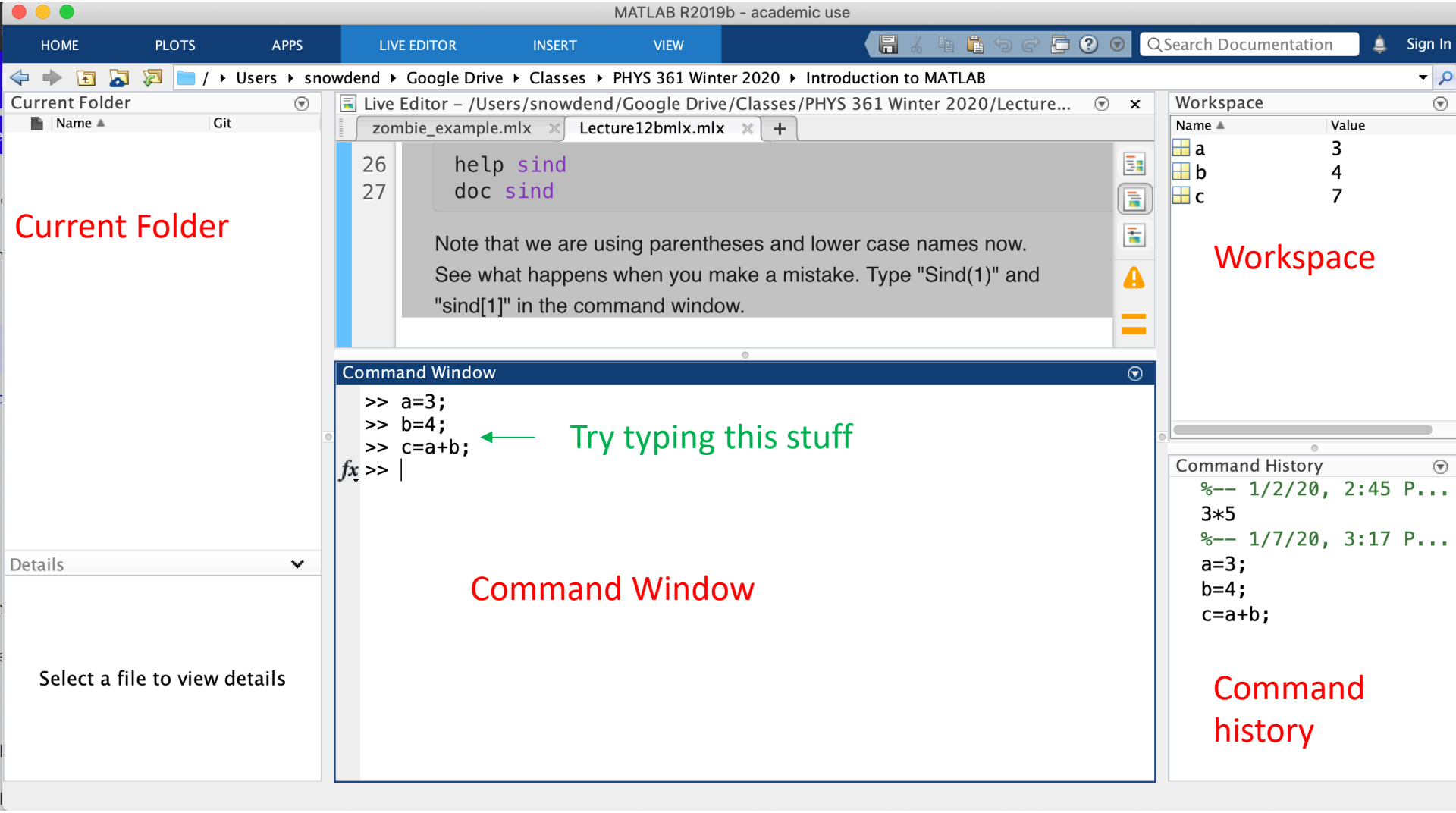
Week 1:

Learning Outcomes:

- Learn how to use MATLAB's desktop interface
- Learn the difference between scripts and live scripts
- Gain a better understanding of when you should use a live script and when you should use a script

Desktop Environment:



Desktop Environment Notes:

Current folder:

- All programs or data files you want to import into your program should be in this folder OR you have to provide the full path to those files on your computer (I'll show you how to do this later)
- All images or data files you export from your program will be saved in this folder
- MATLAB will usually ask you to make the folder you are saving your program to the current folder. You usually want to do this.

