# Python IV - Lesson 22

Date: Nov 27, 2022

## Agenda

- Google Colab
- Matplotlib
- CCC questions



#### Proverbs 4:21

"Do not let them out of your sight, keep them within your heart;"

#### Review + Homework

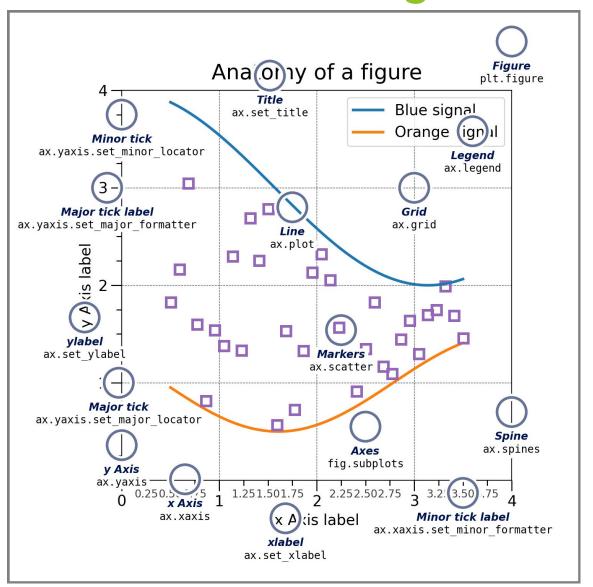
https://colab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_ptUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_gtUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_gtUJq5mpTwi8fJFIWc5BE?usp=sharing#scrollTo=d29868M33Polab.research.google.com/drive/1NootCAp0tp\_gtUfficatapparch.google.com/drive/1NootCAp0tp\_gtUfficatapparch.google.com/drive/1NootCAp0tp\_gtUfficatapparch.google.com/drive/1NootCAp0tp\_gtUfficatapparch.google.com/driv

### Numpy and Matplotlib

- NumPy (Numerical Python) is a powerful, and extensively used, library for storage and calculations. It is designed for dealing with numerical data. It allows data storage and calculations by providing data structures, algorithms, and other useful utilities. For example, this library contains basic linear algebra functions, Fourier transforms, and advanced random number capabilities. It can also be used to load data to Python and export from it.
- Matplotlib is widely used for data visualization like for plotting histograms, line plots, and heat plots.

Let's explore more in Colab!

## Matplotlib - Parts of a Figure



## **CCC** questions

Introduction:

https://cemc.uwaterloo.ca/contests/computing/details.html

Past contests:

https://www.cemc.uwaterloo.ca/contests/past\_contests.html