

## Ground Rules

- Quest<sup>n</sup> tab for Quest<sup>n</sup>
- All the handwritten & code notebooks
- Pre-read | Post-read are mandatory
- ★ whatever we are doing
  - + industry perspective
  - + Machine Learning journey

Python  
=

full stack Data Scientist

Analytics  
world

→

Machine Learning (ML engineer)

AZ

MLOps

→ AI Scientist

$C_1 \rightarrow 5 \text{ lacs} / \text{Month}$   
 $C_2 \rightarrow 5 \text{ lacs} / \text{year}$   
 $\downarrow$   
 Infosys, ITR (3 year)

give me some characteristics  
 $C_1 \rightarrow$  Bangalore, Knightrider,  
 Knightrider tower,  
 Debt  $\rightarrow$  85% more

$\checkmark$  1 yr exp  $\rightarrow$  210K  
 2 yr exp  $\rightarrow$  220K  
 3 yr exp  $\rightarrow$  30K  
 1Mn professionals  
 10%  
 2%  
 yearly hike  
 1Mn Rows

data  $\rightarrow$  perfect

EDA  $\rightarrow$  Exploratory Data Analysis

Irrelevant noise from data  
 Outliers  
 20 yrs | Brek MBA | 8 more  
 20 yr  $\hat{=}$  3 lacs / month  
 Corrupt data  $\rightarrow$  10,000  $\rightarrow$  int  
 10K  $\rightarrow$  string (mean, mean)  
 Xomats  $\rightarrow$  4.1/5  $\rightarrow$  mean (4.1)

Python

Jungle → hunt → look  
↓  
serve

Xenon / Swiggy — | —

Library → 100% Data Scientists

[ Numpy | Pandas | Matplotlib | seaborn ]

Python

Numpy, pandas, tensorflow, PyTorch (facebook)

Llama (LLM)

↑ Libraries on top of it

Python (High level language)

↑

C++, C

little bit human friendly

(Low level language)

Assembly language

Machine

a → 10110  
b → 110010

1010110  
Binary

Semi-conductor — Chips

↓

Sand ( — )

electricity

sand

Notebook →

colab  
Google

Pycharm, VScode  
Anaconda

GPU  
free

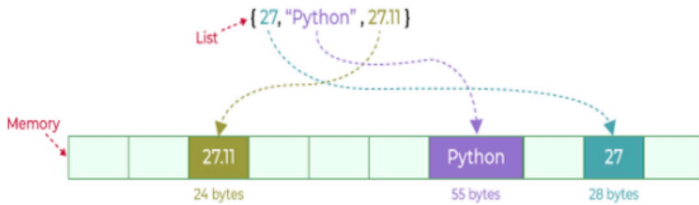
↑  
no dependency on hardware

Python  
Numpy  
Numerical

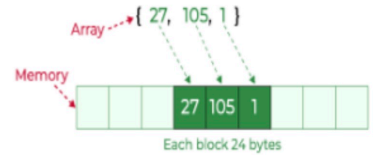
Python << Numpy (for numerical operations)

Parallel operations are possible

①



Python List



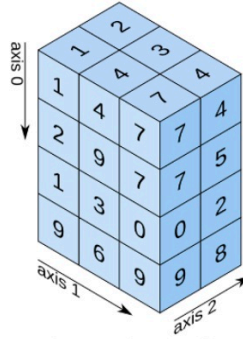
NumPy Array

②

Parallel in numpy

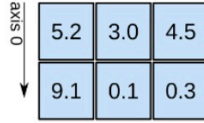
↳ Divide & Conquer → does task in parallel

## 3D array



shape: (4, 3, 2)

## 2D array



shape: (2, 3)

columns  
↓  
row

## 1D array



shape: (4,)

2D array  $\Rightarrow$   $x \begin{bmatrix} \uparrow & \text{row} \\ \text{columns} & \end{bmatrix}$

In a  $(m, n)$  array, what shape is returned by `arr[:, 0]`?

2D-Array