University of Louisiana at Lafayette
EECE 260, Fall 2019

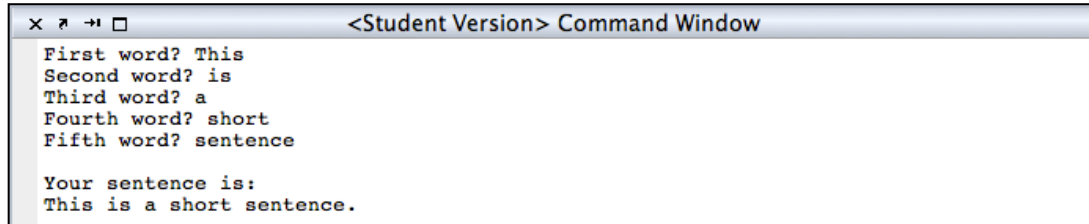**Homework Assignment #2**

Problem 1
Write a script file that collects 5 user input character strings (or "words") via the pre-defined function input(), appends these 5 character strings together with spaces (empty characters) in between and a period at the end, then displays the "sentence" made up of the vector of concatenated strings.

Example run:

```
x ⌐ ⌐⌐ ☐              <Student Version> Command Window

First word? This
Second word? is
Third word? a
Fourth word? short
Fifth word? sentence

Your sentence is:
This is a short sentence.
```

Problem 2
Create a variable in MATLAB called "c" such that:

$$c = 42.2 - 21.7i$$

You wish to use MATLAB to create a variable "R" that will contain the real portion of "c" and a variable "I" that will contain the imaginary portion of "c". Research pre-defined MATLAB functions on the MathWorks website to find the appropriate functions to do this. Once you find these functions, use them in your script file to define "R" and "I". Don't forget to display and explain your output.

Problem 3
Use the function fprintf() to display the message below to the command window EXACTLY as written. To do this, you MUST load a variable x into fprintf() to display the 62 and you MUST make use of the newline character.

The value of x is 62.
This is a great value...
The best I've ever seen!

Problem 4
Use the pre-defined function stem() to generate a stem plot for the following mathematical function $y(t)$:

$y(1) = 1.1$, $y(2) = 2.2$, $y(3) = 3.3$, $y(4) = 4.4$, $y(5) = 5.5$, $y(6) = -5.5$, $y(7) = -4.4$, $y(8) = -3.3$, $y(9) = -2.2$, $y(10) = -1.1$

Don't forget to label your plot and limit the view of your window appropriately with xlim(). Gridlines are optional.

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Problem 5
Use the function `randi()` to generate a 3x5 array of random integers in the range of -10 to 50. Make sure to display this array, along with relevant explanatory text.

Problem 6
Generate a vector "*m*" with the following line of MATLAB code:

```
m = linspace(0, 15, 48).*rand([1 48]);
```

Using the pre-defined function `sum()`, add all of the elements in "*m*" together. Then, use the pre-defined functions `floor()` and `ceil()` to round the sum you find to the next lowest or highest integer value respectively. Display the sum and both rounded values, including explanatory text identifying which result is which, using `fprintf()`.

Problem 7
Find a simple pre-defined function on the MathWorks website that was not mentioned in the lectures or assignments and show an example of how it works. Make sure to explain what the function's arguments and return variable (if applicable) are in your script file's comments.