

NumPy array basics

<code>np.array([1,2,3])</code>	Creates a 1D array with values 1, 2, 3. (shape 1x3)
<code>np.array([(1,2,3), (4,5,6)])</code>	Creates 2D array of shape 2x3 with values 1,2,3,4,5,6
<code>np.array([(1,2,3), (4,5,6), (7,8,9), (10,11,12)])</code>	Creates a 3D array with shape 4x3
<code>np.zeros(3,4)</code>	Creates a 3x4 array of zeros
<code>np.arange(1,60,5)</code>	Creates a 1D array of values 1 through 60 at steps of 5
<code>a.reshape(2,3,4)</code>	Reshapes array a into an array of shape 2x3x4
<code>a.shape</code>	To get the shape of the array a

Subsetting

<code>a[0]</code>	Gets the 0th element in 1D array a
<code>b[0,0]</code>	Gets the 0th element in 2D array b
<code>c[0,0,0]</code>	Gets the 0th element in 3D array c
<code>c[9,0,0]</code>	Gets the element which is the 0th element in the 0th row in the 9th depth

Slicing arrays

1D arrays

<code>a[:]</code>	Selects everything
<code>a[2:5]</code>	Selects the 2nd through the 4th rows (does not include the 5th row)

2D arrays

<code>b[:,:]</code>	Selects all rows and all columns
<code>b[:,0]</code>	Selects all rows, and the zeroth column
<code>b[0,:]</code>	Selects the zeroth row, and all columns in that row
<code>b[0:2,:]</code>	Selects the zeroth and first row, but NOT the second. It includes all the columns in that row
<code>b[0:2,0:2]</code>	Selects the zeroth and first row, and the zeroth and first column

3D arrays

<code>c[:, :, :]</code>	Selects all rows and columns on all depths
<code>c[0, :, :]</code>	Selects the everything in the first depth
<code>c[:, 0, :]</code>	Selects the first row of each depth
<code>c[:, :, 0]</code>	Selects the first column of each depth

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Not published yet.

Last updated 21st October, 2019.

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