

Libraries

Big Data Analytics





How to import library in
program??

Already built-in library in IDE

- Math
- Array

Install from different sources

- Numpy
- Pandas
- Scikit-Learn
- Matplotlib
- Seaborn
- Scipy
- Tensorflow
- Keras
- OpenCv

Array

v/s

List

Array

- **Array need to import first**
- **All the element must be the same type.**
- **Need to mention the type of data type**

Access
variable[index_no]

Slicing
(access specific
range)

Add
Insert, append

Remove

Update

Numpy

- **Numpy standards for Numerical Python**
- **It is used for multi-dimensions matrices array.**
- **Faster than array**

How to install Numpy?

Pip install numpy

Ways to create a Numpy

Array()

zeros()

Linspace()

Arrange()

Logspace()

ones()

Numpy Array

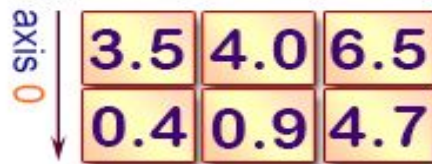
1D Array



axis 0

shape : (4,)

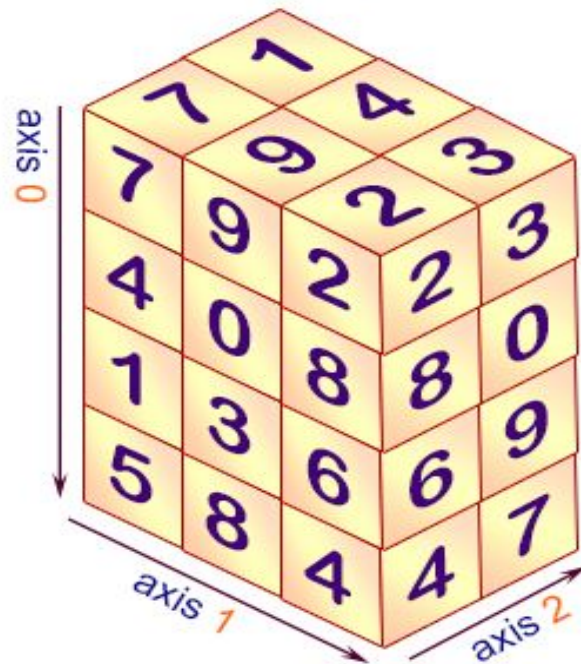
2D Array



axis 1

shape : (2, 3)

3D Array



shape : (4, 3, 2)

Methods in Numpy

Shape
(rows,ndim,col)

Index

Data type

Mean and Median

Slicing

Sort

A word cloud on a dark gray background featuring various NumPy functions and related terms. The words are in different colors and sizes, with 'Numpy' and 'Python' being the largest. Other prominent words include 'Numericals', 'Operations', 'np.arange()', 'np.linspace()', 'np.sum()', 'np.max()', 'np.where()', 'np.sign()', 'np.median()', 'np.square()', 'np.random()', 'np.absolute()', 'np.searchsorted()', 'np.randint()', 'np.cumsum()', 'np.ones()', 'np.mean()', 'np.argmax()', 'np.eye()', 'np.zeros()', 'scipy', and 'np.sign()'.

np.random() np.absolute()
np.searchsorted() np.randint()
Numericals np.cumsum()
np.ones() np.arange() np.sum()
np.mean() Numpy np.max()
Operations Python scipy
np.argmax() np.where()
np.eye() np.linspace() np.sign()
np.zeros() np.median()
np.square()

Applications

- **In mathematics (linear Algebra, Fourier transform, Matrices)**
- **Statistics and Probability**
- **Disaster Management**
- **Mechanical Vibration**
- **Physics**



pandas



Why do we need to use pandas?



**Create
DataFrame, Series**

**EDA and data
wrangling**

Read file

Data fill

Saving data

Data Visualization

Create Dataframe

Dictionary to list

Tuple to Tuple

List to dictionary

List to list

Dictionary to tuple

Slicing the dataframe

LOC Method

- Label Based rows and columns
- To access rows
`loc[A:B]`

iloc Method

Integer position based rows and columns
`iloc[1:2]`