DATA SCIENCE EAST AFRICA

INTRODUCTION TO NUMPY

Day 07 /20

NumPy is a python library used for working with arrays. It also has functions for working in domain of linear algebra, fourier transform, and matrices. NumPy was created in 2005 by Travis Oliphant. It is an open source project and you can use it freely. NumPy stands for Numerical Python.

Why Use Numpy:

NumPy aims to provide an array object that is up to 50x faster that traditional Python lists. The array object in NumPy is called ndarray, it provides a lot of supporting functions that make working with ndarray very easy.

Note: Arrays are very frequently used in data science, where speed and resources are very important.

Now, Let Understand why Numpy is faster than lists :

NumPy arrays are stored at one continuous place in memory unlike lists, so processes can access and manipulate them very efficiently. This behavior is called locality of reference in computer science.

This is the main reason why NumPy is faster than lists. Also it is optimized to work with latest CPU architectures.

Numpy Source Code : https://github.com/numpy/numpy

Installing NumPy:

Pip install numpy

Example:

```
import numpy

arr = numpy.array([5, 7, 9, 14, 25])

print(arr)
```

What do you think will be the output ?

More Topics:

- Creating Array
- Array Indexing
- Array Slicing
- Data Types
- Differences between Copy and View in NumPy
- Array Shape in NumPy
- NumPy Array Reshape
- NumPy Array Iterating
- NumPy Array Join
- NumPy Array Split
- NumPy Array Search
- NumPy Array Sort
- NumPy Array Filter
- NumPy Random
- NumPy ufunc

Best wishes,

Regards Data Science East Africa.