

PRODDEC PYTHON DAY 8

Common terms used in opencv

Pixel

```
In [1]: """
A pixel is generally thought of as the smallest single component of a digital image.
Images is made of pixels.
Images resolution are sometimes represented using pixel.
Example-1:
1024x720 resolution image
1024 pixel in row 720 pixel in column.
"""

```

Megapixel

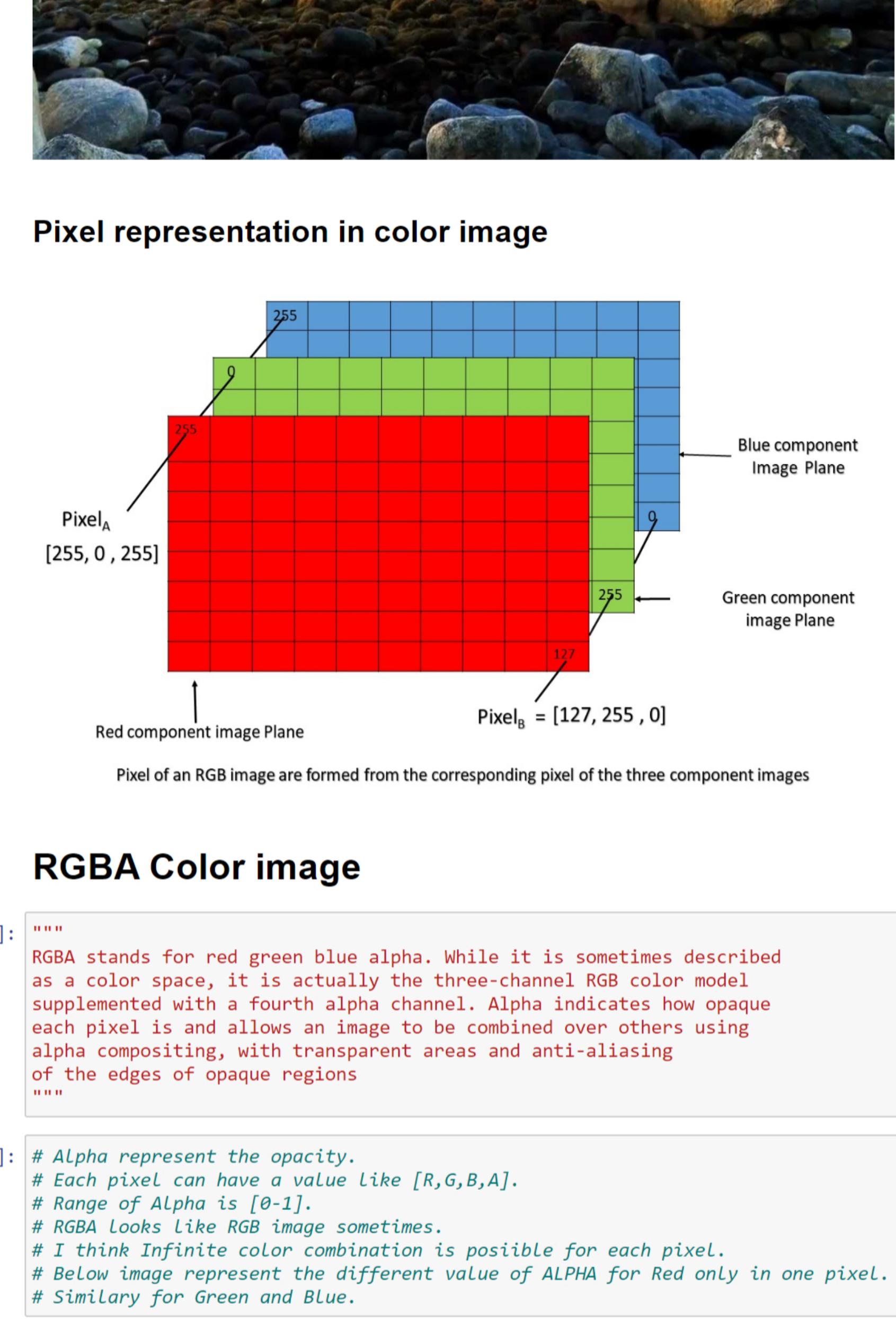
```
In [2]: """
A megapixel (MP) is a million pixels; the term is used not only for the number of pixels in an image but also to express the number of image sensor elements of digital cameras or the number of display elements of digital displays. For example, a camera that makes a 2048x1536 pixel image (3,145,728 finished image pixels) typically uses a few extra rows and columns of sensor elements and is commonly said to have "3.2 megapixels" or "3.4 megapixels", depending on whether the number reported is the "effective" or the "total" pixel count
"""

```

Image classification

Binary Image

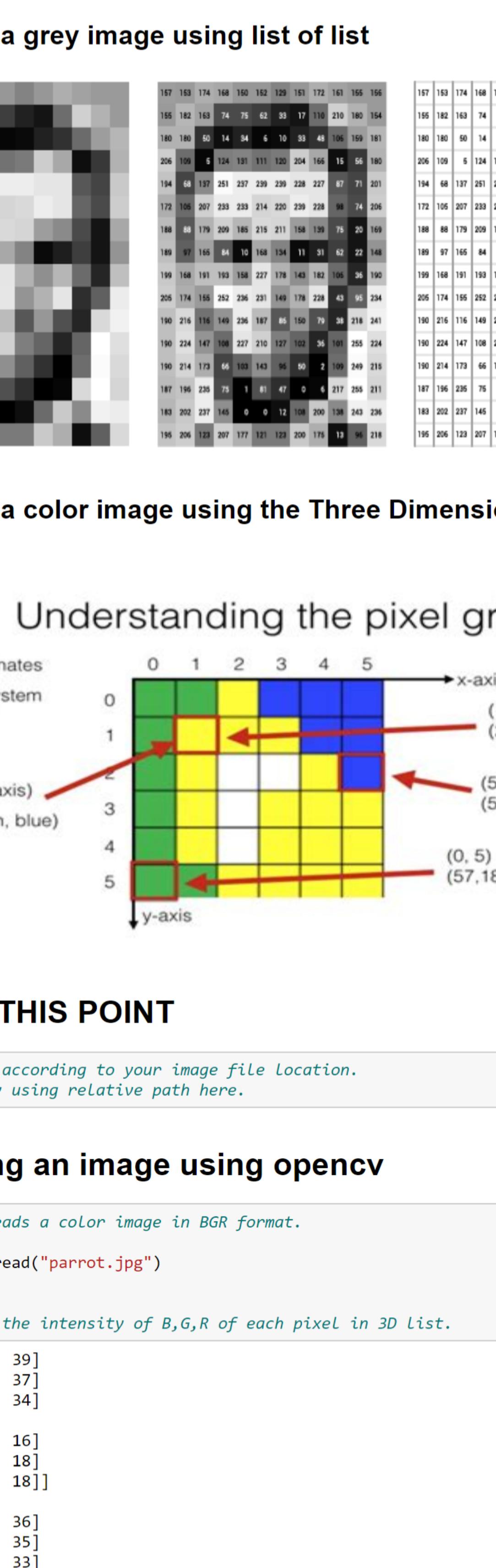
```
In [3]: # Each pixel can have only two values -> 1/0 OR 255/0
# Also called 1 bit image.
# 2^1(2) combination of color is possible.
# Each square represent a pixel.
```



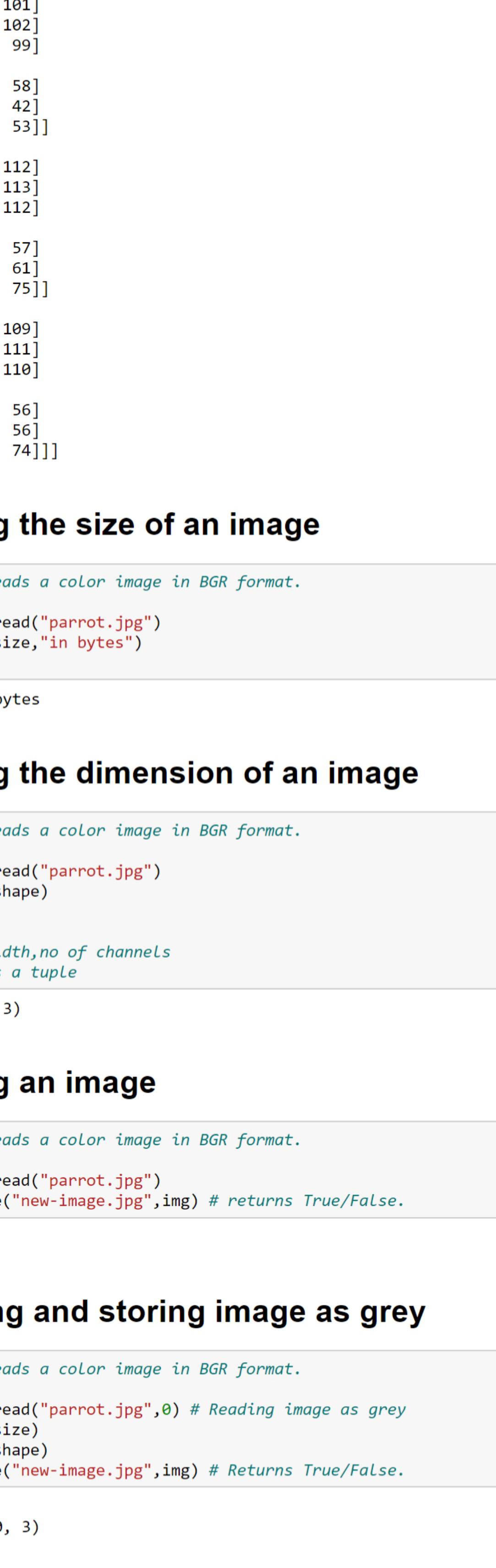
Grey Image

```
In [4]: # Each pixel can have only 256 values -> 0-255
# It is also called 8 bit image.
# 2^8 combination of values for each pixel.
# Each square represent a pixel.
```

Example 1

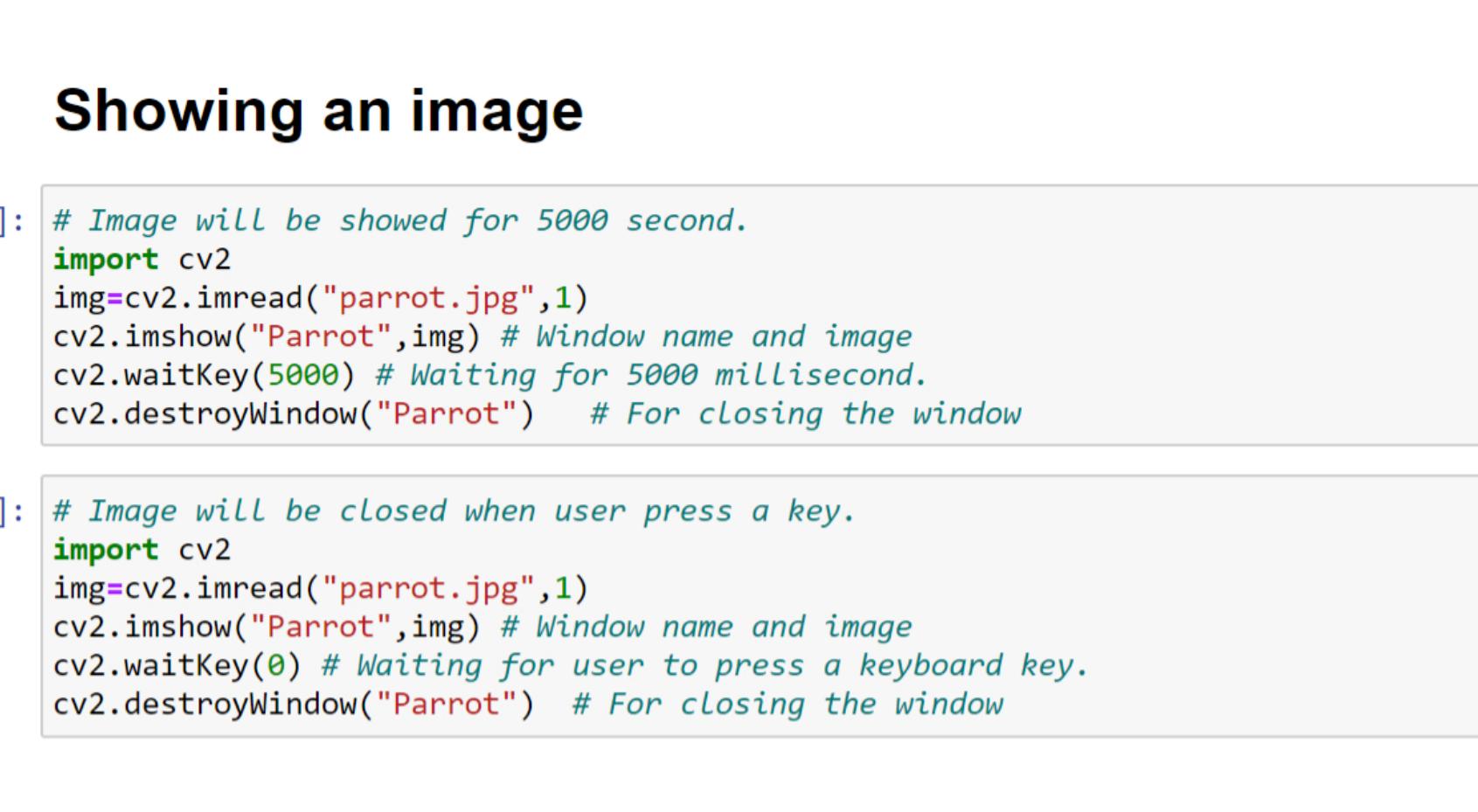


Example 2

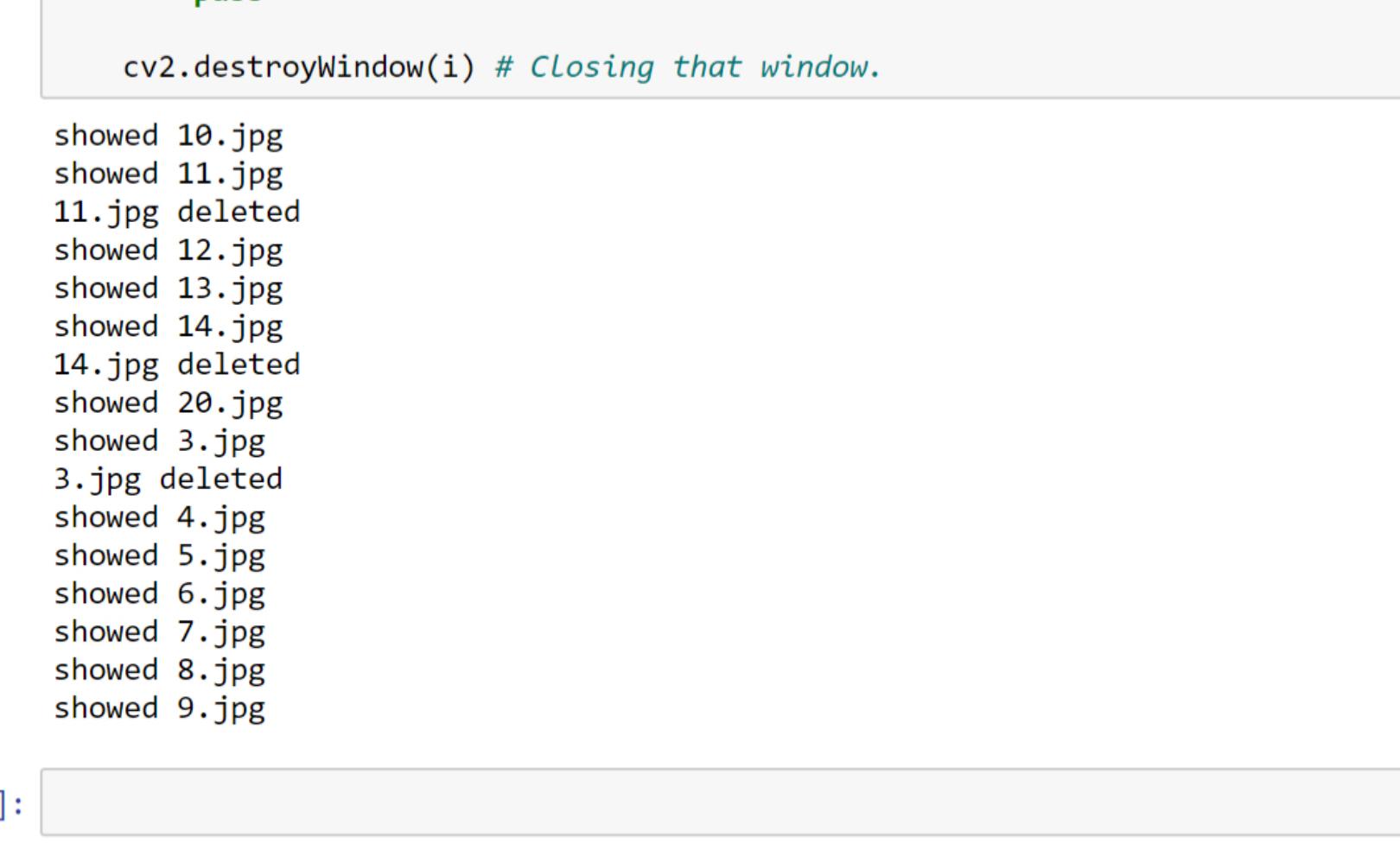


RGB Image (3 channel image)

```
In [5]: # Each pixel can have only 16 million values -> 256*256*256=16777216
# It is also called 16M color image.
# 2^8 * 2^8 * 2^8 combination of values for each pixel.
# Each square represent a pixel.
```



Pixel representation in color image



NOTE THIS POINT

```
In [6]: # Add path according to your image file Location.
# I am only using relative path here.
```

Reading an image using opencv

```
In [7]: # Opencv reads a color image in BGR format.
import cv2
img=cv2.imread("parrot.jpg")
print(img)

# It shows the intensity of B,G,R of each pixel in 3D List.
```

