

MATLAB VARIABLE & FILE NAMES

MATLAB PROGRAM FILES

ALSO CALLED
SCRIPTS
M-FILES

- START NAME WITH LETTER, NOT NUMBER
- CAN USE UNDERSCORE — BUT NOT SPACES OR DASHES
- SHORT → QUICK TO TYPE WITHOUT TABS
- MEMORABLE → e.g., r FOR CIRCLE RADIUS vs. X

my_hw

RAM

VARIABLE NAME	VALUE
d	10
r	5

ASSIGNMENT

$$r = d / 2$$

- ① EVALUATE EXPRESSION ON RIGHT
- ② RESULT IS ASSIGNED TO BECOME NEW VALUE OF VARIABLE ON LEFT

WHEN MATLAB SEES VAR. NAME IN EXPRESSION, IT USES CURRENT VALUE OF THAT VAR.

TYPES OF VALUES

FLOATING POINT $\rightarrow 35.681$

INTEGER 9

BOOLEAN \rightarrow TRUE or FALSE
| or \emptyset

STRING

$\times 10 \rightarrow 356.81$
 \nearrow

\uparrow
POINT
(DECIMAL PT.)

- DO NOT "DECLARE" VARIABLES
IN MATLAB, AS IN SOME
OTHER LANGUAGES

STRING OF CHARACTERS
'HELLO WORLD'

- QUICKER TO WRITE CODE BUT
SOME DRAWBACKS, e.g.,

TYP0 IN VAR. NAME CREATES NEW VAR.

RANDOM #'S

- REALLY PSEUDO-RANDOM # SEQUENCE
- GENERATED BY AN "ALGORITHM" ← METHOD STARTING WITH A "SEED" #

- SEE HELP FOR FUNCTIONS rand & randi

- WHEN RESTART MATLAB, IT ALWAYS STARTS WITH SAME SEED

- CHANGE SEED WITH FUNCTION rng

e.g., MIDDLE-SQUARE METHOD

675248 ← EXAMPLE SEED

↓ SQUARE

455959861504

↓ TAKE MIDDLE 6 & SQUARE & REPEAT.

==
a = randi(100)
==

↑ INPUTS 100 TO MATLAB STD. FUNC randi

→ m-file → A PROGRAM THAT RETURNS RESULT TO YOUR PROGRAM

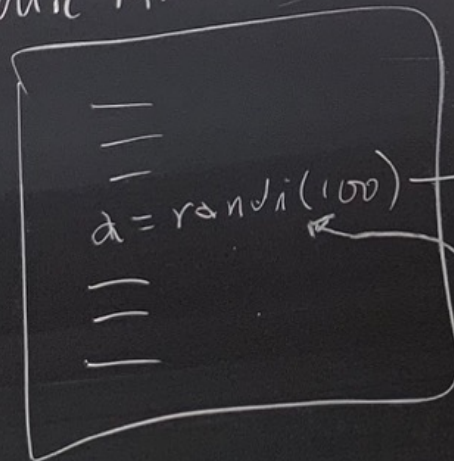
JUST DO IT → YOU WON'T BREAK ANYTHING!

SIMPLE THINGS IN COMMAND WINDOW

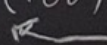
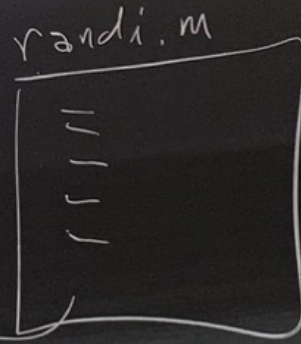
START A SCRIPT (m-file, PROGRAM) TO TRY THINGS OF A FEW LINES OR LONGER,

EXPERIMENT & LEARN → NOT JUST DO HOMEWORK

YOUR MAIN PROGRAM



STD. LIBRARY ("TOOLBOX")



MATH EXPRESSIONS

()

^

*

/

+

-



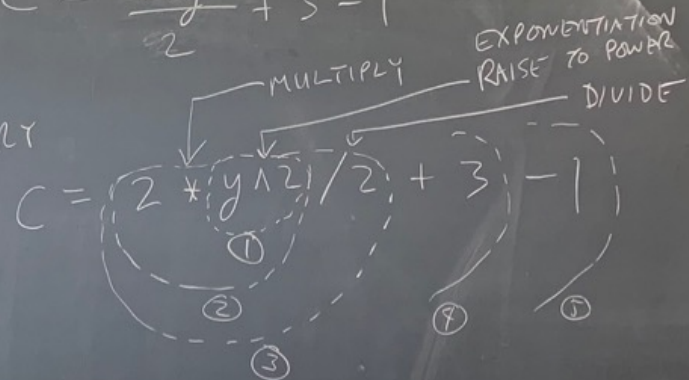
HIGHER
PRIORITY

IF 2 PARTS OF EQUAL
PRIORITY, THEN EVALUATE
LEFT-TO-RIGHT

HANDWRITTEN

$$C = \frac{2y^2}{2} + 3 - 1$$

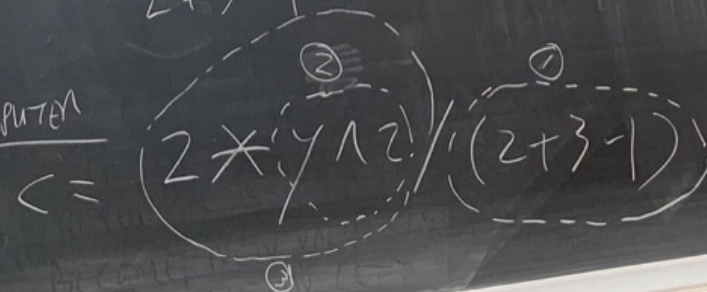
TRY



HAND

$$C = \frac{2y^2}{2+3-1}$$

COMPUTER



We also used the computer display to look at the homework assignment file, and the “how to” write and publish homework files at ReactorLab.net