Desktop Environment Notes:

Workspace:

- Shows the variables you have created in a program or in the command window
- Double clicking on arrays or matrices allows you to see and change the content

Command History:

- Can be useful for remembering or rerunning commands
- Double click to run a command

Desktop Environment Notes:

Command Window:

- This is helpful for using MATLAB like a calculator or using MATLAB to make a quick plot
- I always use the command window to test code or syntax before putting it in a script
- All of the variables in the workspace are available in the command window

Useful commands:

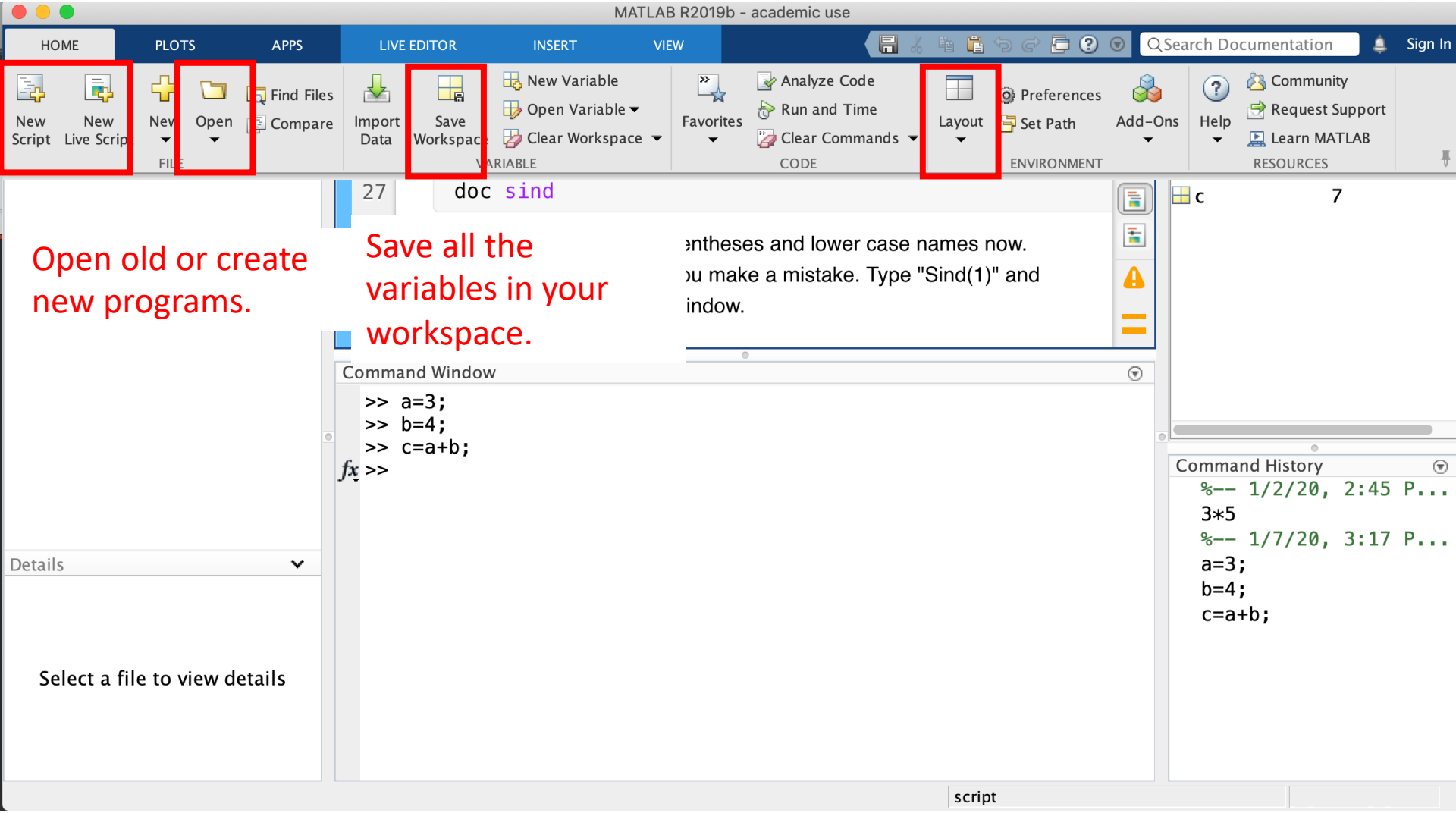
- `close all`: close all figures
- `clear all`: clear the workspace (all variables), can also use clear a to just clear one or more variables
- `clc`: just clear the command window without clearing the workspace
- `doc command`: produce the help documentation for a command you want to use
- `help command`: produce a shorter help file in the window

