INTRODUCTION TO COMPUTER PROGRAMMING IN PYTHON

Lesson 4
Astro Scholars 2022

Review

Plots

- Create a figure and axes
- Specify what you want to plot on the axes
  - If a 2D array, image, use `ax.imshow(name of image)`
  - If data, use `ax.plot(xdata,ydata)`
- Display your figure, `plt.show()`

Arrays

- Work with many data at once in a row – column format
- Do mathematical operations on all values in an array at once
- Index values by row and then column, remember counting starts from 0

DATA VISUALIZATION

Customize a Plot!

- Use different colors for different data
- Use different line styles and line widths to differentiate lines
- Use labels for data and create a legend
- Label your axes!

FUNCTIONS

Why use a Function?

- A function is a block of code which only runs when it is called
- You can pass data, known as parameters, into a function
- The function can return output after doing some operations on the input
- Functions make code repeatable without rewriting the same block of code every time you need it
- They make your code **modular,** so you can import functions from one Python file to another (similar to how we import Python libraries that come with their own functions)

RESOURCES

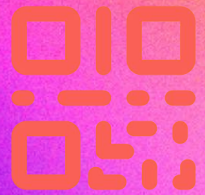
https://www.w3schools.com/python/python_functions.asp

https://matplotlib.org/stable/api/_as_gen/matplotlib.axes.Axes.legend.html

https://matplotlib.org/2.0.2/examples/color/named_colors.html

https://matplotlib.org/stable/gallery/lines_bars_and_markers/linestyles.html

Exit Ticket



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Questions?