

INTERACTIVE SCRIPTS

Lecture Date: 21 SEP 16

We have been using script files as a way to run a set of matlab commands.

Set of MATLAB commands in script file = program

IDEA: THIS CLASS, ONCE YOU REACH THIS POINT, SHOW STUDENTS HW. GIVE THEM 5 MIN. THEN ASK THEM WHAT THEY WANT ME TO TEACH

QUESTION: What major thing has been lacking from our programs so far?
 → human interaction

IMPORTANT: When a script file is executed, the variables used in script MUST have assigned values

SCRIPT ex)

>> A * B

>> A = [1 5 10 12]

>> B = 6

QUESTION
 Will this work?
 WHY?

You can assign in script file, in command window,
 OK not great
 or you can ask a human!
 BEST

input() command

Variable-name = input('message to user')

>> input_example.m

```
disp("This program multiplies two scalars")
num1 = input('First number to be multiplied ')
num2 = input('...')
```

OUTPUT COMMANDS

disp() command for displaying variables

disp(name_of_variable) or disp('text as string')

↑
NOTE: only one variable can be displayed

fprintf() for displaying text AND data
AND the output can be formatted

next line * AND can write to a text file *

- display text w/ fprintf

fprintf('text to display')

- Text and numerical data

fprintf('text as string %-5.2f additional
text', variable-name)

$\% - 5.2 f$
 ↑ marks the spot where number is to be inserted
 └───┬───> formatting elements

<u>Flag (optional)</u>	<u>Description</u>
- (minus sign)	left justifies #
+ (plus sign)	prints a sign character (+ or -)
0 (zero)	adds 0's if num is shorter than field

$- 5.2 f$
 ↑ field width and precision (optional)
 ← conversion character (req)

Field width and precision (optional)

$5 . 2$
 ↑ field width : minimum number of digits to display
 ↘ precision : num of digits disp after decimal

Conversion character (req)

e	exponential notation	lowercase
E	exponential notation	uppercase
f	fixed point	"
g	shorter of e or f	
G	shorter of E or f	
i	integer	

AND MORE!

* NOTE : can insert more than one num.

`fprintf('text... %f ... %g ... %e...', var1, var2, var3)`

LAST NOTE:

fprintf is vectorized. When a variable that is a vector or a matrix is included in the command, it will repeat until the data is used column by column