Keyboard shortcuts:

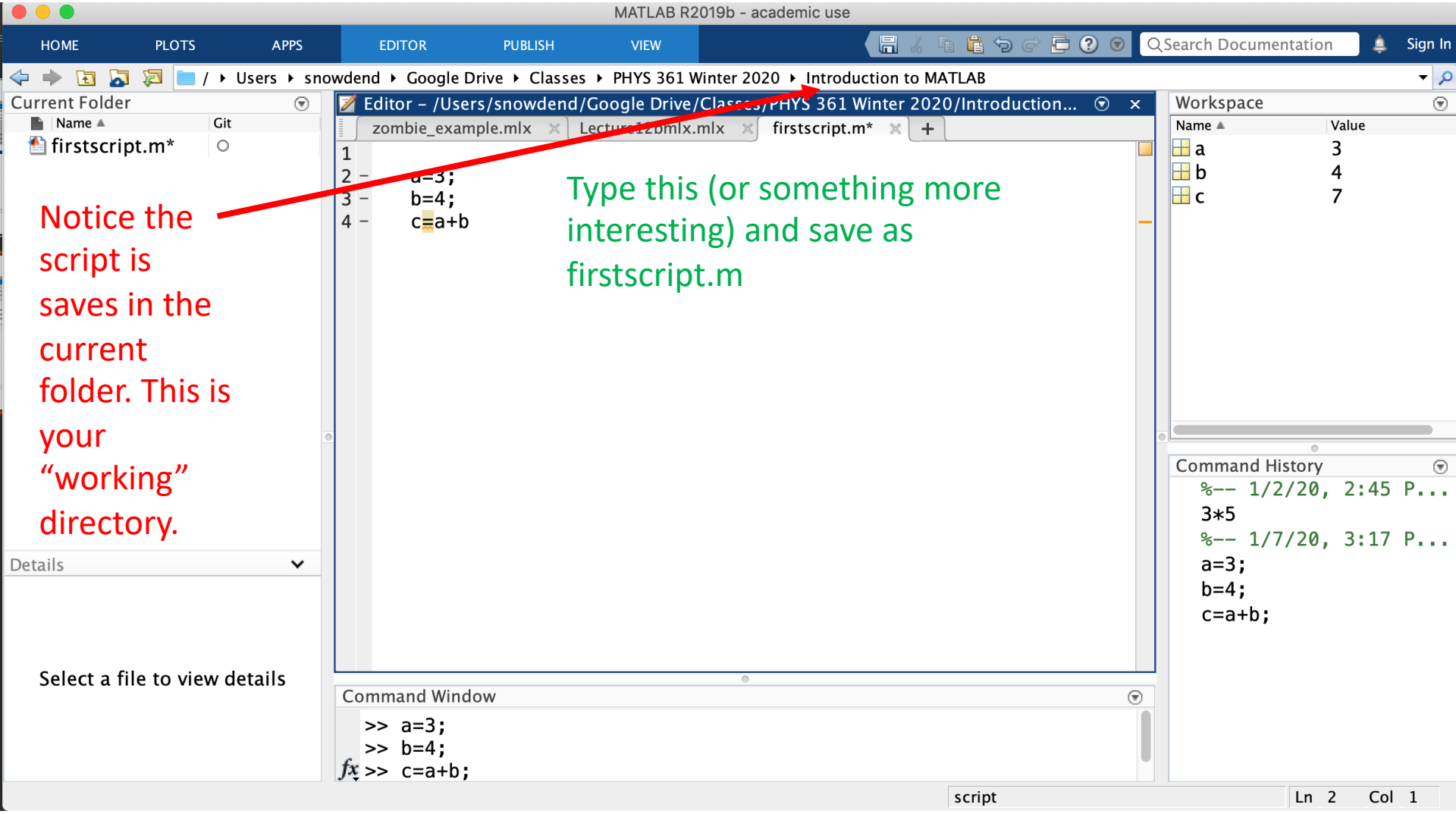
- Up and down arrow scrolls through previous commands
- Tab will give you options to complete the command you are typing
- Semi-colon (or lack of) determines whether the output is displayed

Home Toolbar:

Change the layout of the environment.

