Data Analysis with Python

Intro to NumPy

Aim: learn why NumPy is an important library for the data-processing world in Python

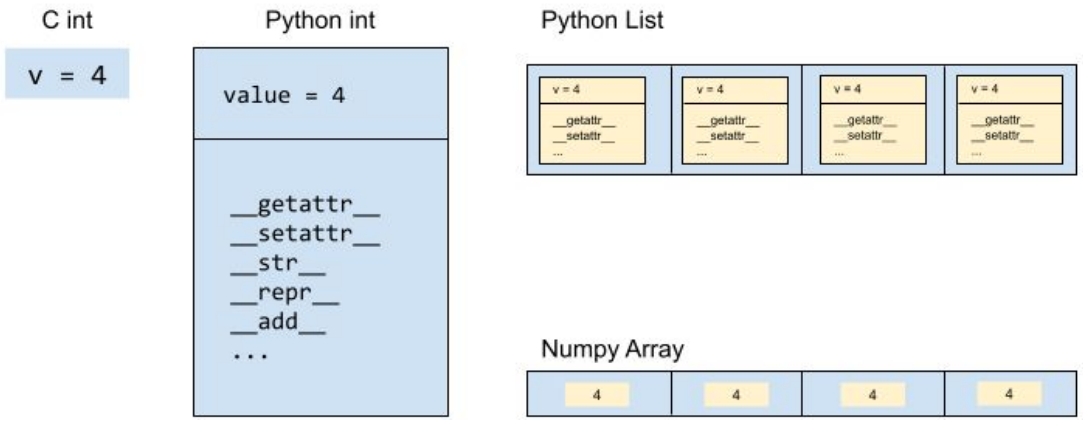
- Computations, memory storage, illustrates how Excel will always be limited when processing large volumes of data

Numpy: Numeric computing library

NumPy (Numerical Python): one of the core packages for numerical computing in Python, Pandas, Matplotlib, Statmodels and many other Scientific libraries rely on NumPy

- Major contributions:
  - Efficient numerical computation with C primitives
  - Efficient collections with vectorized operations
  - An integrated and natural Linear Algebra API
  - A C API for connecting NumPy with libraries written in C, C++, or FORTRAN

Let's develop on efficiency. In Python, **everything is an object**, which means that even simple ints are also objects, with all the required machinery to make object work. We call them "Boxed Ints". In contrast, NumPy uses primitive numeric types (floats, ints) which makes storing and computation efficient.




```
In [ ]: import sys
        import numpy as np
```

import sys

Import numpy as np

Basic Numpy Arrays

References

https://www.youtube.com/watch?v=r-uOLxNrNk8

https://github.com/ine-rmotr-curriculum/freecodecamp-intro-to-numpy/blob/master/2.%20NumPy.ipynb

https://docs.scipy.org/doc/numpy-1.13.0/reference/arrays.ndarray.html#array-methods