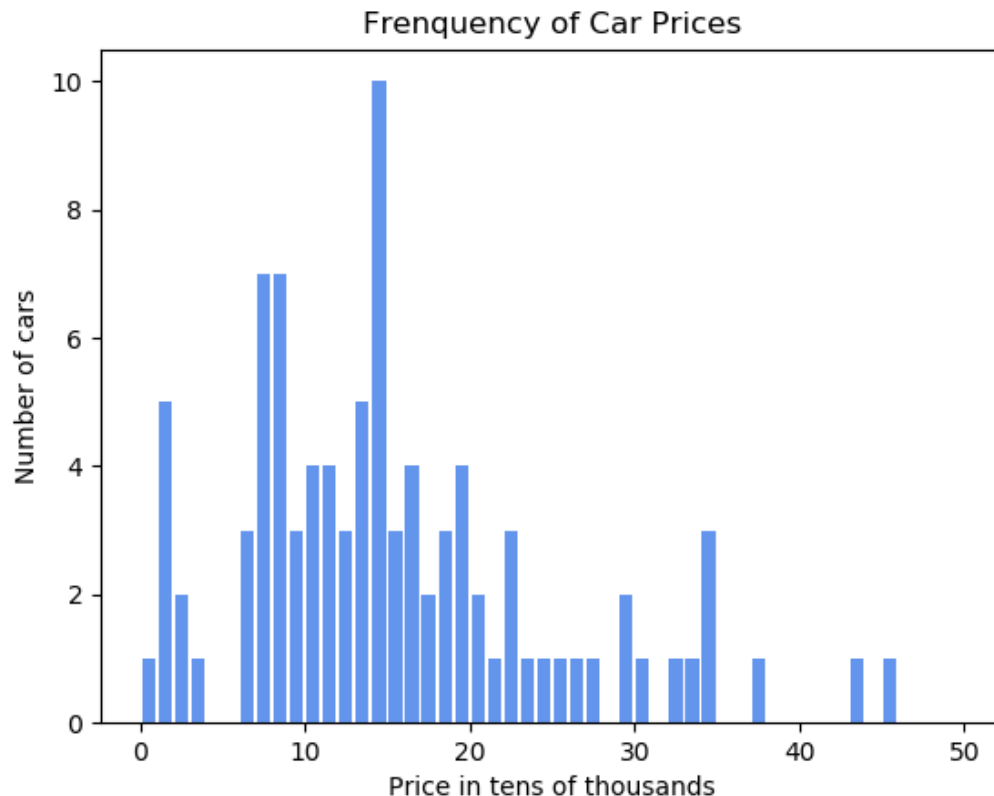


## MIS 6382 Object Oriented Programming in Python Spring 2021 Homework Five

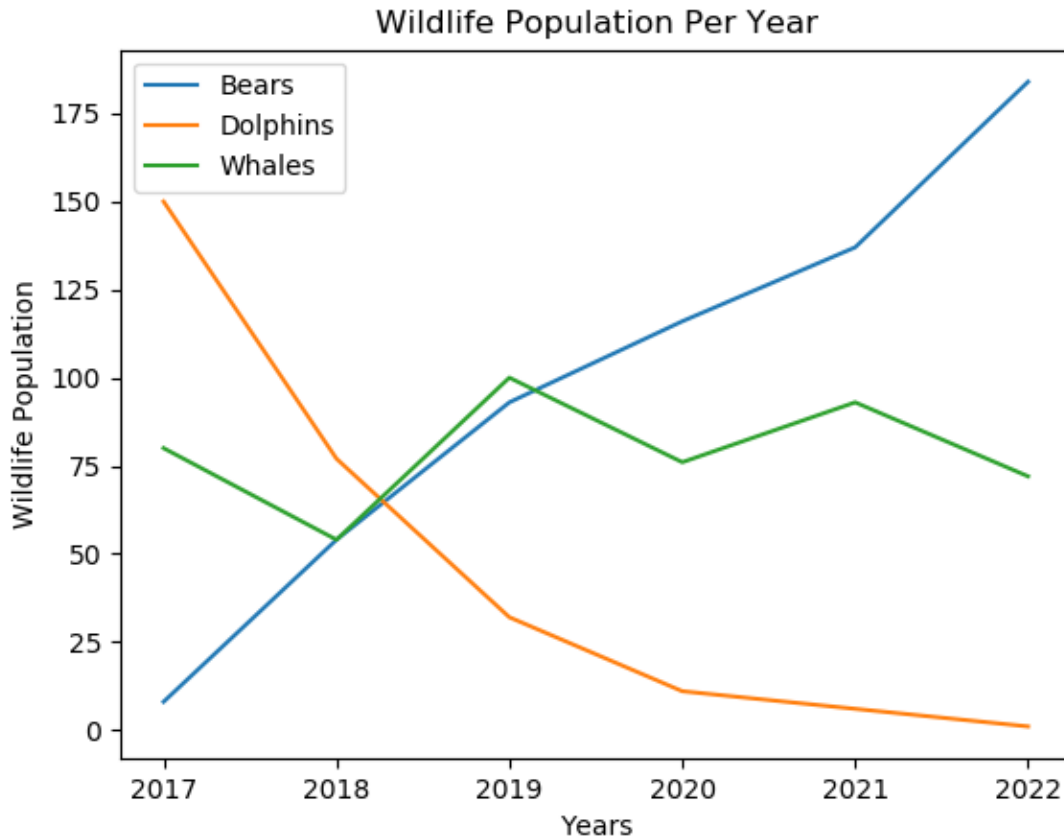
The following guidelines should be followed and will be used to grade your homework:

