Import the necessary lib , open cv and matplotlib mainly

```
import pandas as pd
import numpy as np
from glob import glob
import cv2
import matplotlib.pylab as plt
import os
```

Read the images

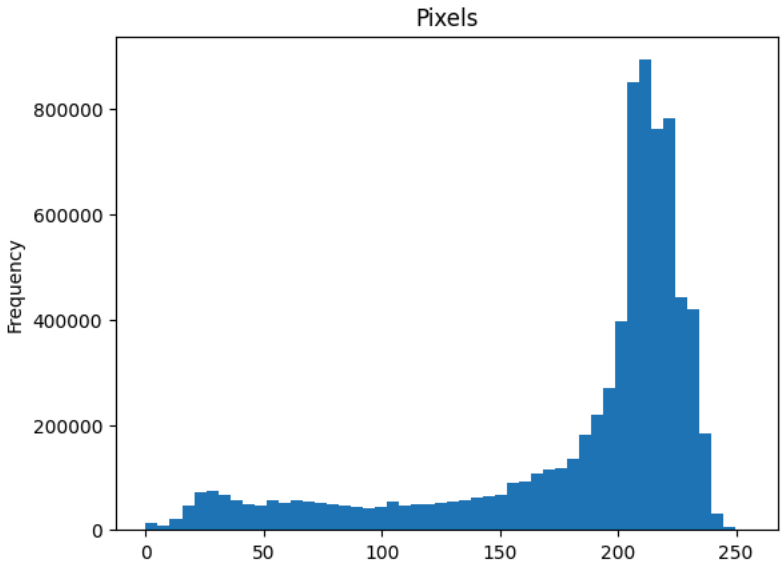
```
cats=glob('/content/imageprocessing/cats/*.jpg')
dogs=glob('/content/imageprocessing/dogs/*.jpg')
```

using plt and cv2 - gives a np array for image

```
img_mpl =plt.imread(cats[0])
img_cv =cv2.imread(cats[0])

```

```
array([[[170, 161, 152],
        [168, 159, 150],
        [166, 157, 150],
        ...,
        [198, 200, 195],
        [196, 198, 193],
        [198, 200, 195]],

       [[159, 150, 141],
        [159, 150, 141],
        [161, 152, 145],
        ...,
        [200, 202, 197],
        [201, 203, 198],
        [203, 205, 200]],

       [[161, 152, 143],
        [162, 153, 144],
        [164, 155, 148],
        ...,
        [202, 204, 199],
        [204, 206, 201],
        [201, 203, 198]],

       ...,

       [[172, 182, 184],
        [177, 187, 189],
        [182, 192, 194],
        ...,
        [188, 203, 206],
        [185, 200, 203],
        [188, 203, 206]],

       [[180, 190, 192],
        [177, 187, 189],
        [177, 187, 189],
        ...,
        [188, 204, 204],
        [189, 205, 205],
        [189, 205, 205]],

       [[180, 190, 192],
        [177, 187, 189],
        [177, 187, 189],
        ...,
        [188, 204, 204],
        [189, 205, 205],
        [189, 205, 205]]], dtype=uint8)
```

```
pd.Series(img_mpl.flatten()).plot(kind="hist",bins=50,title="Pixels")
plt.show()
```



Display Image

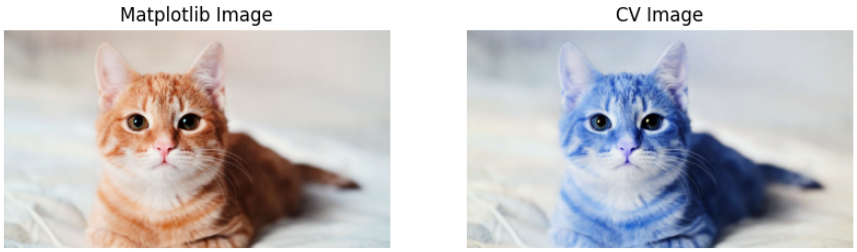
```
fig , ax = plt.subplots(figsize=(10,10))
ax.imshow(img_mpl)
ax.axis('off')
plt.show()
```

RGB representation

```
fig , axs =plt.subplots(1,3,figsize=(10,10))
axs[0].imshow(img_mpl[:,:,0],cmap="Reds")
axs[1].imshow(img_mpl[:,:,1],cmap="Greens")
axs[2].imshow(img_mpl[:,:,2],cmap="Blues")
axs[0].set_title("RED")
axs[1].set_title("GREEN")
axs[2].set_title("BLUE")
axs[0].axis('off')
axs[1].axis('off')
axs[2].axis('off')
plt.show()
```

MATPLOTLIB - RGB , CV - BGR

```
fig , axs = plt.subplots(1,2,figsize=(10,10))
axs[0].imshow(img_mpl)
axs[0].axis('off')
axs[0].set_title('Matplotlib Image')
axs[1].imshow(img_cv)
axs[1].axis('off')
axs[1].set_title('CV Image')
plt.show()
```



BGR -> RGB

```
img_cvrgb = cv2.cvtColor(img_cv,cv2.COLOR_BGR2RGB)
fig , ax = plt.subplots(figsize=(7,7))
ax.imshow(img_cvrgb)
ax.axis('off')
ax.set_title("Converted")
plt.show()
```

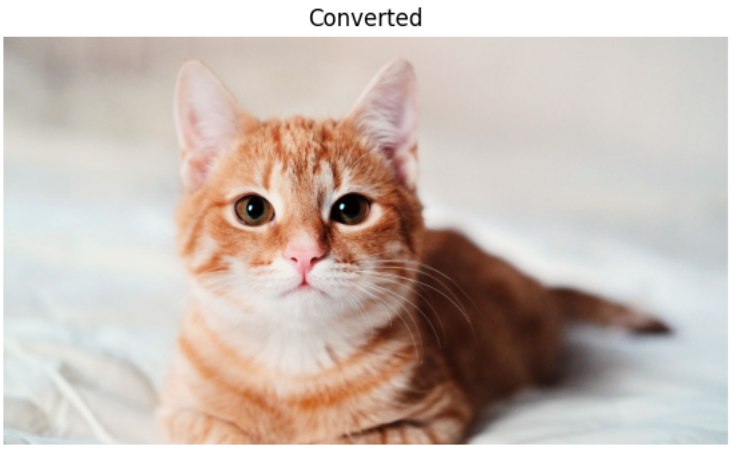


Image manipulation

```
1
```

Double-click (or enter) to edit