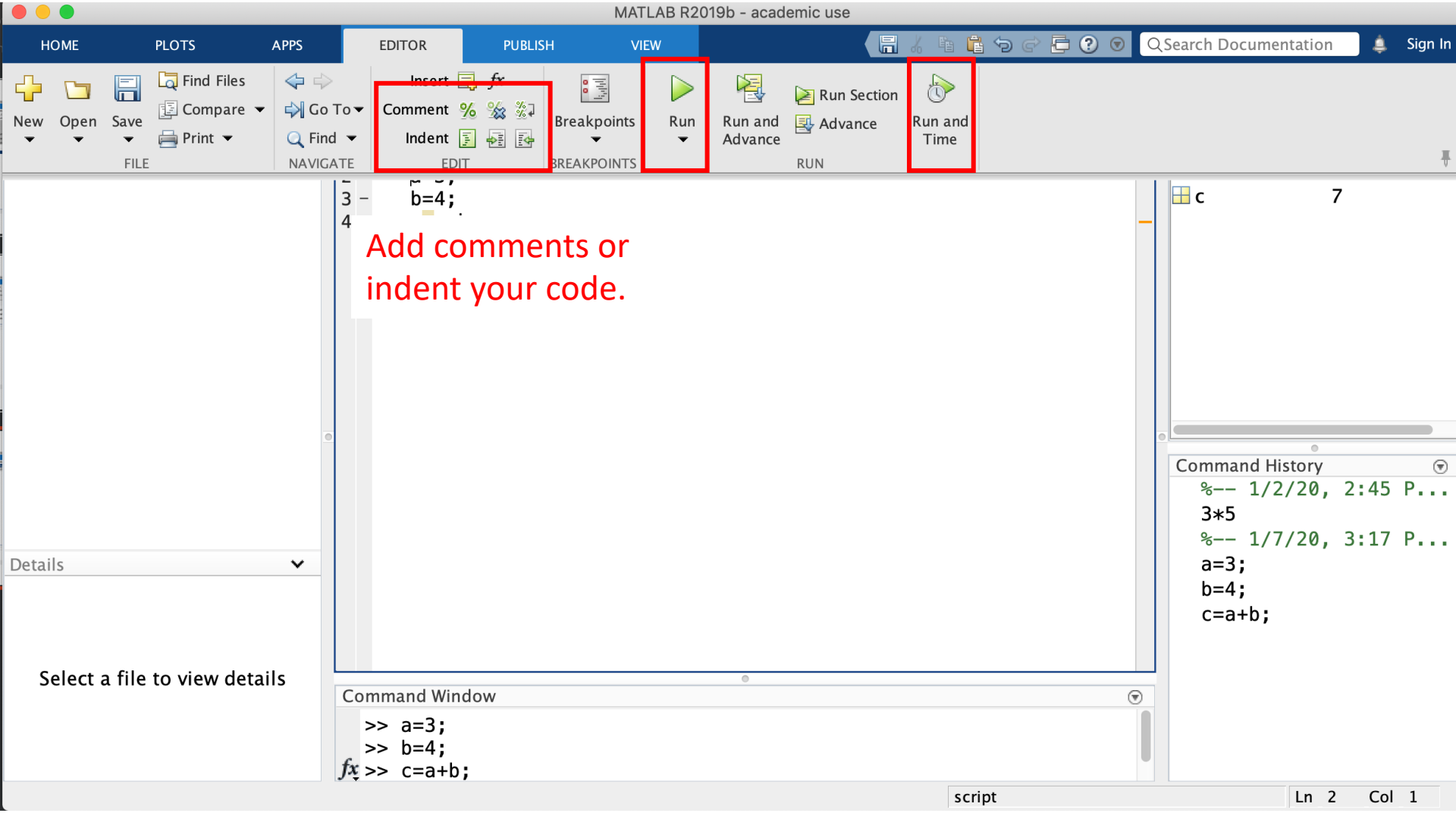


Your first script:

