Numpy Cheat Sheet

Category	Function	Syntax Example	Description
Array Creation	np.array()	np.array([1, 2, 3])	Create an array from a list or tuple.
Array Creation	np.zeros()	np.zeros(5)	Create an array filled with zeros.
Array Creation	np.ones()	np.ones((2, 3))	Create an array filled with ones.
Array Creation	np.empty()	np.empty((2, 2))	Create an uninitialized array.
Array Creation	np.full()	np.full((2, 2), 5)	Create an array filled with a specified value.
Array Creation	np.arange()	np.arange(10)	Create values within a specified range.
Array Creation	np.linspace()	np.linspace(0, 1, 5)	Create evenly spaced values between two points.
Array Creation	np.eye()	np.eye(3)	Create an identity matrix.
Array Creation	np.frombuffer()	np.frombuffer(b"12345", dtype=np.uint8)	Create an array from a buffer.
Array Manipulation	np.reshape()	arr.reshape(2, 3)	Reshape an array without changing its data.
Array Manipulation	np.ravel()	arr.ravel()	Flatten an array.
Array Manipulation	np.transpose()	arr.T	Transpose the axes of an array.
Array Manipulation	np.concatenate()	np.concatenate((arr1, arr2))	Join arrays along an existing axis.
Array Manipulation	np.hstack()	np.hstack((arr1, arr2))	Stack arrays horizontally.
Array Manipulation	np.vstack()	np.vstack((arr1, arr2))	Stack arrays vertically.
Array Manipulation	np.split()	np.split(arr, 3)	Split an array into multiple sub-arrays.
Array Manipulation	np.append()	np.append(arr, [4, 5])	Append values to the end of an array.
Array Manipulation	np.insert()	np.insert(arr, 1, [1.5])	Insert values into an array at a given position.
Mathematical Functions	np.add()	np.add(arr1, arr2)	Element-wise addition of arrays.
Mathematical Functions	np.subtract()	np.subtract(arr1, arr2)	Element-wise subtraction of arrays.
Mathematical Functions	np.multiply()	np.multiply(arr1, arr2)	Element-wise multiplication of arrays.
Mathematical Functions	np.divide()	np.divide(arr1, arr2)	Element-wise division of arrays.
Mathematical Functions	np.power()	np.power(arr, 2)	Raise array elements to a power.
Mathematical Functions	np.sqrt()	np.sqrt(arr)	Compute the square root of array elements.
Mathematical Functions	np.sin()	np.sin(arr)	Compute the sine of array elements.
Statistical Functions	np.mean()	np.mean(arr)	Compute the mean (average) of elements.
Statistical Functions	np.median()	np.median(arr)	Compute the median of elements.
Statistical Functions	np.std()	np.std(arr)	Compute the standard deviation of elements.
Statistical Functions	np.var()	np.var(arr)	Compute the variance of elements.
Statistical Functions	np.percentile()	np.percentile(arr, 50)	Compute the percentile of elements.
Linear Algebra	np.dot()	np.dot(arr1, arr2)	Compute the dot product of two arrays.
Linear Algebra	np.linalg.inv()	np.linalg.inv(arr)	Compute the inverse of a matrix.
Linear Algebra	np.linalg.eig()	np.linalg.eig(arr)	Compute eigenvalues and eigenvectors of a matrix.
Linear Algebra	np.linalg.det()	np.linalg.det(arr)	Compute the determinant of a matrix.

Random Sampling	np.random.rand()	np.random.rand(5)	Generate random numbers from a uniform distribution.
Random Sampling	np.random.randn()	np.random.randn(5)	Generate random numbers from a standard normal distribution.
Random Sampling	np.random.randint()	np.random.randint(0, 10, 5)	Generate random integers within a range.
Random Sampling	np.random.choice()	np.random.choice([1, 2, 3], 5)	Randomly select elements from an array.
Random Sampling	np.random.seed()	np.random.seed(42)	Set the seed for reproducibility of random numbers.
Utility Functions	np.shape()	arr.shape	Get the shape of an array.
Utility Functions	np.size()	arr.size	Get the total number of elements in an array.
Utility Functions	np.ndim()	arr.ndim	Get the number of dimensions of an array.
Utility Functions	np.copy()	np.copy(arr)	Create a copy of an array.
Sorting and Searching	np.sort()	np.sort(arr)	Sort the elements of an array.
Sorting and Searching	np.argsort()	np.argsort(arr)	Get the indices that would sort an array.
Sorting and Searching	np.searchsorted()	np.searchsorted(arr, 3)	Find indices where elements should be inserted to maintain order.
Set Operations	np.unique()	np.unique(arr)	Find the unique elements of an array.
Set Operations	np.intersect1d()	np.intersect1d(arr1, arr2)	Find the intersection of two arrays.
Set Operations	np.setdiff1d()	np.setdiff1d(arr1, arr2)	Find the set difference of two arrays.