PY0101EN-5.1_notebook_quizz_numpy1d

October 17, 2019

Get to Know a numpy Array

cast the following list to a numpy array:

[ ]:
```
import numpy as np
a=np.array([1,2,3,4,5])
a
```

[ ]:
```
array([1, 2, 3, 4, 5])
```

1) type using the function type

[13]:
```
type(a)
```

[13]:
```
numpy.ndarray
```

2) the shape of the array

[15]:
```
a.shape
```

[15]:
```
(5,)
```

3) the type of data in the array

[10]:
```
b=np.array([2,8,5,10,7])
type(b)
b.dtype
```

[10]:
```
dtype('int64')
```

4) find the mean of the array

[17]:
```
c=b.mean()
c
```

[17]:
```
6.4
```

Creating and Plotting Functions

1) create the following functions using the numpy array x

$$y = sin(x) + 2$$

[20]:
```
x=np.linspace(0,2*np.pi,100)
y=np.sin(x)+2
y
```

[20]:
```
array([2.        , 2.06342392, 2.12659245, 2.18925124, 2.25114799,
       2.31203345, 2.37166246, 2.42979491, 2.48619674, 2.54064082,
       2.59290793, 2.64278761, 2.69007901, 2.73459171, 2.77614646,
       2.81457595, 2.84972543, 2.88145336, 2.909632  , 2.93414786,
       2.95490224, 2.97181157, 2.98480775, 2.99383846, 2.99886734,
       2.99987413, 2.99685478, 2.98982144, 2.97880245, 2.96384216,
       2.94500082, 2.92235429, 2.89599377, 2.8660254 , 2.83256985,
       2.79576184, 2.75574957, 2.71269417, 2.666769  , 2.61815899,
       2.56705986, 2.51367739, 2.45822652, 2.40093054, 2.34202014,
       2.28173256, 2.22031053, 2.1580014 , 2.09505604, 2.03172793,
       1.96827207, 1.90494396, 1.8419986 , 1.77968947, 1.71826744,
       1.65797986, 1.59906946, 1.54177348, 1.48632261, 1.43294014,
       1.38184101, 1.333231  , 1.28730583, 1.24425043, 1.20423816,
       1.16743015, 1.1339746 , 1.10400623, 1.07764571, 1.05499918,
       1.03615784, 1.02119755, 1.01017856, 1.00314522, 1.00012587,
       1.00113266, 1.00616154, 1.01519225, 1.02818843, 1.04509776,
       1.06585214, 1.090368  , 1.11854664, 1.15027457, 1.18542405,
       1.22385354, 1.26540829, 1.30992099, 1.35721239, 1.40709207,
       1.45935918, 1.51380326, 1.57020509, 1.62833754, 1.68796655,
       1.74885201, 1.81074876, 1.87340755, 1.93657608, 2.        ])
```

2) plot the function

[21]:
```
import matplotlib.pyplot as plt
%matplotlib inline

plt.plot(x,y)
```

[21]:
```
[<matplotlib.lines.Line2D at 0x7efe501e46a0>]
```