15-02-2026

Agenda :

numpy

Tools of DS

ML

DL → CV

NLP

GenAI

Python → (level-1)

numpy, Pandas, Data visulation, EDA

Starts (level-2)

Algorithm

RAG

Agents

Numpy :

a = [0 1 2 3]

b = [0 1 2 4] - - - - -

[9999..]

[9999..]

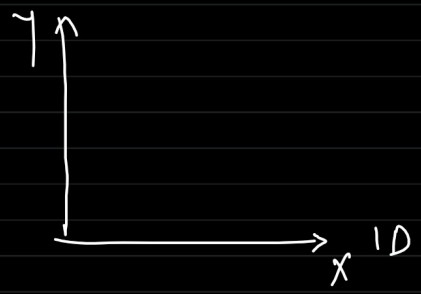
zip(a,b) → [(0,0), (1,1), (2,2) ...]

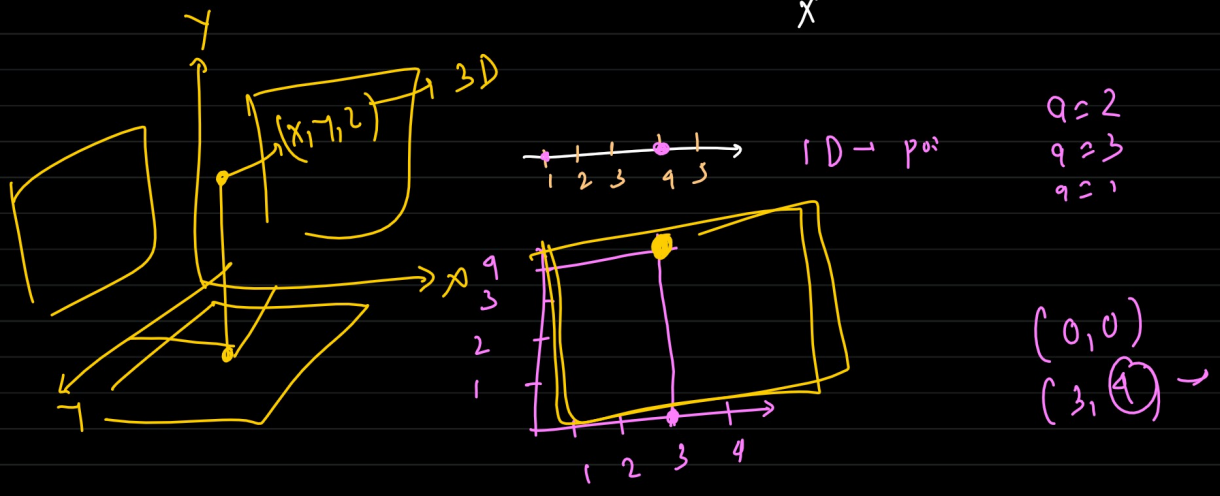
for

X,1 = [0,

[0, 2, 4, 6, ...]

Python → list → [1, 2, "3"] →





[1,2,3, 4,5] → 1D

[1,2,3] [4,5,6]

a = [1,2,3,4] → 1D

b = [[1,2,3], [2,3,4]] → 2D

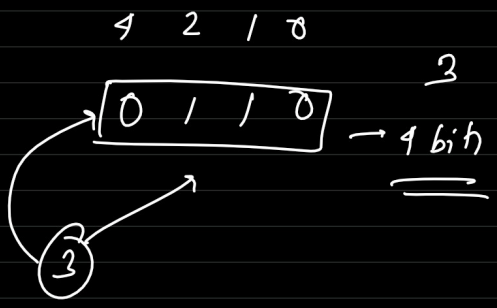
b1 = [[1,2,3]]

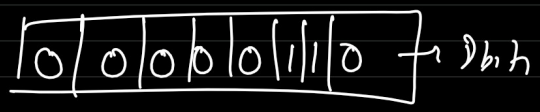
c = [[[[1], [1,2], [1,2,3]]]]

4D → 3D → 2D → 1D

- int
- float
- string

- np.int8
  np.int16
- np.int32
- np.float16
  :
  np.float128





int →

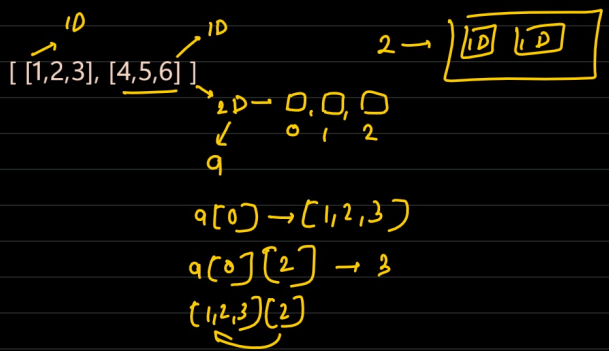
add →

numpy : add → int64

bool → in int8

LLM → 8bit → array

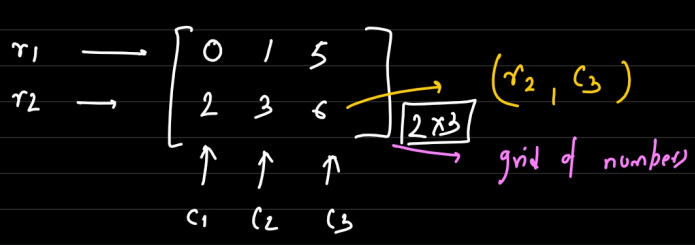
82.0



a[0] → [1,2,3]

a[0][2] → 3

[1,2,3][2]

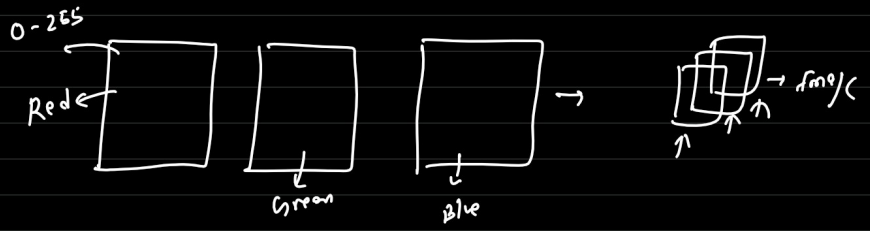


2x3 6

Image →

B/w → 0 255 (white)

2mp → 2 million pixels



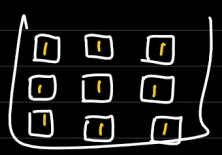

```
npz_3 = np.zeros((5,5,5))
```

5x5

5

[[ ]5x5
[ ]5x5
[ ]5x5
[ ]5x5
[ ]5x5]

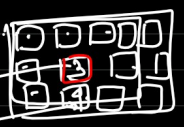
np.ones → (3,3)



1 1 1 ones 0 0
1 1 1 ones
1 1 1 ones

step- create matrix
step- fill with ones

→ array without initialization
→ empty array



None

a = 3

a = 4

np.ones → reserve a space for array of shape (x, y)
→ fill with ones

np.empty → reserve a space for array of shape (x, y)

[1,2,3] → shape → 1×3 —Transpose→ 3×1

1
2
3