

Example 1

This example is a Jupyter Notebook that illustrates how I use a fun but effective narrative to interactively teach simple programming concepts. This is typical of how I used interactive activities in my classroom. In particular, my strategy here is to separate the programming concepts from the science concept, to avoid unnecessary confusion. This can be seen in the following pages, which are created from two notebook files:

1. The Programming Assignment, which introduces concepts like iterables and stem plots
2. The Workshop Assignment, which uses iterables and stem plots to interpret and evaluate a spectral analysis using the Discrete Fourier Transform.

Note that both files are actually “solution” notebooks: the solutions are included in the code, and the code provided to the students is commented in the code cells (typically with missing parts to fill in).

You can try this assignment yourself by downloading the notebook files at the following link:

Note that this should work with most recent versions of Python above 3.X and a virtual environment containing numpy and matplotlib.