## Introduction to Programming W12

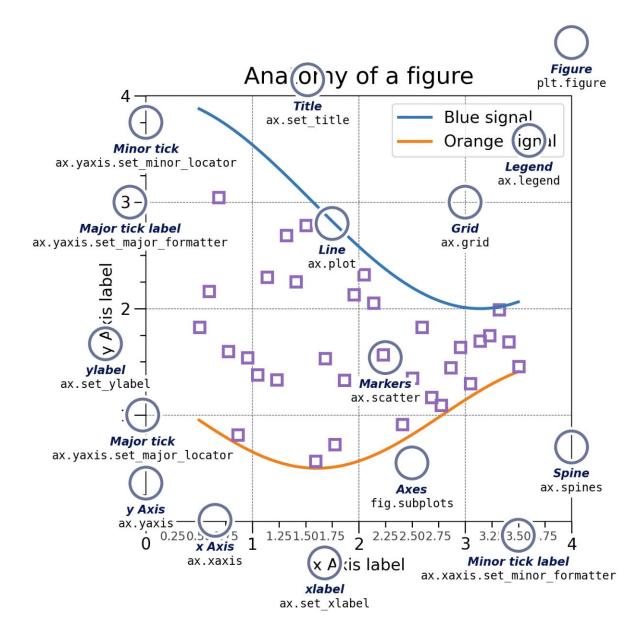
Visualization I., Introduction to Matplotlib

2022/06/24

## Matplotlib

Matplotlib is a Python library for creating static, animated, and interactive data visualizations. The documentation for Matplotlib can be found at <a href="https://matplotlib.org/stable/index.html">https://matplotlib.org/stable/index.html</a>. If you do not have matplotlib (encounter an error when importing it), you can install it with the pip install matplotlib command from a terminal.

You can refer to the picture below, "Anatomy of a figure" when not sure about the terminology.



Download the notebook "Matplotlib\_intro.ipynb" from Manaba R+. Open Jupyter Notebook and navigate to the directory where the notebook is located, and open it. Run the commands while observing the outputs, and check the documentation for the corresponding parts if needed.

## Exercise 12.1

Download the notebook "121\_exercise.ipynb" and "iris.csv" from Manaba R+, and put them into the same folder. Open the notebook in Jupyter Notebook and complete the code based on the instructions in the comments and Markdown cells.

- Since no header is needed in a notebook, you do not need to write a "program description" this time. Instead, follow the instructions and provide explanations about your code when required.
- Do not submit the .csv file(s), only the Jupyter Notebook file (with the .ipynb extension). Name it the following way:
  - $ip_ex121_<$ student id number>.ipynb, for example:  $ip_ex121_012345678-9.ipynb$  (so do not forget to rename the notebook you download)