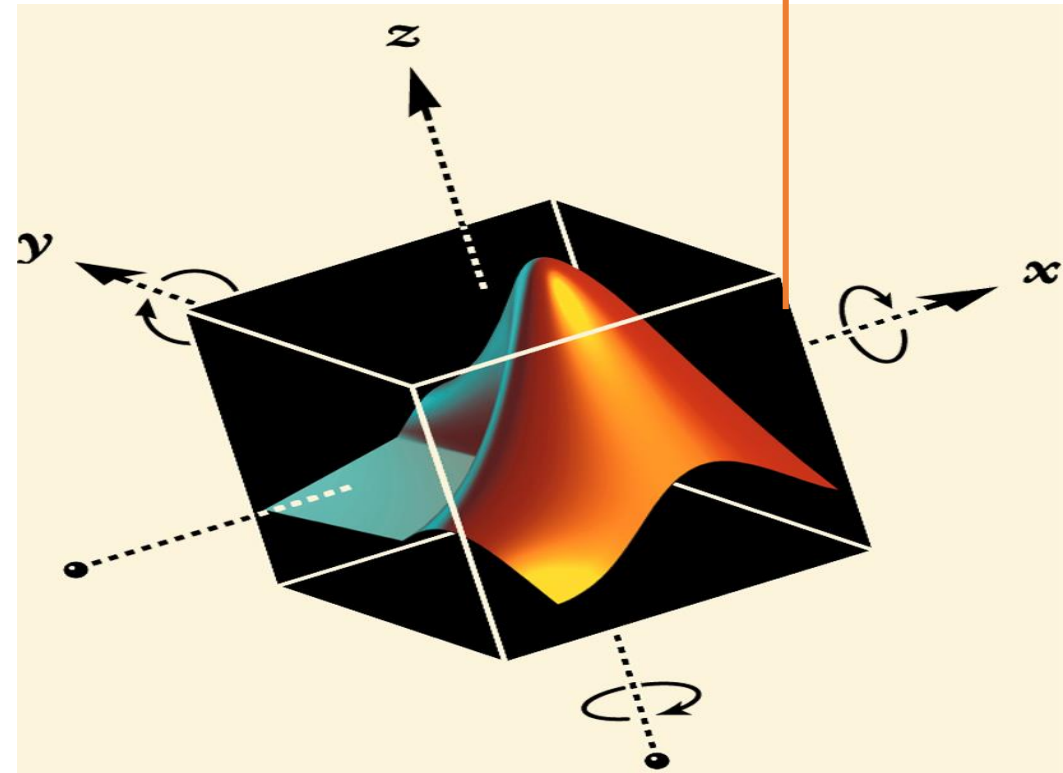# SOME BASICS OF MATLAB

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INTRODUCTION

➢ MATLAB : **MAT**rix **LAB**oratory

   As its basic data element is a matrix (array)

➢ Why Matlab?

