

```
!pip install pillow  
Requirement already satisfied: pillow in /usr/local/lib/python3.10/dist-packages (9.4.0)  
  
from PIL import Image  
img = Image.open("/content/picture.jpg")  
img.show();  
img
```



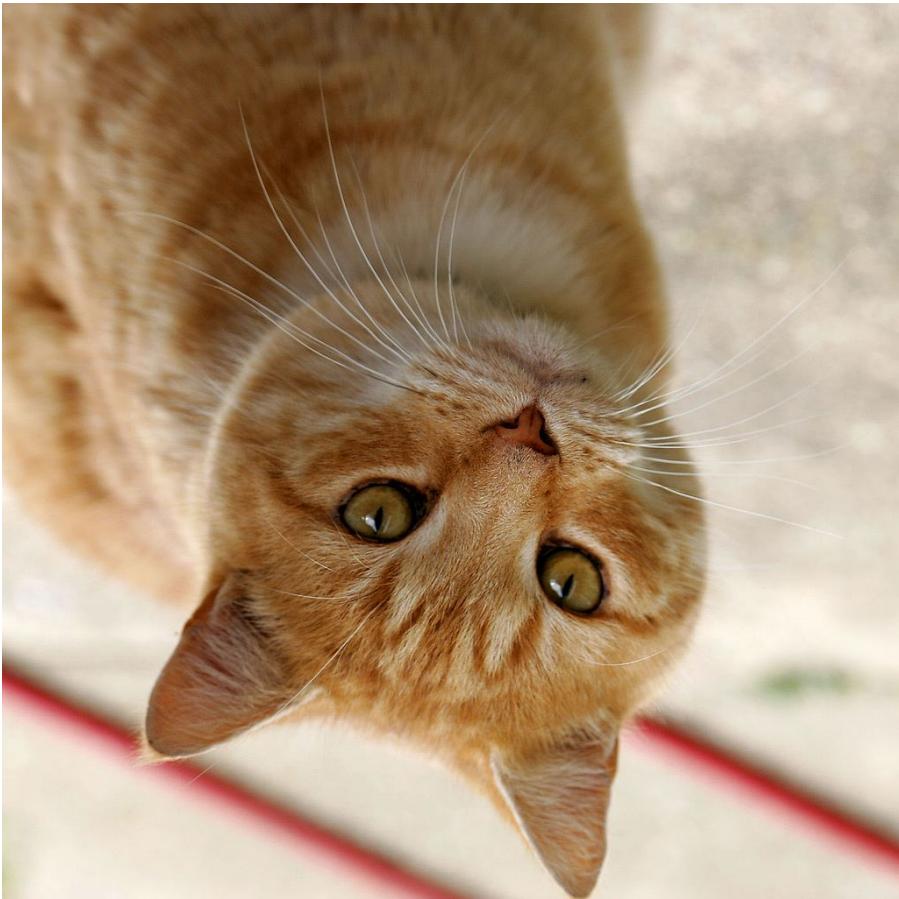
```
print(img.mode) #RGBA 4 ta part 4*8=32 RGB 3 ta part 3*8=24  
print(img.size)  
print(img.format)  
  
RGB  
(1025, 1024)  
JPEG  
  
img.rotate(65)
```



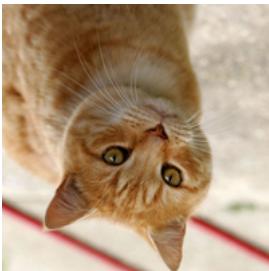
```
# open the original image
original_img = Image.open("/content/picture.jpg")

#original image
#flip the original image
vertical_img = original_img.transpose(method = Image.FLIP_TOP_BOTTOM)
vertical_img.save("vertical.jpg")

vertical_img
```



```
vertical_img.size  
size=(200,200)  
new_image = vertical_img.resize(size)  
#original_image  
vertical_img.save("New_image.jpg")  
new_image
```



✓ Croping Image

```

width,height = img.size

#setting the points for cropped image
left = 10
top = height/4
right = 164
bottom = 3* height/4
im1 = img.crop((left,top,right,bottom))

im1

```



▼ Multiple Image

```

import os
from PIL import Image
from matplotlib import pyplot as plt

root = "Images"
fnames = os.listdir(root) #ki ace folder ta ta dekhabe
len(fnames)
fig,axs= plt.subplots(nrows=1,ncols=3,figsize=(20,20)) #ncols = len(frames)
axs = axs.flatten()
for i in range(len(fnames)):
    filepath=os.path.join(root,fnames[i])
    img = Image.open(filepath)
    axs[i].imshow(img)
    axs[i].axis('off')
    axs[i].set_title(fnames[i])
plt.show()

```



- ✓ Convert Open cv image(BGR) to PIL image(RGB)

```
import cv2
from PIL import Image

#open image using openCV2
opencv_image = cv2.imread("/content/jigi.png")
#notice the color bgr to rgb
#convert bgr to rgb
colorConverted = cv2.cvtColor(opencv_image, cv2.COLOR_BGR2RGB)
#display the scanned image by using cv2.imread
#plt.imshow(opencv_image)
#display the converter image
pilImage = Image.fromarray(colorConverted)
pilImage
```



```
# https://www.geeksforgeeks.org/convert-opencv-image-to-pil-image-in-python/
```

- ✓ Additive color to subtractive color

```
B,G,R = cv2.split(opencv_image)
plt.imshow(B)

from google.colab.patches import cv2_imshow
colorConverted = cv2.cvtColor(opencv_image)
```

```
<matplotlib.image.AxesImage at 0x7f478b48e4a0>
```

