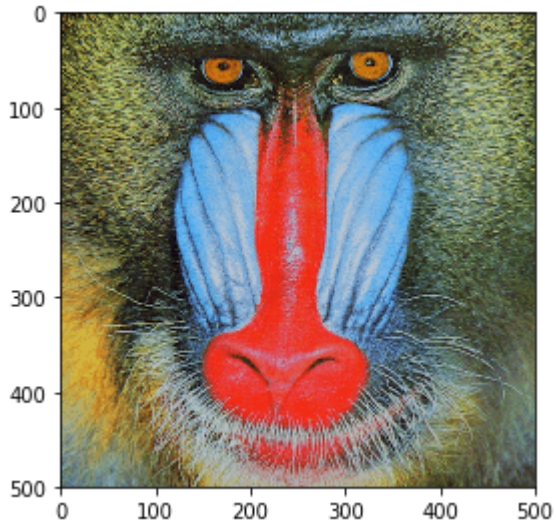
In [1]:

```
import matplotlib.pyplot as plt
from skimage import io
io.use_plugin('matplotlib')
img = io.imread('baboon.png')
print(img[0])
print(img[0,0])
print(img[0,0,0])
```

```
[[0.52156866 0.4392157  0.20784314]
 [0.22352941 0.20784314 0.11764706]
 [0.1882353  0.1254902  0.09411765]
 ...
 [0.45490196 0.4117647  0.24313726]
 [0.5372549  0.5882353  0.32156864]
 [0.6666667  0.7137255  0.39607844]]
[0.52156866 0.4392157  0.20784314]
0.52156866
```

In [2]:

```
plt.figure(figsize=(4, 4))
plt.imshow(img, cmap='gray', interpolation='nearest')
plt.axis('on')
plt.tight_layout()
plt.show()
```



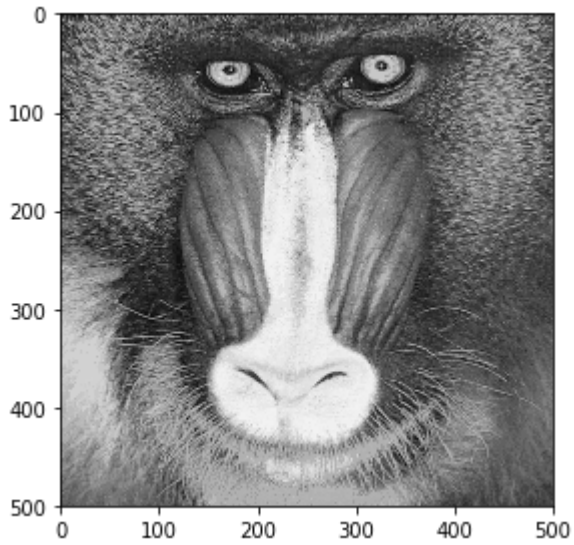

In [3]:

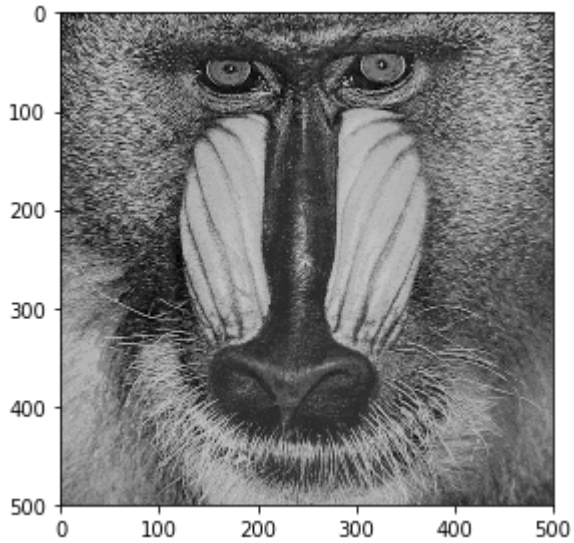
```
print(img.dtype)
print(img.shape)
print(img.size)
print(type(img))
```

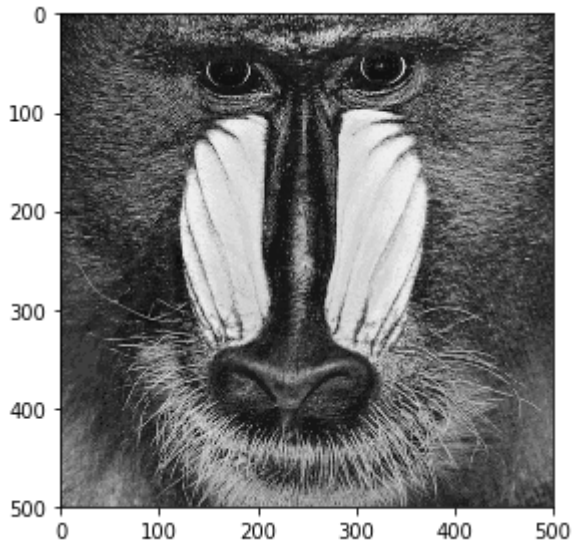
```
float32
(500, 500, 3)
750000
<class 'numpy.ndarray'>
```

In [4]:

```
io.imshow(img[:,:,0])
io.show()
io.imshow(img[:,:,1])
io.show()
io.imshow(img[:,:,2])
io.show()
```

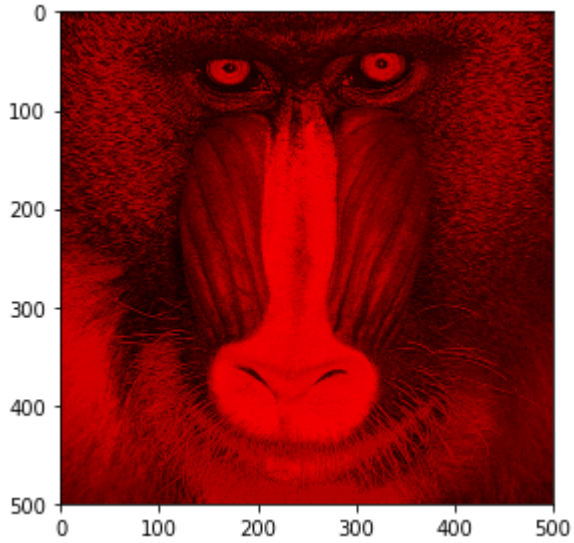


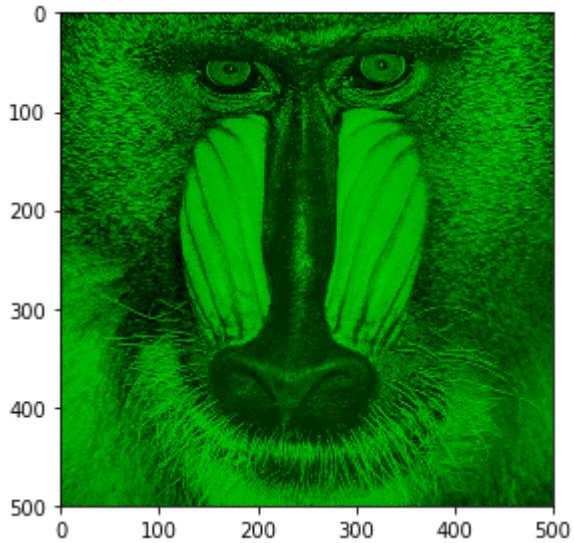
In [5]:

```
red_image = img.copy()
red_image[:,:,1] = 0
red_image[:,:,2] = 0
io.imshow(red_image)
io.show()
```




In [6]:

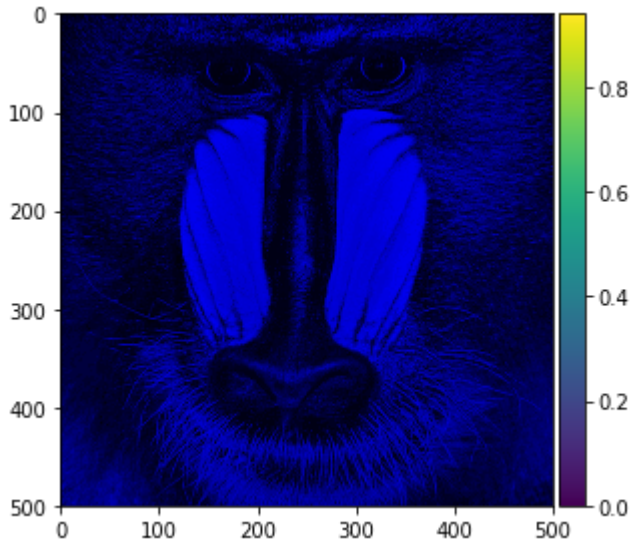
```
green_image = img.copy()
green_image[:,:,0] = 0
green_image[:,:,2] = 0
io.imshow(green_image)
io.show()
```



In [7]:

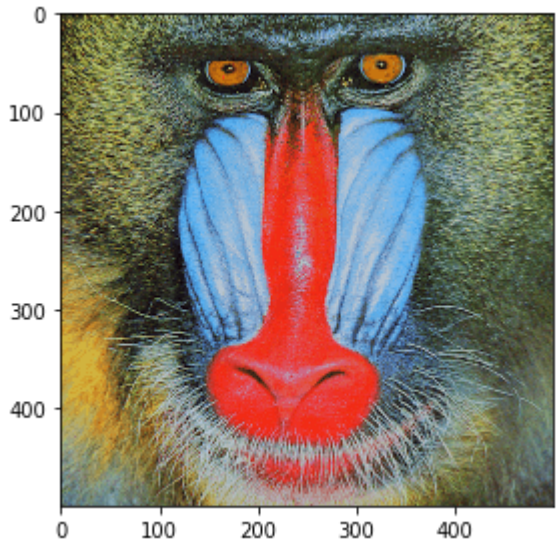
```
blue_image = img.copy()
blue_image[:,:,0] = 0
blue_image[:,:,1] = 0
io.imshow(blue_image)
io.show()
```

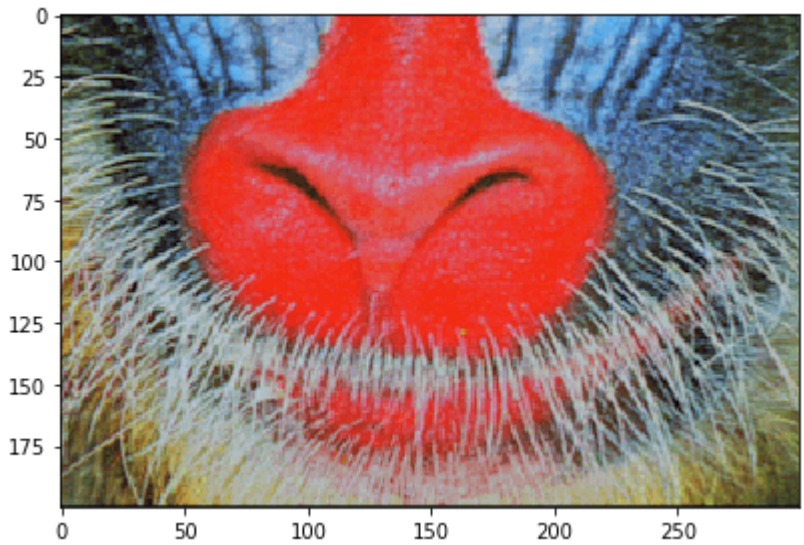
```
/Users/thanakornpasangthien/anaconda3/lib/python3.6/site-packages/sk
image/io/_plugins/matplotlib_plugin.py:77: UserWarning: Low image da
ta range; displaying image with stretched contrast.
  warn("Low image data range; displaying image with "
```



In [8]:

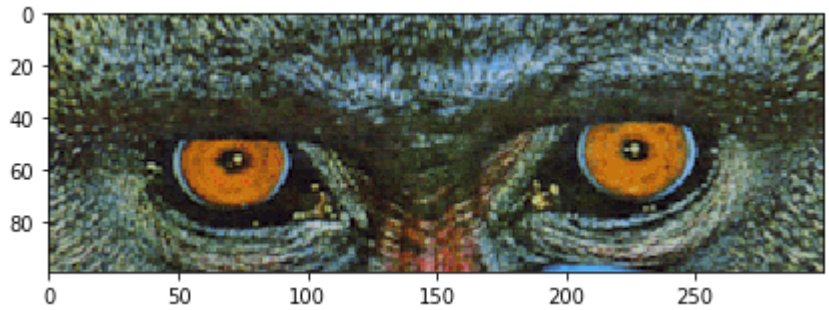
```
io.imshow(img[1:500,1:500]);
io.show()
io.imshow(img[300:500,100:400]);
io.show()
```



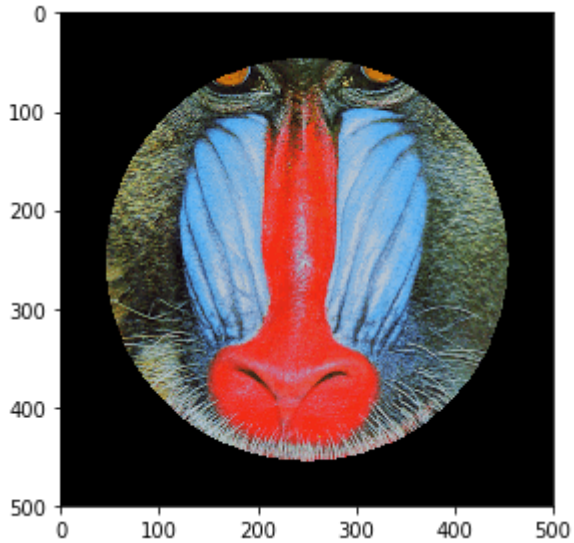
In [9]:

```
io.imshow(img[0:100,100:400]);
io.show()
```



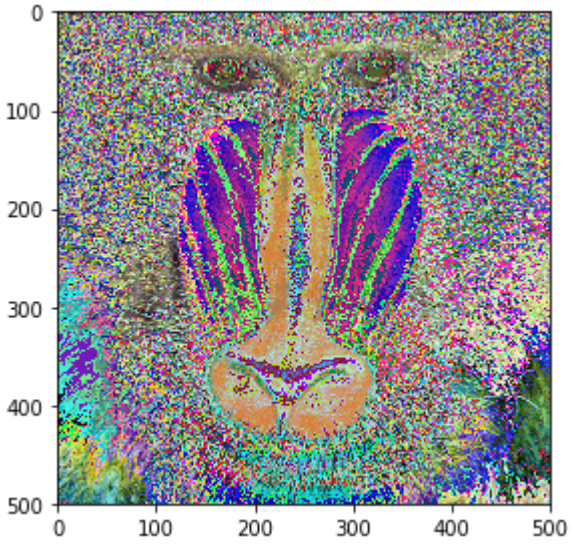

In [18]:

```
import numpy as np
test_image = img.copy()
lx, ly, lz = test_image.shape
X, Y = np.ogrid[0:lx, 0:ly]
mask = (X - lx / 2) ** 2 + (Y - ly / 2) ** 2 > lx * ly / 6;
test_image[mask]=0;
io.imshow(test_image)
io.show()
```



In [11]:

```
camera_multiply = img*3
io.imshow(camera_multiply)
io.show()
```

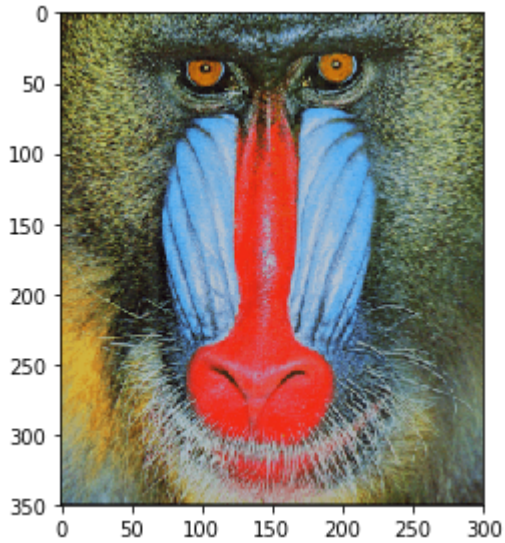


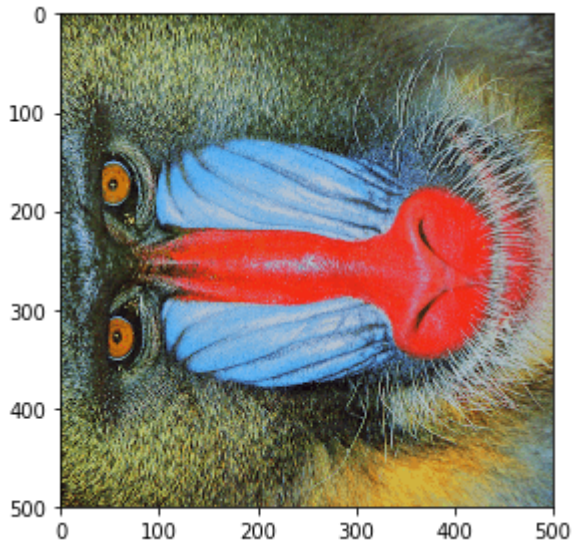
In [19]:

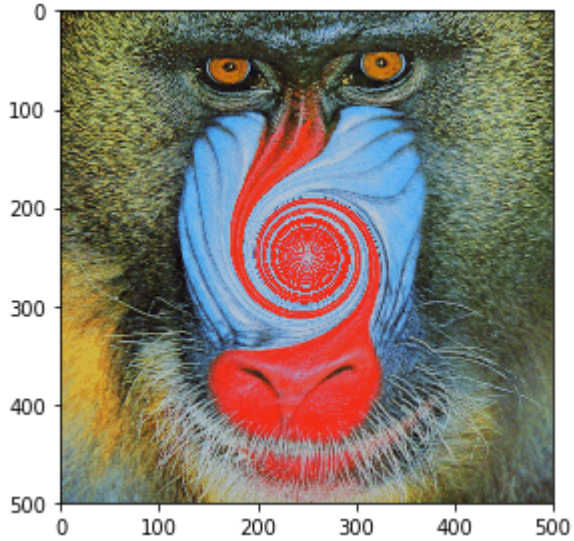
```
from skimage.transform import resize, rotate, swirl
resized = resize(img, (350, 300), mode='constant', anti_aliasing=True)
io.imshow(resized)
io.show()


#Rotate image by a certain angle around its center.
#Rotation angle in degrees in counter-clockwise direction.
rotate = rotate(img, 90)
io.imshow(rotate)
io.show()


swirled = swirl(img, rotation=0, strength=100, radius=120, mode='constant')
io.imshow(swirled)
io.show()
```


0
50
100
150
200
250
300
350
0
50
100
150
200
250
300

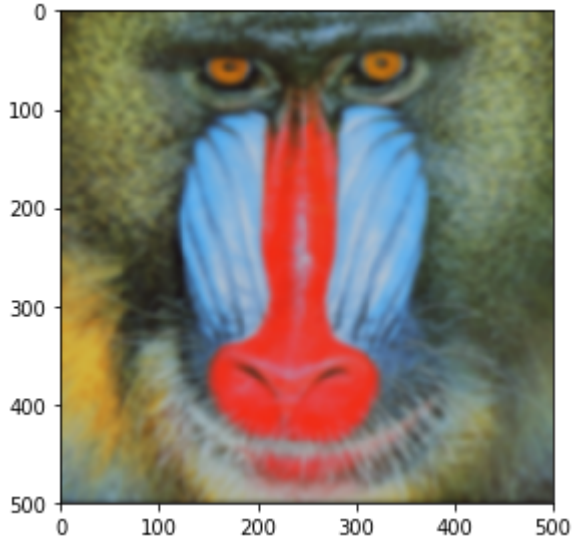

0
100
200
300
400
500
0
100
200
300
400
500

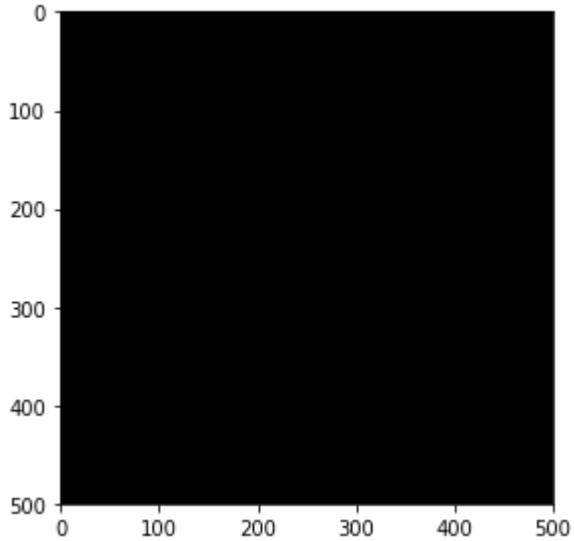

0
100
200
300
400
500
0
100
200
300
400
500

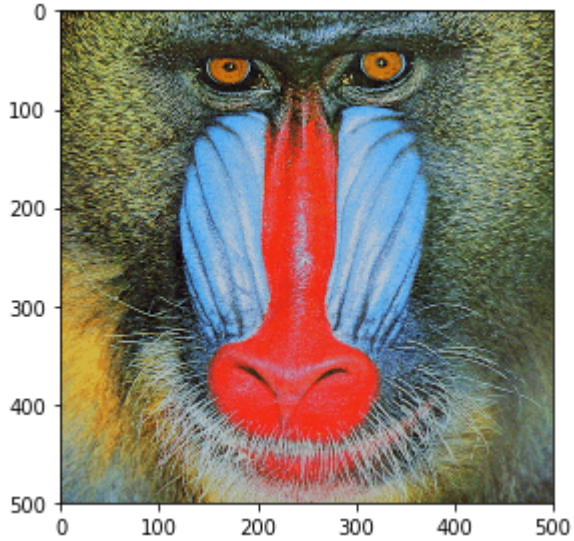
In [9]:

```
from skimage import filters
blurred_img = filters.gaussian(img, sigma=3, multichannel=True)
io.imshow(blurred_img)
io.show()

alpha = 0.15
shapened_img = img + alpha * (img - blurred_img)
io.imshow(shapened_img.astype(int))
io.show()
io.imshow(img)
io.show()
```


0
100
200
300
400
500
0
100
200
300
400
500


0
100
200
300
400
500
0
100
200
300
400
500


0
100
200
300
400
500
0
100
200
300
400
500