In this exercise sheet you'll be using some random data that I've generated for carrot and onion price variations over one year.
Please be aware that these data points are just simulated and, although the prices ranges are meant to be comparable to the actual ranges, they don't actually show any seasonal trends you may expect.

The units of the price can be interpreted as either Euros/Dollars (any type of Dollar), meaning that a value of 1 corresponds to one of that unit, and a value of 0.01 corresponds to 1 cent.

1 Exercise 1

Labeling our graphs is a very important part of Data Visualization, especially when you want to use it as a way to convey data to others.

It also helps you to be able to distinguish multiple graphs on the same plot, and makes it easier for you to read your graphs.

1. Read and understand the two attached data files in whichever format you prefer
2. Load in each data set and save it in appropriately named variables
3. Create a new figure, size 8,8, with one subplot, and plot both the onion as well as the carrot prices on the same graph
4. Make the colour of the onion plot purple
5. Make the colour of the carrot plot orange
6. Add a label you deem appropriate to each plot
7. Label the axes as well as add a title to your graph
8. Add a legend to the graph and then show the graph

2 Exercise 2

Annotating you graph can be important as it lets you easier point out specific features or trends, but remember to annotate sparingly as too much annotation can make your graph illegible.

1. To the plots created in Exercise 1 above, add an annotation above the peak price for plot, making the colour a light red
2. Now also add the prices above the lowest price for each plot, colouring them in light green
3. Find a region on each of the graphs that shows an increasing price and, for each plot, put the price change per day in dark red next to this increasing line
4. Find a region on each of the graphs that shows a decreasing price and, for each plot, put the price change per day in dark green next to this decreasing line

3 Exercise 3

A large part of data visualization is making data understandable to others who may not be so familiar with the analysis you've done. Often that means adding to or changing around the formatting of your graph to make it look more appealing, don't underestimate the importance of a good-looking and readable graph.

1. To start off, adjust the font sizes of all of your labels, annotations, and titles to make them big enough that they're legible, without making them too large though that they look clunky
2. Choose the elements that you think are most important and make their text bold to help them stand out from the rest
3. Remove the right and top spine of your axis, so that your data doesn't look boxed in
4. Pick one of the many styles that matplotlib offers, and change the style your graphs use to that one
5. Finally, decide which style format you prefer (your's or the new matplotlib one you chose), go with that style and save your Figure, giving it a distinct name so that you don't have to open it to know what the graph will show