- User Friendly
- Easy to work with
- Powerful tools for complex mathematics

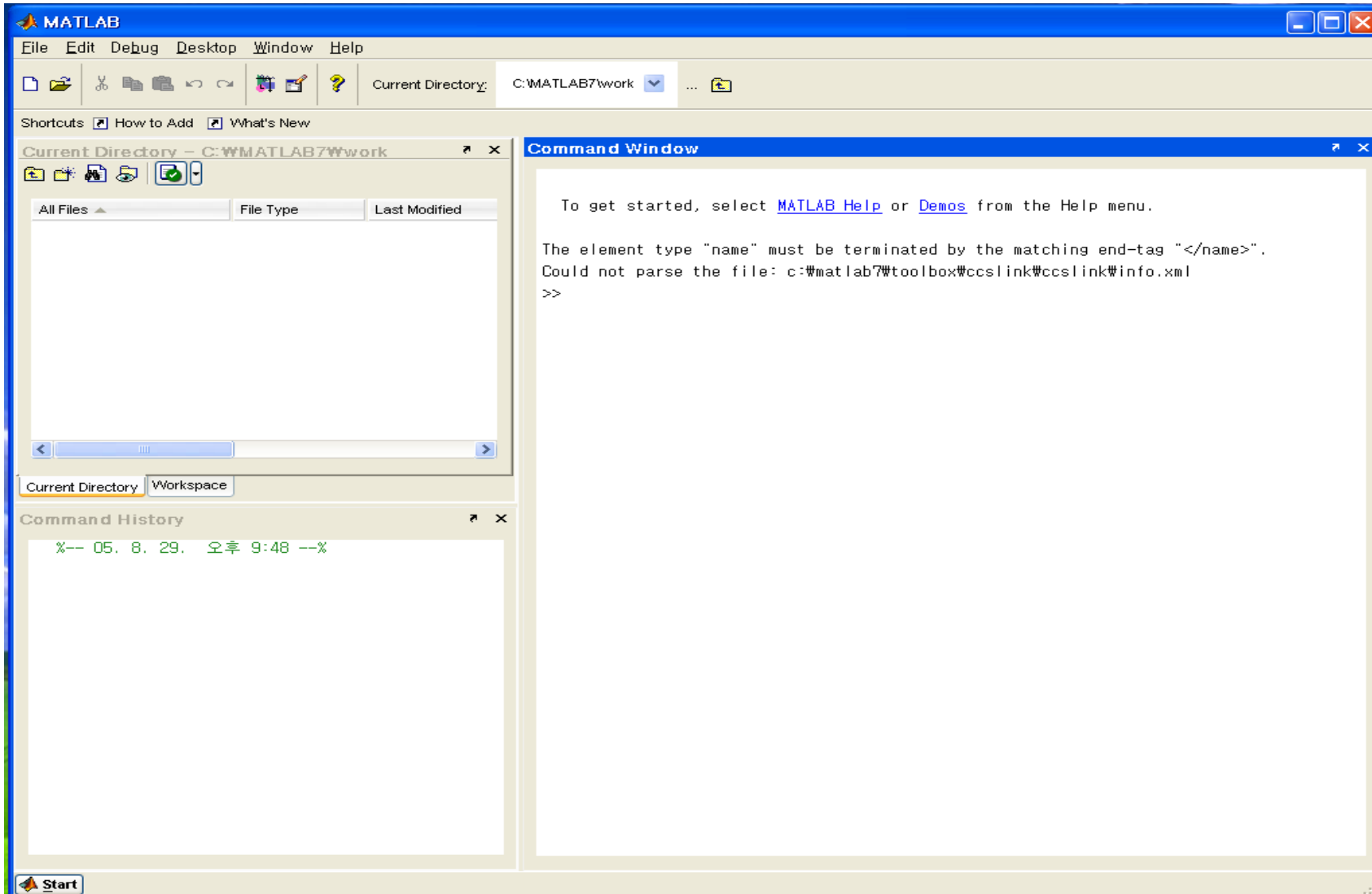# MATLAB WINDOWS

➤ Default view of MATLAB:

This view of MATLAB, contains three smaller windows

that are

1. Command Window
2. Workspace
3. Command History.

DEFAULT WINDOW

Notes for Working in Command Window

➢It is the main window

➢To type the command the must be placed next to the command prompt (≫).

➢If we press the enter key after typing the command, it is executed.

➢Several commands can be typed in the same line separating them by typing a comma.

➢Editing is not possible when we press enter key.

OTHER WINDOWS

Except the three default windows there are five more windows as

1. Figure Window
2. Editor Window
3. Help Window
4. Launch Pad Window
5. Current Directory Window

SOME IMPORTANT COMMANDS FOR USING MATLAB

clc	clears the Command window
clear	Removes all variables from memory
exist('name')	Determines if a file or variable exists having the name 'name'
quit	Stops MATLAB
who	Lists the variable currently in memory
whos	Lists the current variables and sizes, and indicates if they have imaginary parts
:	Colon; generates an array having regularly spaced elements
,	Comma; separates elements of an array
;	Semicolon; suppresses output of a command
…	Ellipsis; continues a line (when the command is too long to be fit in one line)

SOME INBUILT SPECIAL VARIABLES AND CONSTANTS

ans	Temporary variable containing the most recent answer
eps	Specifies the accuracy of floating point precision
i , j	The imaginary unit
Inf	Infinity
NaN	Indicates an undefined numerical result
pi	The number π

INBUILT OPERATORS (ARITHMETIC)

+ addition

- subtraction

* multiplication

/ division

^ power

′ complex conjugate transpose

.*   element-by-element mult

./   element-by-element div

.^   element-by-element power

.′   transpose

INBUILT MATHEMATICAL FUNCTIONS

Some commonly used mathematical functions

Note: The MATLAB trigonometric functions use radian measure

Function	MATLAB syntax
e^x	exp(x)
$\sqrt{x}$	sqrt(x)
$\ln x$	log(x)
$\log_0 x$	log10(x)
$\cos x$	cos(x)
$\sin x$	sin(x)
$\tan x$	tan(x)
$\cos^{-1} x$	acos(x)
$\sin^{-1} x$	asin(x)
$\tan^{-1} x$	atan(x)

THANK YOU !