Numpy library

**The purpose:**

Numeric Python, or NumPy, is a basic Python package that improves the python language, a NumPy n-dimensional homogeneous array. A list is a useful tool offered by Python, as it lets you store values of different types at once and perform numerous operations on it. But it has certain limitations, and some operations on the list are not efficient. That’s why we need to combine with a few others python libraries.

**Interesting ways in which it might be used:**

It can be used to perform a few analytical operations on arrays such as trigonometric, statistical, and algebraic routines. Therefore, the library contains many mathematical, algebraic, and transformation functions. For example, you can use Matlab plots to create graphs and charts for representing data. Imagine you have a huge database, and you need to calculate the average of how many people are females and males. The best way would be to use a NumPy sub-library and show the data instead of creating a function from scratch. Also, you can used NumPy to model the flow of water during flooding or tsunami event, it is fast for calculating big amount of data.

**provides a high-level overview of the different functions included in the library**

One of the most important function is **numpy.repeat(a,repeats,axis=none)**, this function repeats the elements of an array, so if we have two differente data frames, both are containing the sales in 2019 and 2020, but we want only one data frame including all the information. Another function is**numpy.random.randin(low,high=none,size=none,dtype=’l’)** This function can be used to simulate random events such as tossing a coin, or rolling a dice.

https://numpy.org/doc/stable/

https://numpy.org/doc/1.20/user/absolute\_beginners.html