

```
import matplotlib.pyplot as plt #import

flower=plt.imread('flower1.jpg')

print(flower.shape)

#print(flower)
print (flower[:, :, [1]])

plt.imshow(flower)
plt.show()

red_flower=flower.copy()
red_flower[:, :, [1,2]]=0
plt.imshow(red_flower)
plt.show()
```

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```
import cv2
import matplotlib.pyplot as plt
Image='einstein.jpg'
img = cv2.imread(Image, 0)
plt.imshow(img)
plt.show()

cv2.imwrite('red_flower.jpeg',red_flower)

cv2.imwrite('red_flower.png',red_flower)

print(img.shape)

img.flatten()

# import cv2, numpy, matplotlib
import cv2
import numpy as np
import matplotlib.pyplot as plt

Image='einstein.jpg'
img = cv2.imread(Image, 0)
plt.imshow(img)
plt.show()
```

```
img.shape
```

```
cv2.imwrite('en.png',flower)
```

```
print(img.shape)
```

```
# function to obtain histogram of an image
```

```
def hist_plot(img):
```

```
    # empty list to store the count  
    # of each intensity value  
    count = []
```

```
    # empty list to store intensity  
    # value  
    r = []
```

```
    # loop to traverse each intensity  
    # value  
    for k in range(0, 256):  
        r.append(k)  
        count1 = 0
```

```
    # loops to traverse each pixel in  
    # the image  
    for i in range(m):  
        for j in range(n):  
            if img[i, j] == k:  
                count1 += 1  
    count.append(count1)
```

```
    return (r, count)
```

```
print(img.shape)
```

```
# To ascertain total numbers of rows and  
# columns of the image, size of the image  
m, n = img.shape  
r1, count1 = hist_plot(img)
```

```
# plotting the histogram  
plt.stem(r1, count1)  
plt.xlabel('intensity value')  
plt.ylabel('number of pixels')  
plt.title('Histogram of the original image')  
plt.show()  
print(img.max(),img.min())
```

```
# Histogram Stretching using user defined function
```

```
# Histogram Equalization using user defined function
```

```
# Histogram Stretching using builtin function
```

```
# import cv2, numpy, matplotlib
```

```
import cv2
```

```
import numpy as np
```

```
import matplotlib.pyplot as plt
```

```
Image='einstein.jpg'
```

```
img = cv2.imread(Image,0)
```

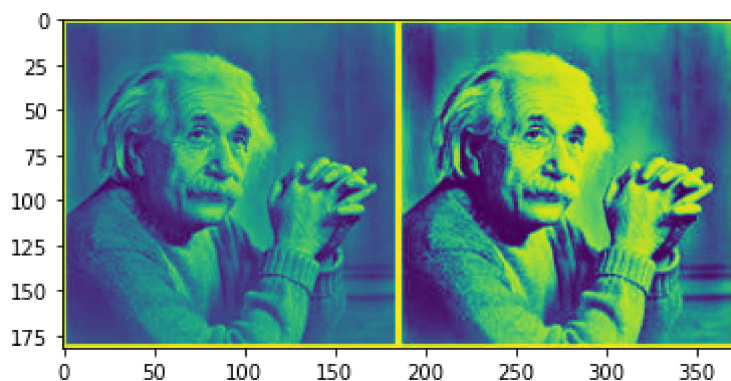
```
equ = cv2.equalizeHist(img)
```

```
res = np.hstack((img,equ)) #stacking images side-by-side
```

```
cv2.imwrite('res.png',res)
```

```
plt.imshow(res)
```

<matplotlib.image.AxesImage at 0x198f2252e20>



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