- The code for each question should be implemented using Jupiter notebooks.
- **All the code should be included in one single Jupyter Notebook file (.ipynb) and submitted to eLearning. Use the code mode rather than the markdown mode so the notebook can run directly (feel free to leave the results/outputs there).** The file should be named using your name and the chars “hw5”, e.g. firstname\_lastname\_hw5. You will be penalized 15% of the grade if your submission does not follow these requirements.
- This is an individual homework assignment; no group submissions will be accepted.
- You will get zero points if your program has syntax errors.

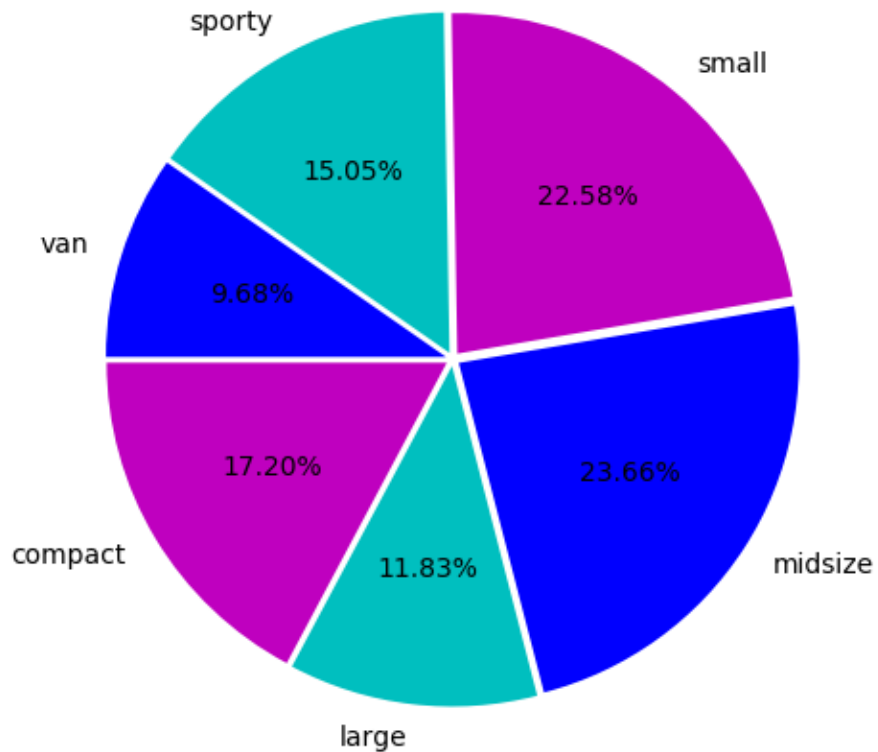
**Q1:** The attached carprices.txt contains a single column of car prices in 1000's. Read this data into your program. The first line is the heading and should be ignored. For any line containing non-numeric data, raise a ValueError exception and print a message saying 'This data is invalid and will be ignored' together with the exception object. You should divide each number by 10 and round it down to the nearest integer. Then plot a histogram that looks like the one shown below. The number of bins to use is 50.



**Q2:** The attached wildlife.txt contains data about the population of bears, dolphins and whales over a number of years. Read this data into your program. The first line is the heading and should be ignored. Then plot a line chart displaying the population trend for each animal. Your graph should look like the one shown below.



**Q3:** The attached cartype.txt contains a single column listing the type of car (van, compact, etc). Read this data into your program. The first line is the heading and should be ignored. Then plot a piechart after computing the frequency for each car type. Your chart should look like the one shown below. Each slice should be separated from the next as shown below.



Q4: Use the OOP style to replicate the figure in PlottingVI.ipynb file. You can refer to this link <https://matplotlib.org/3.2.1/tutorials/introductory/usage.html> or search more broadly on yourself. Here OOP style means “explicitly create figures and axes, and call methods on them”. You are expected to include something like “fig, ax = plt.subplots()” or “fig, (ax1, ax2) = plt.subplots(\*,\*)” in your program. Your graph should look like the one shown below.

