matplotlib_line-graphs_workbook

September 21, 2020

1 MATPLOTLIB LINE GRAPS WORKBOOK

Have a go at the following questions to practice your new found skills.

If you have any questions, go back to the course videos and have another look. One version of the answers is available in the next download. Remember, there are different ways to write code to get the same answer, so your answer can be correct and different to the answer example!

If you feel stuck and want some in person help, then have a look at the events page to join in a workshop https://swamphen.co.uk/events.

```
In [1]: # import salaries data

In [2]: # read in salaries data to colab

In [3]: # extract the data to use
        # change rank to AssocProf = 0, AsstProf = 1, Prof = 2
        # change discipline to A = 0, B = 1
        # extract years since phd
        # extract years of service
        # change sex to Female = 0, Male = 1
        # extract salary ($)

In [4]: # import matplotlib

In [5]: # plot a line graph of salary in green with a solid line
        # add in axes labels

In [6]: # what does this tell you about the range of salaries?

In [7]: # plot years' service in red with a dotted line
        # add in a graph title

In [8]: # what does this tell you about years' service?

In [9]: # plot years' service against salary in black with a dashed line and a
        # dot at the points

In [10]: # how could you change this horrible mess to a sensible line graph?
```

```
In [11]: # we will come back to plotting this new line graph with data sorted
         # in numerical order as it is not trivial in native Python, but is
         # in numpy and pandas!

In [12]: # what graph should you use to show the data in this form better?

In [13]: # does this show any correlation between salary and years service?

In [14]: # plot a line graph of sex in yellow dot dash line add axes labels

In [15]: # what does this tell you about the number of men and women

In [16]: # plot salary as a function of gender in green solid line with a star as a marker

In [17]: # horrible looking graph again!
         # change your plot statement so there is no line plotted to make it look better

In [18]: # what does that tell you about the split in wages between men and women

In [19]: # plot years_phd and years on the same graph

In [20]: # choose lines so you can see both data sets

In [ ]: # what would be the best graph to choose to show this data?
```