

NUMPY-PIL-MATPLOTLIB

NP,Plt,Pill.ipynb

```
In [1]: import numpy as np
```

```
In [2]: ones_arr = np.ones((3,3))
ones_arr
```

```
Out[2]: array([[1., 1., 1.],
 [1., 1., 1.],
 [1., 1., 1.]])
```

```
In [3]: ones_arr = np.ones((5,5) , dtype = int)
ones_arr
```

```
Out[3]: array([[1, 1, 1, 1, 1],
 [1, 1, 1, 1, 1],
 [1, 1, 1, 1, 1],
 [1, 1, 1, 1, 1],
 [1, 1, 1, 1, 1]])
```

```
In [4]: zeros_arr = np.zeros((3,3) , dtype= int)
zeros_arr
```

```
Out[4]: array([[0, 0, 0],
 [0, 0, 0],
 [0, 0, 0]])
```

```
In [5]: ones_arr
```

```
Out[5]: array([[1, 1, 1, 1, 1],
 [1, 1, 1, 1, 1],
 [1, 1, 1, 1, 1],
 [1, 1, 1, 1, 1],
 [1, 1, 1, 1, 1]])
```

```
In [6]: zeros_arr
```

```
Out[6]: array([[0, 0, 0],
 [0, 0, 0],
 [0, 0, 0]])
```

```
In [7]: ones_arr
```

```
Out[7]: array([[1, 1, 1, 1, 1],
 [1, 1, 1, 1, 1],
 [1, 1, 1, 1, 1],
 [1, 1, 1, 1, 1],
 [1, 1, 1, 1, 1]])
```

```
In [8]: ones_arr * 255
```

```
Out[8]: array([[255, 255, 255, 255, 255],  
               [255, 255, 255, 255, 255],  
               [255, 255, 255, 255, 255],  
               [255, 255, 255, 255, 255],  
               [255, 255, 255, 255, 255]])
```

```
In [9]: zeros_arr * 255
```

```
Out[9]: array([[0, 0, 0],  
               [0, 0, 0],  
               [0, 0, 0]])
```

```
In [10]: zeros_arr
```

```
Out[10]: array([[0, 0, 0],  
               [0, 0, 0],  
               [0, 0, 0]])
```

```
In [11]: import matplotlib.pyplot as plt
```

```
In [12]: %matplotlib inline
```

```
In [13]: from PIL import Image #PIL -- python imaging Library
```

```
In [14]: dog_img = Image.open(r"C:\Users\Hanshu\Desktop\cute_dog.png")  
dog_img
```

```
Out[14]:
```



```
In [15]: type(dog_img)
```

```
Out[15]: PIL.JpegImagePlugin.JpegImageFile
```

```
In [16]: "C:\Users\Hanshu\Downloads\trial3.png"
```

```
Cell In[16], line 1
```

```
  "C:\Users\Hanshu\Downloads\trial3.png"
```

```
^
```

```
SyntaxError: (unicode error) 'unicodeescape' codec can't decode bytes in position  
2-3: truncated \UXXXXXXXXX escape
```

```
In [17]: trial3 = Image.open(r"C:\Users\Hanshu\Downloads\trial3.png")  
type(trial3)
```

```
Out[17]: PIL.JpegImagePlugin.JpegImageFile
```

```
In [18]: trial3 = Image.open(r"C:\Users\Hanshu\Downloads\trial3.png")
type(trial3)
```

```
Out[18]: PIL.JpegImagePlugin.JpegImageFile
```

```
In [19]: type(dog_img)
```

```
Out[19]: PIL.JpegImagePlugin.JpegImageFile
```

```
In [20]: dog_img.shape
```

```
-----  
AttributeError                                                 Traceback (most recent call last)  
Cell In[20], line 1  
----> 1 dog_img.shape  
  
AttributeError: 'JpegImageFile' object has no attribute 'shape'
```

```
In [21]: plt.imshow(dog_img)
```

```
Out[21]: <matplotlib.image.AxesImage at 0x1ee6041f5c0>
```

```
In [22]: plt.imshow(horse_img)
```

```
-----  
NameError                                                 Traceback (most recent call last)  
Cell In[22], line 1  
----> 1 plt.imshow(horse_img)  
  
NameError: name 'horse_img' is not defined
```

```
In [23]: dog_red = dog_img.copy()
```

```
In [24]: dog_red
```

```
Out[24]:
```



```
In [25]: dog_img = dog_red
```

```
In [26]: plt.imshow(dog_red)
```

```
Out[26]: <matplotlib.image.AxesImage at 0x1ee60866ff0>
```

```
In [27]: dog_red.shape()
```

```
-----  
AttributeError                                     Traceback (most recent call last)  
Cell In[27], line 1  
----> 1 dog_red.shape()  
  
AttributeError: 'Image' object has no attribute 'shape'
```

```
In [28]: plt.imshow(dog_red[:, :, 0])
```

```
-----  
TypeError                                     Traceback (most recent call last)  
Cell In[28], line 1  
----> 1 plt.imshow(dog_red[:, :, 0])  
  
TypeError: 'Image' object is not subscriptable
```

```
In [29]: dog_red[:, :, 0]
```

```
-----  
TypeError                                     Traceback (most recent call last)  
