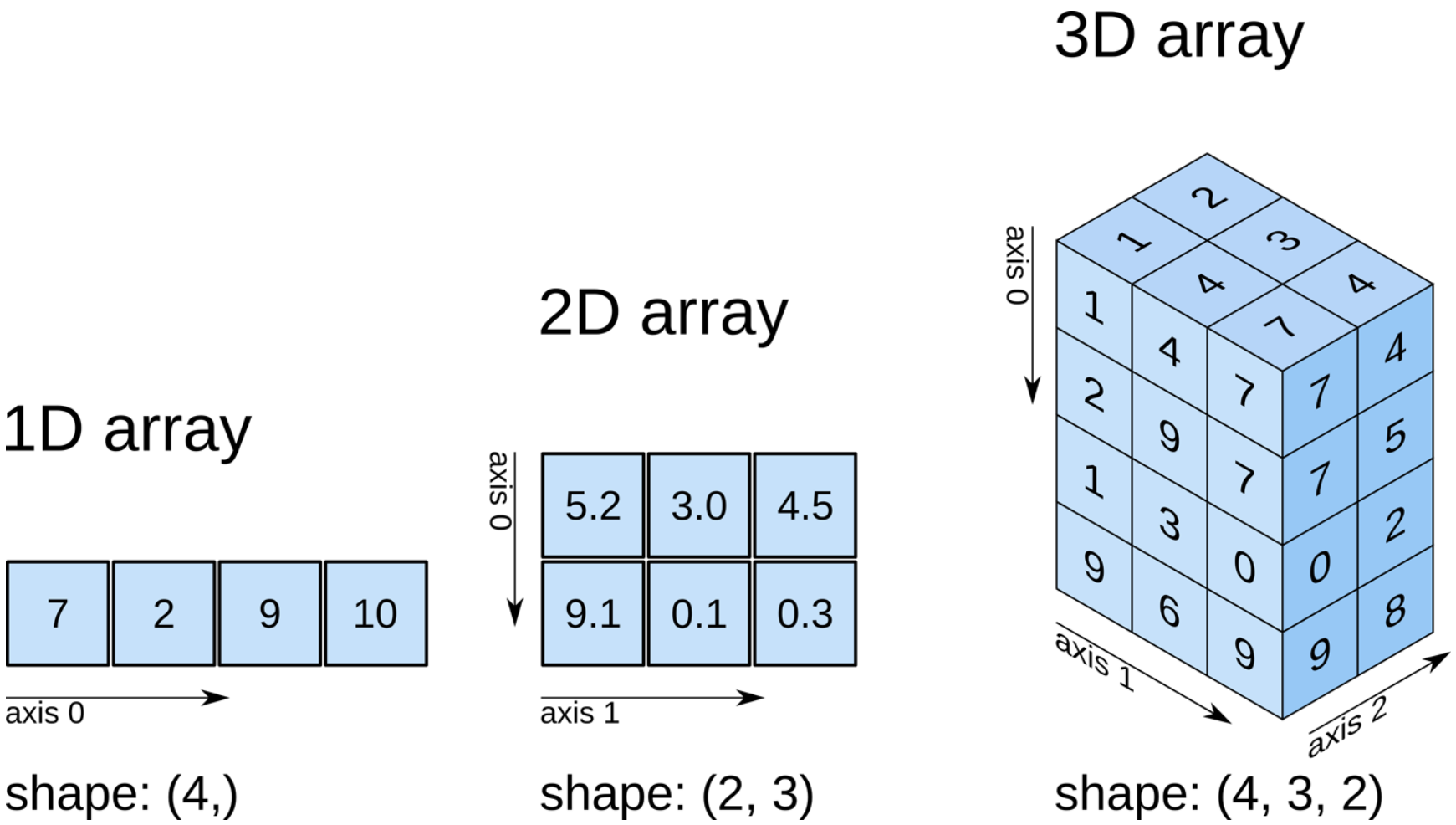
WHAT IS NUMPY ?

Numerical Python. *is a library for the Python programming language, adding support for large, multi-dimensional arrays and matrices, along with a large collection of high-level mathematical functions to operate on these arrays.*



WHY IS NUMPY FASTER THAN LISTS?

1. Fixed type

3	7	9
4	5	0
4	3	2

5 -> 00000101
binary

NumPy:

00000000 00000000 00000000 00000101
By default, Int-32

00000000 00000101
Can specify Int-16

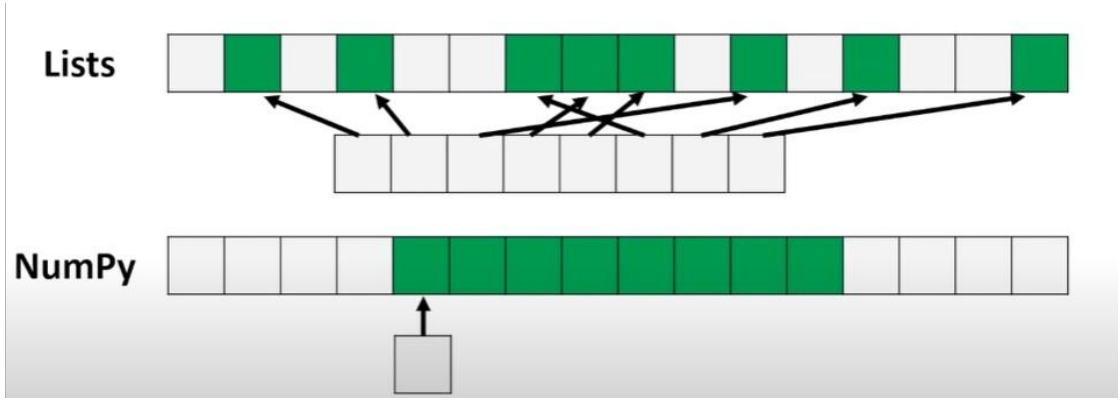
00000101
Can specify Int-8

Lists:

- Size
- Reference count
- Object type
- Object value

Total : 28 bytes

2.Contiguous memory



S.NO.	Contiguous Memory Allocation	Non-Contiguous Memory Allocation
1.	Contiguous memory allocation allocates consecutive blocks of memory to a file/process.	Non-Contiguous memory allocation allocates separate blocks of memory to a file/process.
2.	Faster in Execution.	Slower in Execution.
3.	It is easier for the OS to control.	It is difficult for the OS to control.
4.	Overhead is minimum as not much address translations are there while executing a process.	More Overheads are there as there are more address translations.
6.	It includes single partition allocation and multi-partition allocation.	It includes paging and segmentation.
7.	Wastage of memory is there.	No memory wastage is there.