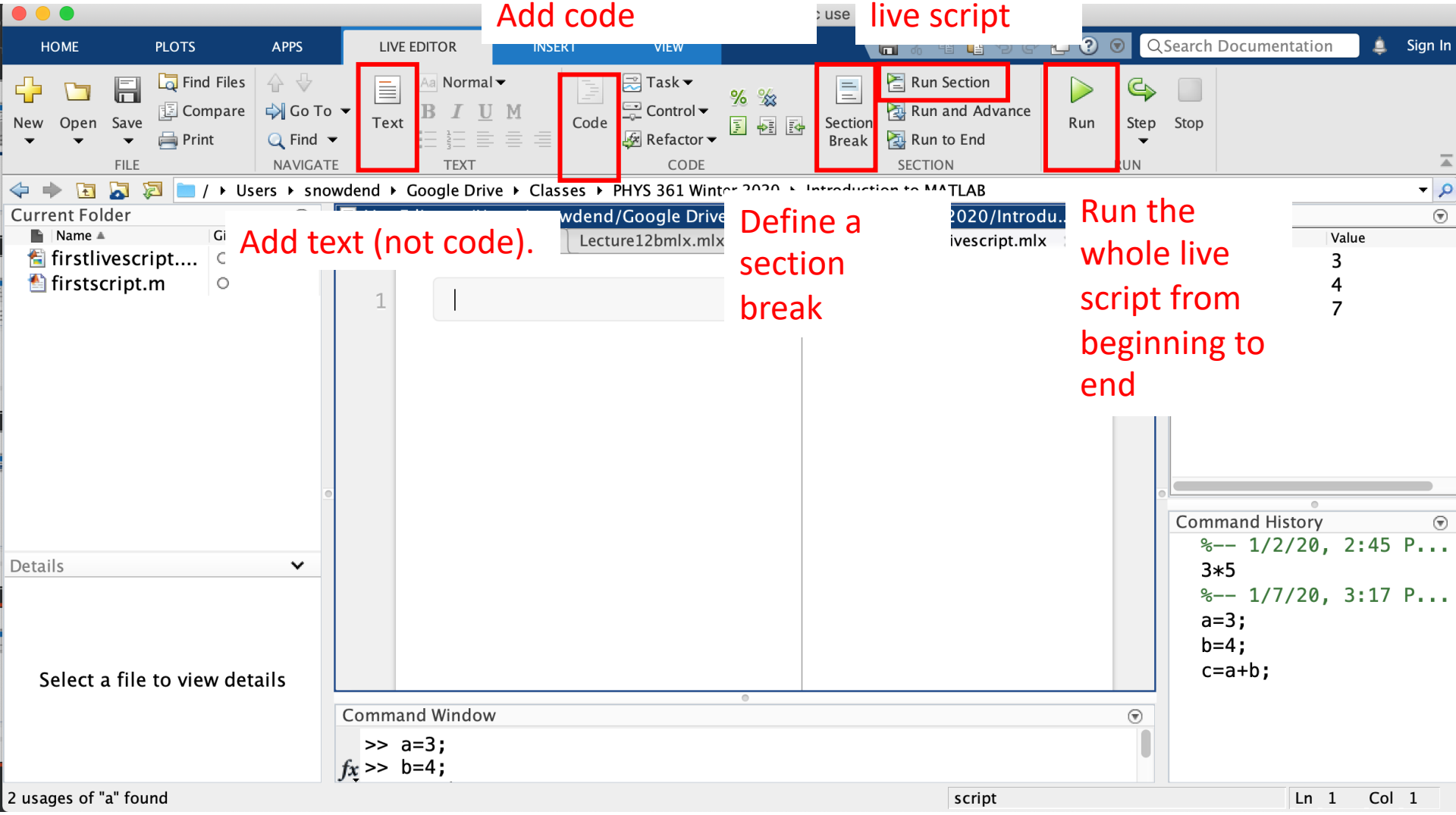


Editor Toolbar:

Run or, for optimization, run and time.



Your first live script:



Which type of “script” do I use:

Scripts:

- Most commonly used
- Better for longer or more complex programs
- Better for programs with a lot of functions, especially if you want to import functions from another file
- Better for quick programs or programs you do not plan to share with others

Live Scripts:

- Based on a popular Python “notebook” format (Jupyter notebook)
- Becoming more popular for many applications
- Better for short calculations and lab-notebook style data analysis and plotting
- Excellent for mixing code with clear explanation of theory and/or application
- Best for clear code that will be distributed to others