Cell In[29], line 1  
----> 1 dog_red[:, :, 0]  
  
TypeError: 'Image' object is not subscriptable
```

```
In [30]: plt.imshow(dog_red[:, :, 0], cmap = 'Greys')
```

```
-----  
TypeError                                     Traceback (most recent call last)  
Cell In[30], line 1  
----> 1 plt.imshow(dog_red[:, :, 0], cmap = 'Greys')  
  
TypeError: 'Image' object is not subscriptable
```

```
In [31]: plt.imshow(dog_red[:, :, 1], cmap = 'greys')
```

```
-----  
TypeError                                     Traceback (most recent call last)  
Cell In[31], line 1  
----> 1 plt.imshow(dog_red[:, :, 1], cmap = 'greys')  
  
TypeError: 'Image' object is not subscriptable
```

```
In [32]: plt.imshow(dog_red[:, :, 2], cmap = 'grey')
```

```
-----  
TypeError                                     Traceback (most recent call last)  
Cell In[32], line 1  
----> 1 plt.imshow(dog_red[:, :, 2], cmap = 'grey')  
  
TypeError: 'Image' object is not subscriptable
```

```
In [33]: dog_red_arr = np.array(dog_red)  
dog_red_arr
```

```
Out[33]: array([[[ 17,  17,   7],
   [ 17,  17,   7],
   [ 17,  17,   7],
   ...,
   [ 11,  15,   1],
   [ 11,  15,   1],
   [ 11,  15,   1]],

   [[ 17,  17,   7],
   [ 17,  17,   7],
   [ 17,  17,   7],
   ...,
   [ 12,  16,   2],
   [ 12,  16,   2],
   [ 12,  16,   2]],

   [[ 17,  17,   7],
   [ 17,  17,   7],
   [ 17,  17,   7],
   ...,
   [ 13,  17,   3],
   [ 13,  17,   3],
   [ 13,  17,   3]],

   ...,

   [[108, 108,  74],
   [108, 108,  74],
   [108, 108,  74],
   ...,
   [138, 112,  89],
   [137, 113,  89],
   [137, 113,  89]],

   [[111, 111,  77],
   [111, 111,  77],
   [111, 111,  77],
   ...,
   [136, 110,  87],
   [137, 113,  89],
   [137, 113,  89]],

   [[114, 114,  80],
   [113, 113,  79],
   [113, 113,  79],
   ...,
   [135, 109,  86],
   [136, 112,  88],
   [137, 113,  89]]], dtype=uint8)
```

```
In [34]: plt.imshow(dog_red_arr[:, :, 0], cmap = 'grey')
```

```
Out[34]: <matplotlib.image.AxesImage at 0x1ee6041c8c0>
```

```
In [35]: dog_red[:, :, 0]
```

```
-----  
TypeError                                         Traceback (most recent call last)  
Cell In[35], line 1  
----> 1 dog_red[:, :, 0]  
  
TypeError: 'Image' object is not subscriptable
```

```
In [36]: dog_red[:, :, 1]
```

```
-----  
TypeError                                         Traceback (most recent call last)  
Cell In[36], line 1  
----> 1 dog_red[:, :, 1]  
  
TypeError: 'Image' object is not subscriptable
```

```
In [37]: dog_red[:, :, 2]
```

```
-----  
TypeError                                         Traceback (most recent call last)  
Cell In[37], line 1  
----> 1 dog_red[:, :, 2]  
  
TypeError: 'Image' object is not subscriptable
```

```
In [38]: dog_red[:, :, 1] = 0
```

```
-----  
TypeError                                         Traceback (most recent call last)  
Cell In[38], line 1  
----> 1 dog_red[:, :, 1] = 0  
  
TypeError: 'Image' object does not support item assignment
```

```
In [39]: dog_red[:, :, 1]
```

```
-----  
TypeError                                         Traceback (most recent call last)  
Cell In[39], line 1  
----> 1 dog_red[:, :, 1]  
  
TypeError: 'Image' object is not subscriptable
```

```
In [40]: plt.imshow(dog_red)
```

```
Out[40]: <matplotlib.image.AxesImage at 0x1ee6149e360>
```

```
In [41]: dog_red[:, :, 2]
```

```
-----  
TypeError                                         Traceback (most recent call last)  
Cell In[41], line 1  
----> 1 dog_red[:, :, 2]  
  
TypeError: 'Image' object is not subscriptable
```

```
In [42]: dog_red[:, :, 2] = 0
```

```
-----  
TypeError                                         Traceback (most recent call last)  
Cell In[42], line 1  
----> 1 dog_red[:, :, 2] = 0  
  
TypeError: 'Image' object does not support item assignment
```

In [43]: `dog_red[:, :, 2]`

```
-----  
TypeError                                         Traceback (most recent call last)  
Cell In[43], line 1  
----> 1 dog_red[:, :, 2]  
  
TypeError: 'Image' object is not subscriptable
```

In [44]: `plt.imshow(dog_red)`

Out[44]: <matplotlib.image.AxesImage at 0x1ee64024770>

In [45]: `dog_arr`

```
-----  
NameError                                         Traceback (most recent call last)  
Cell In[45], line 1  
----> 1 dog_arr  
  
NameError: name 'dog_arr' is not defined
```

In [46]: `dog_red`

Out[46]:



In [47]: `dog_img`

Out[47]:



In [48]: `type(arr1)`

```
NameError Traceback (most recent call last)
Cell In[48], line 1
----> 1 type(arr1)

NameError: name 'arr1' is not defined
```

In [49]: `arr1.shape`

```
NameError Traceback (most recent call last)
Cell In[49], line 1
----> 1 arr1.shape

NameError: name 'arr1' is not defined
```

In [50]: `plt.imshow(arr1)`

```
NameError Traceback (most recent call last)
Cell In[50], line 1
----> 1 plt.imshow(arr1)

NameError: name 'arr1' is not defined
```

In [51]: `horse_img1 = arr1.copy()`

```
NameError Traceback (most recent call last)
Cell In[51], line 1
----> 1 horse_img1 = arr1.copy()

NameError: name 'arr1' is not defined
```

In [52]: `dog_img1[:, :, 0] = 0`

```
NameError Traceback (most recent call last)
Cell In[52], line 1
----> 1 dog_img1[:, :, 0] = 0

NameError: name 'dog_img1' is not defined
```

```
In [53]: plt.imshow(dog_img1)
```

```
NameError Traceback (most recent call last)
Cell In[53], line 1
----> 1 plt.imshow(dog_img1)

NameError: name 'dog_img1' is not defined
```

```
In [54]: dog_img1[:, :, 1]
```

```
NameError Traceback (most recent call last)
Cell In[54], line 1
----> 1 dog_img1[:, :, 1]

NameError: name 'dog_img1' is not defined
```

```
In [55]: dog_img1[:, :, 1] = 0
```

```
NameError Traceback (most recent call last)
Cell In[55], line 1
----> 1 dog_img1[:, :, 1] = 0

NameError: name 'dog_img1' is not defined
```

```
In [56]: plt.imshow(dog_img1)
```

```
NameError Traceback (most recent call last)
Cell In[56], line 1
----> 1 plt.imshow(dog_img1)

NameError: name 'dog_img1' is not defined
```

```
In [ ]:
```