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**Numpy:**

**🡪** It is a Python library that provides a multidimensional array object, various derived objects (such as masked arrays and matrices), and an assortment of routines for fast operations on arrays, including mathematical, logical, shape manipulation, sorting, selecting, I/O, discrete Fourier transforms, basic linear algebra, basic statistical operations, random simulation and much more.

## # Converting Python sequences to NumPy Arrays

🡪NumPy arrays can be defined using Python sequences such as lists and tuples. Lists and tuples are defined using [...] and (...), respectively. Lists and tuples can define ndarray creation:

* a list of numbers will create a 1D array,
* a list of lists will create a 2D array,
* further nested lists will create higher-dimensional arrays. In general, any array object is called an **ndarray** in NumPy.

# Appending elements into array

->To add multiple values.

#Insert an element into array

->based on index value to add element into array

#syntax->np.insert(array\_to\_be\_modified, index\_position, values in list ..)

->to insert multiple values.

#Deleting element from an array

-> To remove an element from a NumPy array:

**->Specify** the index of the element to remove.

->**Call** the **numpy.delete()** function on the array for the given index.

#Filters in numpy

->for and operation using &

->for or operation using !

#To replace value in an array

#To create 1d array full of 0

#To create 2d array full of 0

#syntax-->np.zeros([no\_of\_rows,no\_of\_col])

#To create array full of 1

#To create 2d array full of 1

#syntax-->np.ones([no\_of\_rows,no\_of\_col])

#Type convert ele in array

#To find numpy data type of ele present in array-->dtype

#type(np\_ar)

#We can convert values in numpy array into various bits

->they are

->int8,int16,int32,int64

->float16,flaot32,float64

->complex64,complex128

->uint16,uint32