```
import matplotlib as plt
import numpy as np
import cv2
from google.colab.patches import cv2_imshow # for image display
```

```
from google.colab import drive
drive.mount('/content/drive')
```

```
Drive already mounted at /content/drive; to attempt to forcibly remount, call
```

```
img = cv2.imread("/content/drive/My Drive/colab/mountain.jpg", 1)
cv2_imshow(img)
```

```
criteria = (cv2.TERM_CRITERIA_EPS + cv2.TERM_CRITERIA_MAX_ITER, 10, 1.0)
K = 2
attempts=10
```

```
img = cv2.cvtColor(img,cv2.COLOR_BGR2RGB)
```



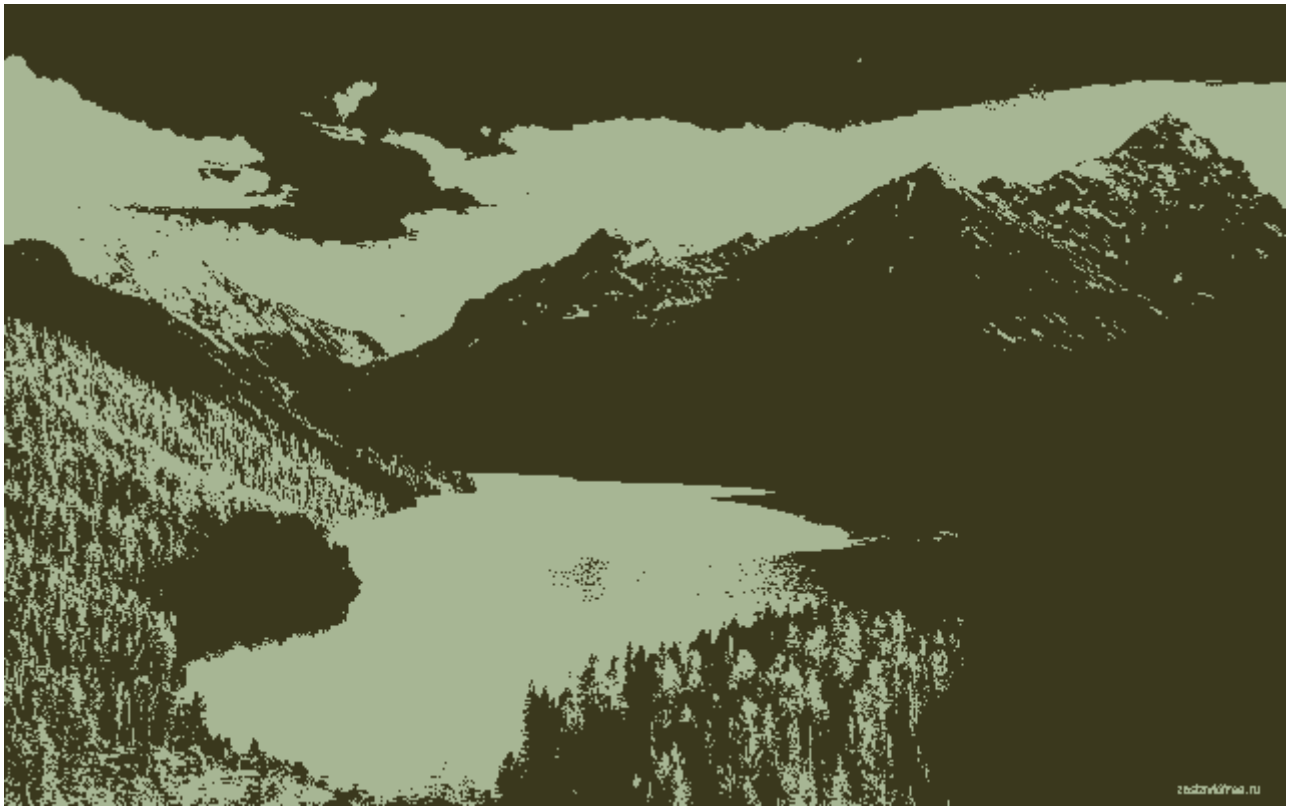
```
twoDimage.shape
```

```
(256000, 3)
```

```
img.shape
```

```
(400, 640, 3)
```

```
K=2
ret,label,center=cv2.kmeans(twoDimage,K,None,criteria,attempts,cv2.KMEANS_PP_CENTEI
center = np.uint8(center)
res = center[label.flatten()]
result_image = res.reshape((img.shape))
cv2_imshow(result_image)
```



```
result_image.shape
```

```
(400, 640, 3)
```

Double-click (or enter) to edit

```
center
```

```
array([[148, 182, 167],
       [ 29,  56,  58]], dtype=uint8)
```

Saved successfully!

```
gray = cv2.cvtColor(img,cv2.COLOR_RGB2GRAY)
cv2_imshow(gray)
```

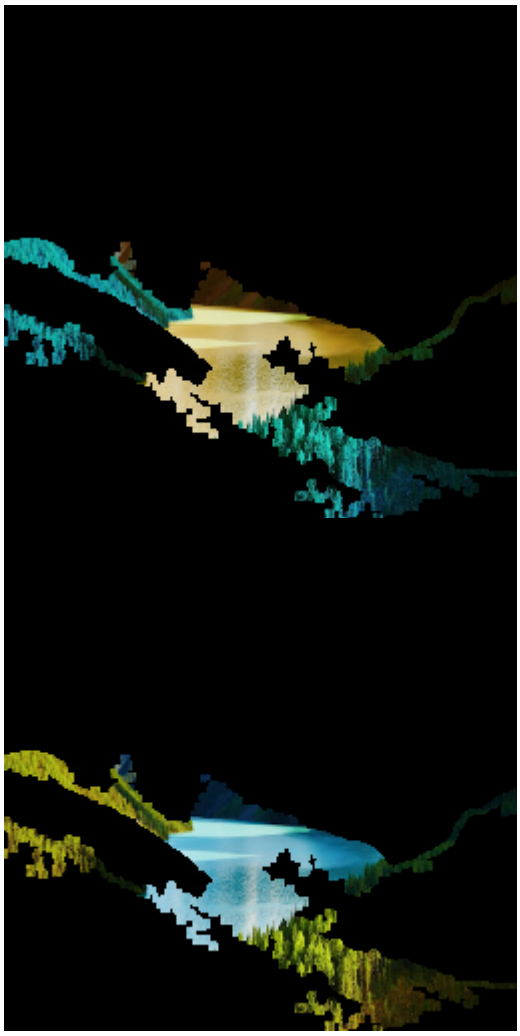
```
_,thresh = cv2.threshold(gray, np.mean(gray), 255, cv2.THRESH_BINARY_INV)
cv2_imshow(thresh)
canny = cv2.Canny(thresh,0,255)
cv2_imshow(canny)
edges = cv2.dilate(canny,None)
cv2_imshow(edges)
```

Segmentation using Color Masking

```
img = cv2.resize(img,(256,256))
cnt = sorted(cv2.findContours(edges, cv2.RETR_LIST, cv2.CHAIN_APPROX_SIMPLE)[-2], k
mask = np.zeros((256,256), np.uint8)
masked = cv2.drawContours(mask, [cnt],-1, 255, -1)
cv2_imshow(masked)
```

Saved successfully!

```
dst = cv2.bitwise_and(img, img, mask=mask)
segmented = cv2.cvtColor(dst, cv2.COLOR_BGR2RGB)
cv2_imshow(dst)
cv2_imshow(segmented)
```



```
img = cv2.imread("/content/drive/My Drive/colab/mountain.jpg", 1)
rgb_img = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
hsv_img = cv2.cvtColor(rgb_img, cv2.COLOR_RGB2HSV)


light_blue = (90, 90, 90)
dark_blue = (128, 255, 255)
```

Saved successfully!

```
dark_green = (70, 255, 255)
mask = cv2.inRange(hsv_img, light_blue, dark_blue)
cv2_imshow(mask)
```

```
result = cv2.bitwise_and(img, img, mask=mask)
cv2_imshow(result)
```

Saved successfully!