



Session 2 Recap

CELEN087

Please check your learning outcomes by working on Lab Worksheet 2 and Homework Exercise Sheet 2.

Learning outcomes:

1. Manage the MATLAB script files:
 - Create and execute MATLAB script file
 - Know how/where to save your script files onto a designated folder in the computer
2. Write script file with user interactions:
 - Make proper use of `disp()` and `fprintf()` functions to output messages
 - Use `input()` function to prompt for user input
3. Plot 2-d graphs of functions:
 - Visualize single function and multiple functions
 - Change LineSpecs (color/line type/line width)
Note: use the built-in help command to see details in exam: `help plot`
 - Adjust graph configurations (xlabel/ylabel/xlim/ylim/legend/title/gridline)
 - Save the generated figure as an image file with .PNG file extension
4. Know logical array and its application:
 - Create logical arrays by using logical operators
 - Know the built-in logical function `isprime()`
 - Make use of logical array as index for specific questions

Open questions (AI tools are allowed/recommended in your learning process):

1. MATLAB is a powerful tool for creating a wide variety of plots and visualizations. Although we only cover simple 2-d plot of functions in this module, you may find more applications of different types of plots online.
For example: Scatter Plot, Histograms, Pie Charts, Surface Plots (3-d data visualization), Contour Plots, Polar Plots, Vector Fields, Animated Plots.
How/Which data visualization methods may be helpful to your major study in the future?
2. When creating variables or script files, what is a good way of naming them? Is there anything you should avoid doing?
What is the *Camel/Case* naming convention in programming?
3. As a beginner without much coding experience, can one improve his/her programming skills by reading/analyzing/learning codes designed by others?
If so, how/where to find some good examples of program codes?

The following key words will be used frequently in our teaching. Knowing the meaning of each will help your learning in MATLAB.

Vocabularies:

- script file
- prompt message
- decimal places
- quotation marks
- character/string
- line specifications
- solid/dashed/dotted lines
- graph legend
- gridline
- overlay plot
- logical array
- prime number
- random integer
- parametric equation
- MATLAB comment