



## 7.1.1 Preliminaries

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Matplotlib is an extremely powerful scientific plotting library that is routinely used to create publication quality figures in Python. This flexibility can make it intimidating to learn at first as there are often many different ways of “coding” the same plot – sometimes it can feel like a completely new language by itself! In our experience the best approach to learning this library is to dive into some basic examples to get accustomed to common plotting idioms. Thankfully, once you have internalized these principles you will find that these ideas carry over, nearly identically, to other computational science focused languages such as MATLAB and Julia.

**Remark 1.** *The [matplotlib documentation](#) is the standard reference to look up how to generate any type of plot that you can imagine. However this documentation is very thorough and can be overwhelming for those just beginning. We recommend revisiting this link after reading through this chapter to get a deeper understanding of the API!*

To begin, here are some basic points:

- You need to import the library via `import matplotlib.pyplot as plt`. Abbreviating this package as `plt` is almost universally recognized.
- Executing `plt.figure()` creates an empty figure in the background. However you will not be able to

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