

## NumPy

### Interview Questions:

1. Numpy array vs list
2. Numpy array vs series
3. What is an array?
4. How to add and remove elements from array?
5. How to stack an array depth wise?
6. what all different stacking? (then later asked whether d.stack available)
7. what is the Flatter method?
8. What is Broadcasting in Numpy?
9. How to Transposing a Numpy Array?
10. Explain rules of Broadcasting in Numpy?
11. What is the difference between range() and arange() functions in Python?
12. How do you get the dimension of a Numpy array?
13. Create a Numpy array filled with all ones
14. Create a Numpy array filled with all zeros
15. Where is NumPy used?

### List of some NumPy functions:

Sl.No.	Functions	Purpose
1	<code>np.array([1,2,3])</code>	1 dimensional array
2	<code>np.array([(1,2,3),(4,5,6)])</code>	2 dimensional array
3	<code>np.zeros(3)</code>	1D array of length 3 all values 0
4	<code>np.ones((3,4))</code>	3x4 array with all values 1
5	<code>np.eye(5)</code>	5x5 array of 0 with 1 on diagonal (Identity matrix)
6	<code>np.arange(0,10,3)</code>	Array of values from 0 to less than 10 with step 3
7	<code>np.random.rand(4,5)</code>	4x5 array of random floats between 0–1
8	<code>np.random.randint(5,size=(2,3))</code>	2x3 array with random ints between 0–4
9	<code>arr.size</code>	Returns number of elements in arr
10	<code>arr.shape</code>	Returns dimensions of arr (rows,columns)
11	<code>arr.dtype</code>	Returns type of elements in arr
12	<code>arr.astype(dtype)</code>	Convert arr elements to type dtype
13	<code>np.copy(arr)</code>	Copies arr to new memory
14	<code>arr.sort()</code>	Sorts arr
15	<code>arr.resize((5,6))</code>	Changes arr shape to 5x6 and fills new values with 0
16	<code>arr.reshape(3,4)</code>	Reshapes arr to 3 rows, 4 columns without changing data
17	<code>np.concatenate((arr1,arr2),axis=0)</code>	Adds arr2 as rows to the end of arr1
18	<code>np.concatenate((arr1,arr2),axis=1)</code>	Adds arr2 as columns to end of arr1
19	<code>np.split(arr,3)</code>	Splits arr into 3 sub-arrays
20	<code>np.hsplit(arr,5)</code>	Splits arr horizontally on the 5th index
21	<code>np.add(arr,1)</code>	Add 1 to each array element
22	<code>np.subtract(arr,2)</code>	Subtract 2 from each array element
23	<code>np.multiply(arr,3)</code>	Multiply each array element by 3
24	<code>np.divide(arr,4)</code>	Divide each array element by 4 (returns np.nan for division by zero)
25	<code>np.power(arr,5)</code>	Raise each array element to the 5th power
26	<code>np.add(arr1,arr2)</code>	Elementwise add arr2 to arr1
27	<code>np.subtract(arr1,arr2)</code>	Elementwise subtract arr2 from arr1
28	<code>np.multiply(arr1,arr2)</code>	Elementwise multiply arr1 by arr2
29	<code>np.divide(arr1,arr2)</code>	elementwise divide arr1 by arr2
30	<code>np.floor(arr)</code>	Rounds down to the nearest int
31	<code>np.round(arr)</code>	Rounds to the nearest int
32	<code>np.abs(arr)</code>	Absolute value of each element in the array

33	len(a)	Length of array
34	np.exp(b)	exponentiation
35	np.transpose(b)	Transposing Array
36	b.ravel()	Flatten the array
37	np.append(h,g)	Append items to an array
38	np.hsplit(a,3)	Split the array horizontally at the 3rd index
39	np.vsplit(c,2)	Split the array vertically at the 2nd index