

NumPy provides a wide range of functions for efficient numerical operations on arrays in Python

1. **np.array(x)**: Creates a NumPy array from a Python object x.
2. **type(x)**: Returns the type of the object x.
3. **np.zeros()**: Creates an empty NumPy array with all elements set to zero.
4. **np.ones()**: Creates an empty NumPy array with all elements set to one.
5. **np.random.rand()**: Generates a random float between 0 and 1.
6. **np.random.rand??**: Generates a random array of shape (?,?) with values between 0 and 1.
7. **np.random.randint??**: Generates random integers between low and high (inclusive) with shape (?,?).
8. **np.random.choice([])**: Selects k elements randomly from an empty array without replacement.
9. **np.full((3,4),10)**: Creates a full array of shape (3,4) with value 10.
10. **np.eye()**: Creates an identity matrix of size n (default: 1).
11. **np.arange()**: Generates an array of integers from start to stop (exclusive) with step size step.
12. **np.linspace()**: Generates an array of num evenly spaced values between start and stop (inclusive).
13. **x.ndim()**: Returns the number of dimensions of the array x.
14. **x.shape()**: Returns a tuple containing the dimensions of the array x.
15. **x.reshape()**: Reshapes the array x into a new shape.
16. **x.size()**: Returns the number of elements in the array x.
17. **np.transpose()**: Transposes the array x.
18. **np.vstack()**: Stacks arrays vertically.
19. **np.hstack()**: Stacks arrays horizontally.
20. **np.concatenate()**: Concatenates arrays along an existing axis.
21. **np.sin(x)**: Calculates the sine of the elements in x.
22. **np.cos(x)**: Calculates the cosine of the elements in x.
23. **np.sqrt(x)**: Calculates the square root of the elements in x.
24. **np.mean(x)**: Calculates the mean of the elements in x.
25. **np.median(x)**: Calculates the median of the elements in x.
26. **np.std(x)**: Calculates the standard deviation of the elements in x.
27. **np.min()**: Returns the minimum value in the array.
28. **np.max()**: Returns the maximum value in the array.
29. **np.sort(x, kind = 'mergesort')**: Sorts the elements in x in ascending order using the specified sorting algorithm.
30. **np.dot(x,y)**: Calculates the dot product of x and y.
31. **np.full()**: Creates a new array with all elements set to a given value.
32. **np.diag([])**: Creates a diagonal matrix with the given elements on the diagonal.
33. **x.dtype()**: Returns the data type of the elements in x.
34. **x.flatten()**: Flattens the multi-dimensional array x into a one-dimensional array.
35. **np.datetime64()**: Creates a datetime64 object with the given time value.
36. **np.linalg.lstsq()**: Solves a system of linear equations using least squares.
37. **np.add()**: Adds two arrays element-wise.
38. **np.sum(x)**: Calculates the sum of the elements in x.