IT 166 Lab 11

Plotting in Python

Objectives

- Be able to plot figures using matplotlib and pandas.

Preparation

- Launch the Jupyter notebook.
- Rename the notebook page as “lab11”.
- Solution to one problem should occupy one cell.

Please provide solutions to the problems below.

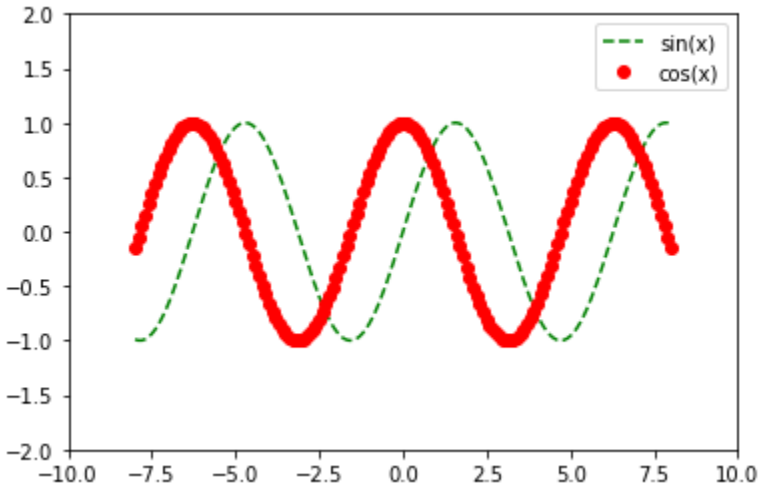
Problem 1

Use matplotlib to plot sin(x) and cos(x), where x is in [-8,8]

Requirements:

1) Two plots should co-exist in one figure.
2) Use NumPy to generate x, where x is in [-8,8] with a step of 0.1
3) For the sin(x), set the plot to be green-dashed line with no markers.
4) For the cos(x), set the plot to be red dots.
5) Set the limit of x axis as [-10,10].
6) Set the limit of y axis as [-2,2].
7) Set the legend using the ‘best’ parameter.

Expect outcome:



Problem 2

Use pandas to read the “tips.csv” file into a DataFrame. Create a figure that has four subplots, arranging the plots using a 2 by 2 mesh:

1) The top-left figure is a histogram of the column, “tip”. Set the color to be green and the number of bins is ten.
2) The top-right figure is a histogram of the column, “day”. You will need to use the following statement to group the column: grouped = df[‘day’].groupby(df[‘day’]) before plotting the histogram.
3) The bottom-left figure is a box-plot of the column, “tip”.
4) The bottom-right figure is a histogram of the column, “size”.

Expect outcomes: