

image-to-array-using-matplotlib

June 4, 2025

Image to array

```
[35]: import numpy as np  
import matplotlib.pyplot as plt
```

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

```
[37]: ones_arr
```

```
[37]: 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]])
```

```
[38]: ones_arr*255
```

```
[38]: 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]])
```

```
[39]: import matplotlib.pyplot
```

```
[40]: from PIL import Image #import Image
```

```
[41]: dragon_img = Image.open(r'C:\Users\Bhavesh Govind Bhork\OneDrive\Desktop\dragon.  
↪jpg') #r = RAW string
```

```
[42]: dragon_img
```

```
[42]:
```



```
[43]: type(dragon_img) # data type of dragon_img is PIL Image that is Python Imaging  
↳ Library
```

```
[43]: PIL.JpegImagePlugin.JpegImageFile
```

```
[44]: dragon_arr = np.asarray(dragon_img) # convert PIL Image to numpy array # every  
↳ image can be converted to numpy array  
dragon_arr
```

```
[44]: array([[31, 61, 87],  
           [31, 61, 87],  
           [31, 61, 87],  
           ...,  
           [ 3, 15, 39],  
           [ 3, 15, 39],  
           [ 3, 15, 39]],  
  
          [[31, 61, 87],  
           [31, 61, 87],  
           [31, 61, 87],  
           ...,  
           [ 3, 15, 39],  
           [ 3, 15, 39],  
           [ 3, 15, 39]],  
  
          [[31, 61, 87],
```

```
[31, 61, 87],  
[31, 61, 87],  
...,  
[ 3, 15, 39],  
[ 3, 15, 39],  
[ 3, 15, 39]],  
  
...,  
  
[[ 2, 14, 38],  
[ 2, 14, 38],  
[ 2, 14, 38],  
...,  
[13, 33, 58],  
[14, 34, 59],  
[14, 34, 59]],  
  
[[ 2, 14, 38],  
[ 2, 14, 38],  
[ 2, 14, 38],  
...,  
[14, 34, 59],  
[14, 34, 59],  
[14, 34, 59]], dtype=uint8)
```

```
[45]: type(dragon_arr)
```

```
[45]: numpy.ndarray
```

```
[46]: plt.imshow(dragon_arr)
```

```
[46]: <matplotlib.image.AxesImage at 0x1218b0ac200>
```



```
[47]: dragon_arr.shape
```

```
[47]: (2160, 3840, 3)
```

```
[48]: dragon_red = dragon_arr.copy()
```

```
[49]: dragon_red
```

```
[49]: array([[[31, 61, 87],  
           [31, 61, 87],  
           [31, 61, 87],  
           ...,  
           [ 3, 15, 39],  
           [ 3, 15, 39],  
           [ 3, 15, 39]],  
  
          [[[31, 61, 87],  
            [31, 61, 87],  
            [31, 61, 87],  
            ...,  
            [ 3, 15, 39],  
            [ 3, 15, 39],  
            [ 3, 15, 39]],  
  
          [[[31, 61, 87],  
            [31, 61, 87],  
            [31, 61, 87],  
            ...,  
            [ 3, 15, 39],  
            [ 3, 15, 39],  
            [ 3, 15, 39]]]
```

```
[31, 61, 87],  
...,  
[ 3, 15, 39],  
[ 3, 15, 39],  
[ 3, 15, 39]],  
  
...,  
[[ 2, 14, 38],  
[ 2, 14, 38],  
[ 2, 14, 38],  
...,  
[13, 33, 58],  
[14, 34, 59],  
[14, 34, 59]],  
  
[[ 2, 14, 38],  
[ 2, 14, 38],  
[ 2, 14, 38],  
...,  
[14, 34, 59],  
[14, 34, 59],  
[14, 34, 59]],  
  
[[ 2, 14, 38],  
[ 2, 14, 38],  
[ 2, 14, 38],  
...,  
[14, 34, 59],  
[14, 34, 59],  
[14, 34, 59]]], dtype=uint8)
```

```
[50]: dragon_red == dragon_arr
```

```
[50]: array([[[ True,  True,  True],  
 [ True,  True,  True],  
 [ True,  True,  True],  
 ...,  
 [ True,  True,  True],  
 [ True,  True,  True],  
 [ True,  True,  True]],  
  
 [[ True,  True,  True],  
 [ True,  True,  True],  
 [ True,  True,  True],  
 ...,  
 [ True,  True,  True],  
 [ True,  True,  True],  
 [ True,  True,  True]],
```

```
[ True,  True,  True],  
[ True,  True,  True]],  
  
[[ True,  True,  True],  
[ True,  True,  True],  
[ True,  True,  True],  
...,  
[ True,  True,  True],  
[ True,  True,  True],  
[ True,  True,  True]],  
  
...,  
[[ True,  True,  True],  
[ True,  True,  True],  
[ True,  True,  True],  
...,  
[ True,  True,  True],  
[ True,  True,  True],  
[ True,  True,  True]],  
  
[[ True,  True,  True],  
[ True,  True,  True],  
[ True,  True,  True],  
...,  
[ True,  True,  True],  
[ True,  True,  True],  
[ True,  True,  True]]])
```

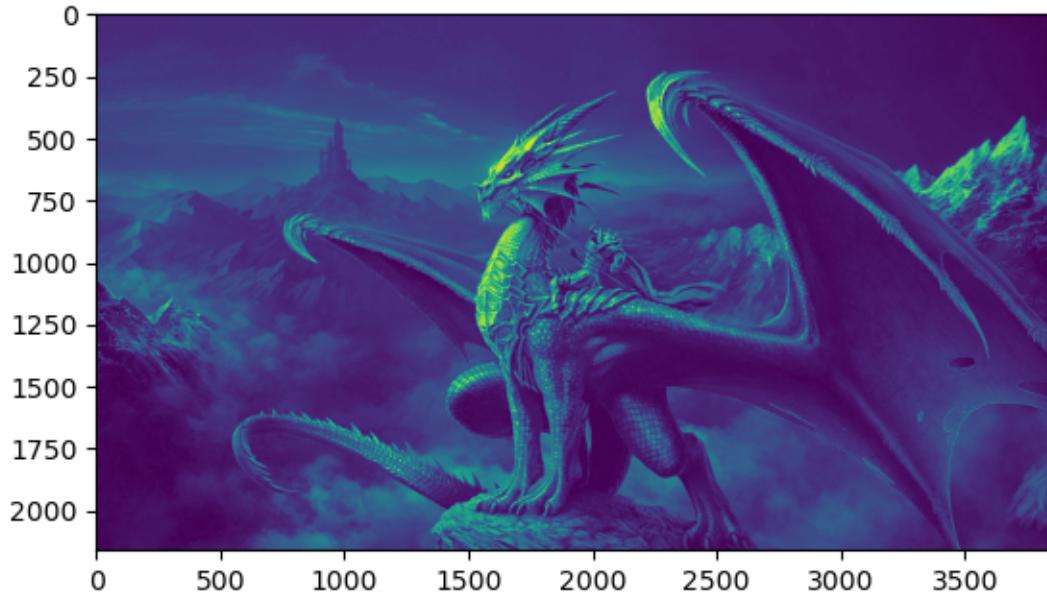
```
[51]: plt.imshow(dragon_red)
```

```
[51]: <matplotlib.image.AxesImage at 0x1218b954b00>
```



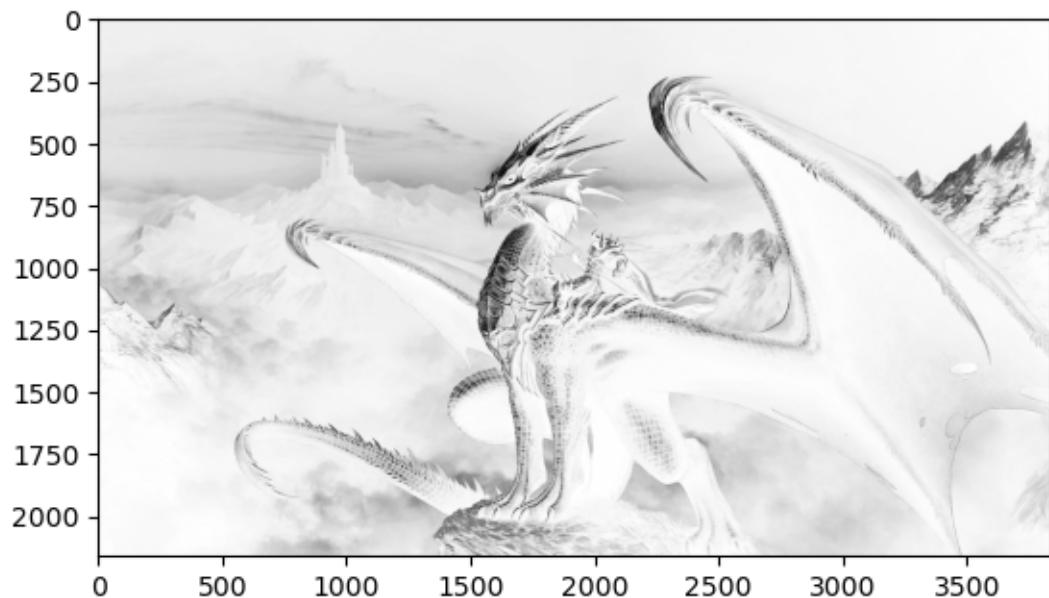
```
[52]: plt.imshow(dragon_red[:, :, 0])
```

```
[52]: <matplotlib.image.AxesImage at 0x1218b99a420>
```



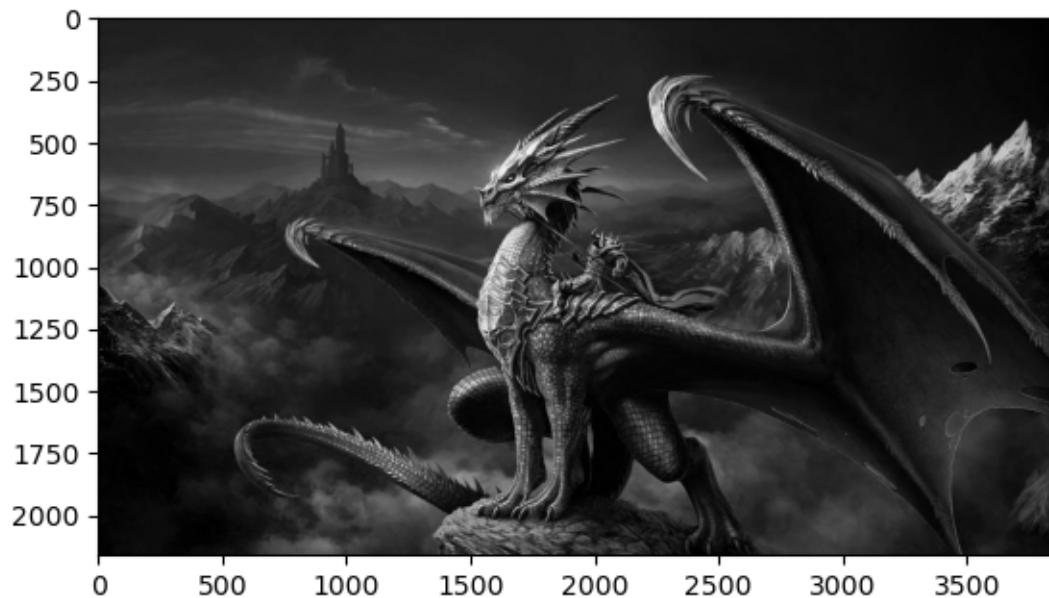
```
[53]: plt.imshow(dragon_arr[:, :, 0], cmap='Greys')
```

[53]: <matplotlib.image.AxesImage at 0x1218ba3fa70>



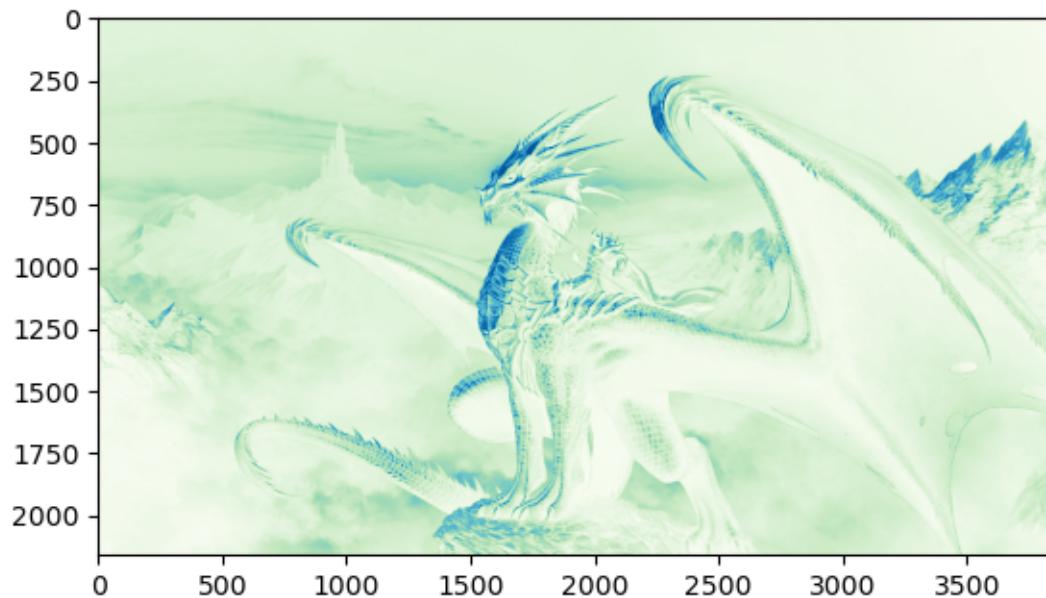
[61]: plt.imshow(dragon_red[:, :, 0], cmap='grey')

[61]: <matplotlib.image.AxesImage at 0x1218f6f32c0>



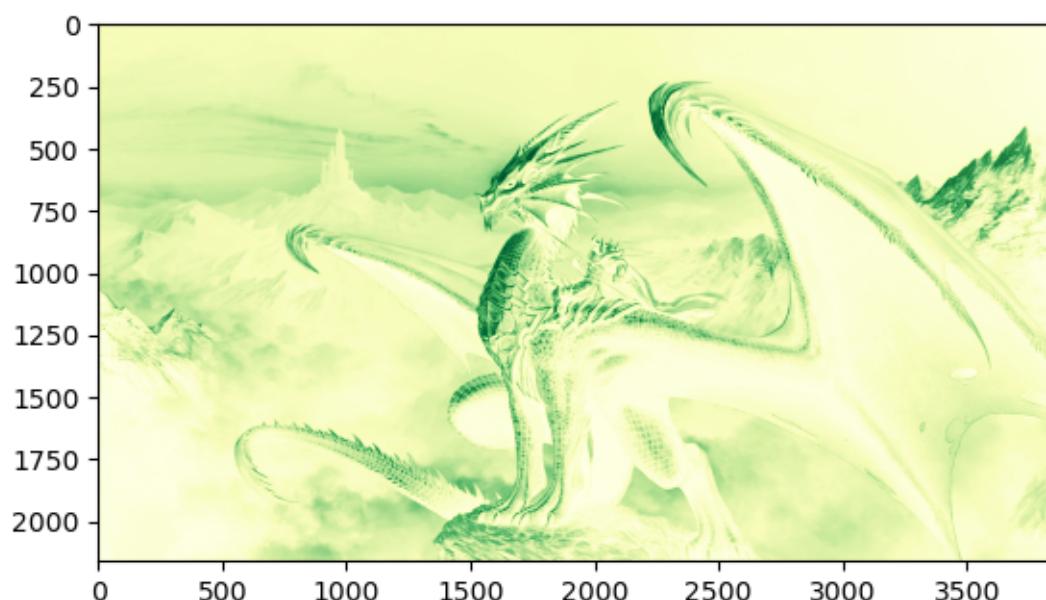
```
[62]: plt.imshow(dragon_red[:, :, 0], cmap='GnBu')
```

```
[62]: <matplotlib.image.AxesImage at 0x1218f6ff6b0>
```



```
[63]: plt.imshow(dragon_red[:, :, 0], cmap='YlGn')
```

```
[63]: <matplotlib.image.AxesImage at 0x121907fb410>
```



```
[65]: dragon_red[:, :, 0]
```

```
[65]: array([[31, 31, 31, ..., 3, 3, 3],  
           [31, 31, 31, ..., 3, 3, 3],  
           [31, 31, 31, ..., 3, 3, 3],  
           ...,  
           [ 2,  2,  2, ..., 13, 14, 14],  
           [ 2,  2,  2, ..., 14, 14, 14],  
           [ 2,  2,  2, ..., 14, 14, 14]], dtype=uint8)
```

```
[66]: dragon_red[:, :, 0]
```

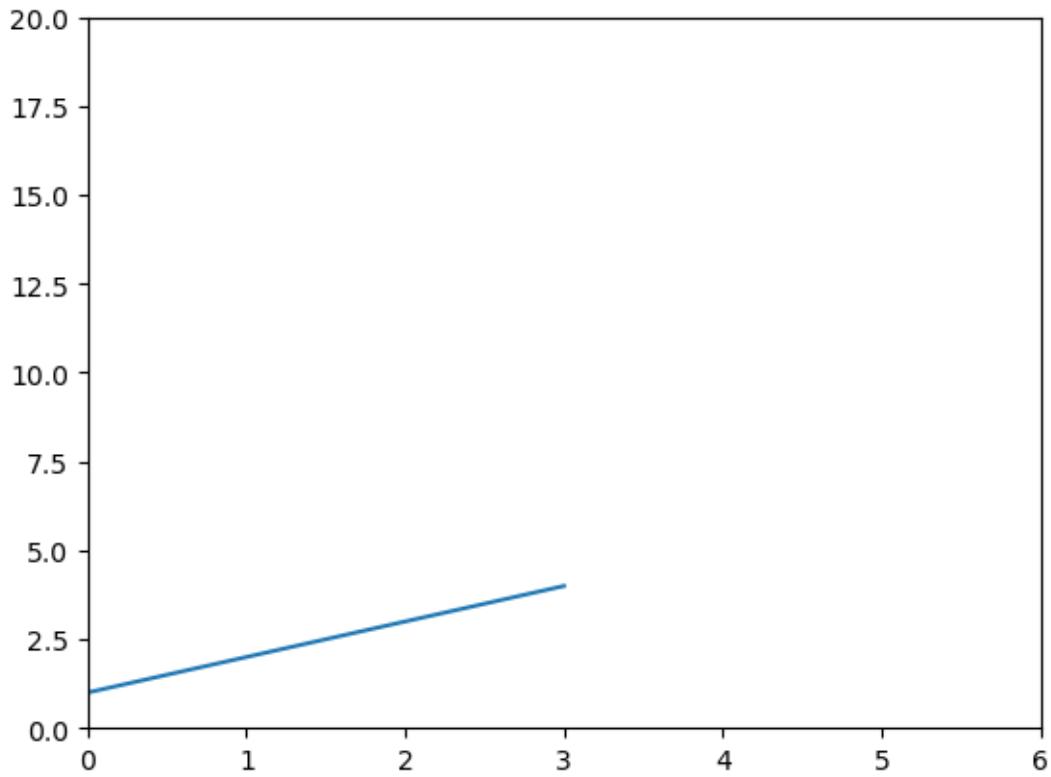
```
[66]: array([[31, 31, 31, ..., 3, 3, 3],  
           [31, 31, 31, ..., 3, 3, 3],  
           [31, 31, 31, ..., 3, 3, 3],  
           ...,  
           [ 2,  2,  2, ..., 13, 14, 14],  
           [ 2,  2,  2, ..., 14, 14, 14],  
           [ 2,  2,  2, ..., 14, 14, 14]], dtype=uint8)
```

```
[67]: dragon_red[:, :, 2]
```

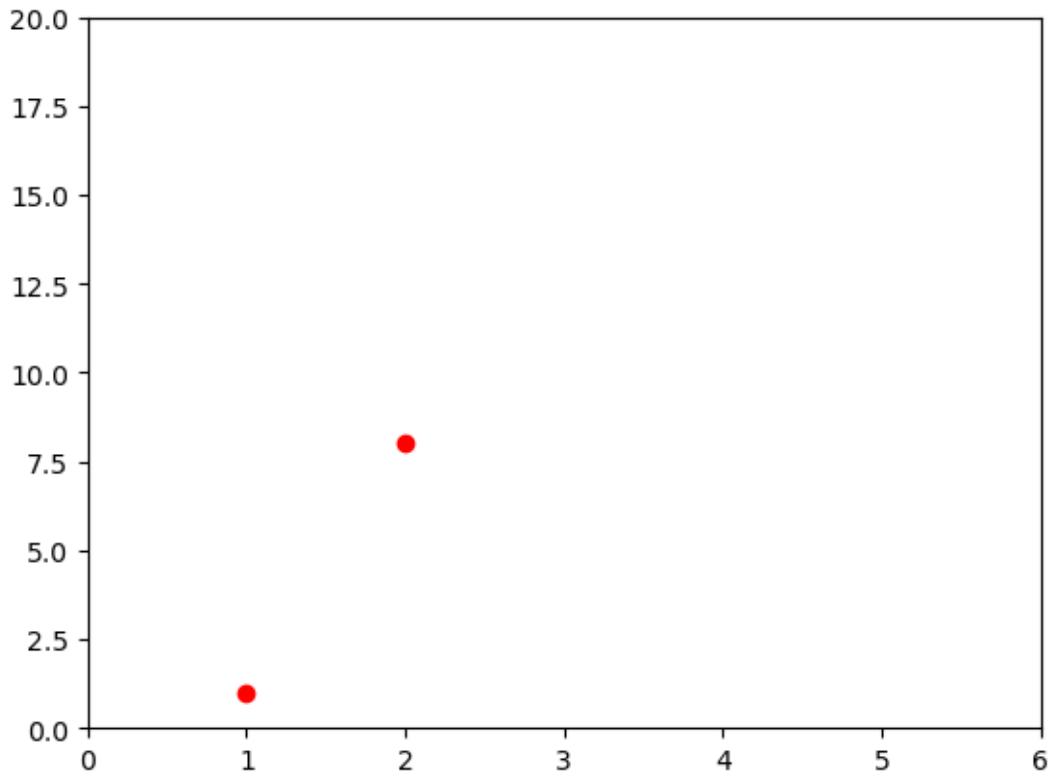
```
Cell In[67], line 1  
dragon_red[:, :, 2]  
^
```

```
SyntaxError: invalid syntax
```

```
[71]: plt.plot([1, 2, 3, 4]), [1, 4, 9, 16], 'go'  
plt.axis([0, 6, 0, 20])  
plt.show()
```

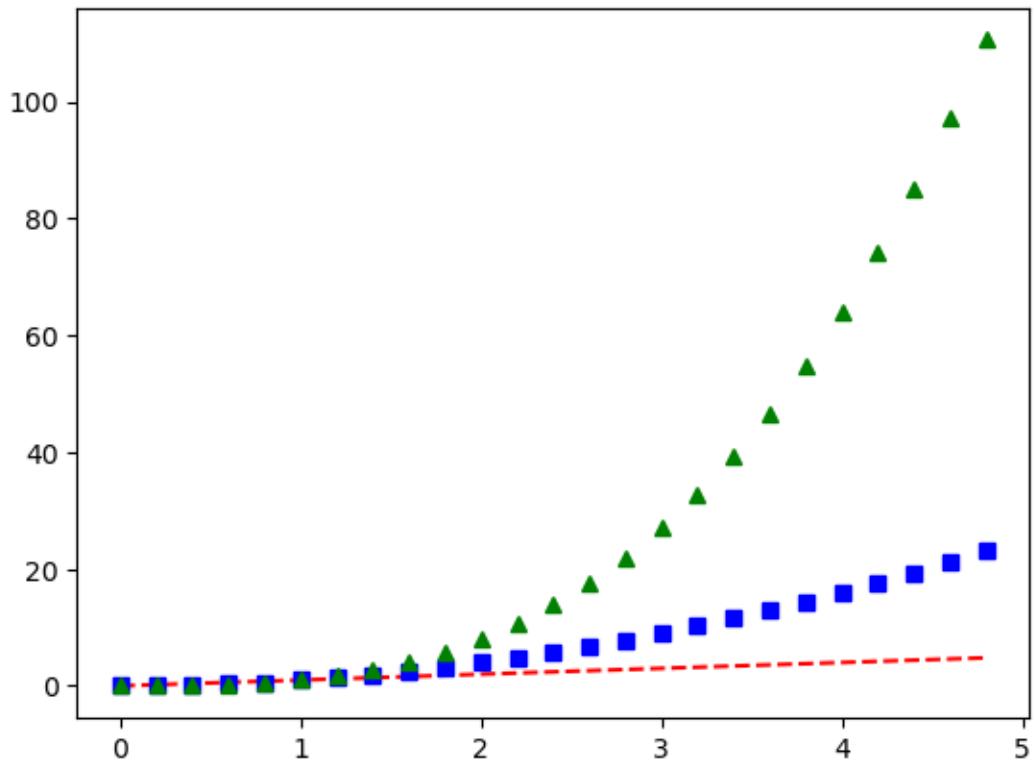


```
[72]: plt.plot([1,2,3,4],[1,8,27,64], 'ro')
plt.axis([0,6,0,20])
plt.show()
```



```
[73]: t = np.arange(0., 5., 0.2)

plt.plot(t, t, 'r--', t, t**2, 'bs', t, t**3, 'g^')
plt.show()
```



[]: