Color Recognition

July 23, 2021

[1]:
```
import numpy as np
import pandas as pd
import cv2
```

[2]:
```
img = cv2.imread("test_image.jpeg") #Read image
index=["color", "color_name", "hex", "R", "G", "B"] #Index is the output array␣
 ↪displaying color name and RGB value
csv = pd.read_csv('colors.csv', names=index, header=None)
#Global Variables
clicked = False
r = g = b = xpos = ypos = 0
```

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```
##Color Recognition
def recognize_color(R,G,B):
    minimum = 10000
    for i in range(len(csv)): #Traversing the csv file
        d = abs(R- int(csv.loc[i,"R"])) + abs(G- int(csv.loc[i,"G"]))+ abs(B-␣
 ↪int(csv.loc[i,"B"])) #finding RGB value
        if(d<=minimum):
            minimum = d
            cname = csv.loc[i,"color_name"] #allocating colorname as per RGB
    return cname
```

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##mouse click
def mouse_click(event, x, y, flags, param):
    if event == cv2.EVENT_LBUTTONDBLCLK:
        global b,g,r,xpos,ypos, clicked
        clicked = True
        xpos = x
        ypos = y
        b,g,r = img[y,x]
        b = int(b)
        g = int(g)
        r = int(r)
```

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```
cv2.namedWindow('Color Recognition App')
cv2.setMouseCallback('Color Recognition App', mouse_click)
while(1):
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    cv2.imshow("Color Recognition App",img)
    if (clicked):

        #cv2.rectangle(image, startpoint, endpoint, color, thickness)-1 fills␣
↪entire rectangle
        cv2.rectangle(img,(20,20), (750,60), (b,g,r), -1)
        #Creating text string to display( Color name and RGB values )
        text = recognize_color(r,g,b) + ' R='+ str(r) +  ' G='+ str(g) +  '␣
↪B='+ str(b)

        #cv2.
↪putText(img,text,start,font(0-7),fontScale,color,thickness,lineType )
        cv2.putText(img, text,(50,50),2,0.8,(255,255,255),2,cv2.LINE_AA)
        #For very light colours we will display text in black colour
        if(r+g+b>=600):
            cv2.putText(img, text,(50,50),2,0.8,(0,0,0),2,cv2.LINE_AA)

        clicked=False
        #Break the loop when user hits 'esc' key
    if cv2.waitKey(20) & 0xFF ==27:
        break
cv2.destroyAllWindows()
```

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