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# coding: utf-8

# In[ ]:


import cv2
import numpy as np


camera=cv2.VideoCapture(0)

while(True):
    ret, img = camera.read()

    hsv=cv2.cvtColor(img,cv2.COLOR_BGR2HSV)

    red_lower=np.array([136,87,111],np.uint8)
    red_upper=np.array([180,255,255],np.uint8)


    blue_lower=np.array([99,115,150],np.uint8)
    blue_upper=np.array([110,255,255],np.uint8)


    yellow_lower=np.array([22,60,200],np.uint8)
    yellow_upper=np.array([60,255,255],np.uint8)


    red=cv2.inRange(hsv, red_lower, red_upper)
    blue=cv2.inRange(hsv,blue_lower,blue_upper)
    yellow=cv2.inRange(hsv,yellow_lower,yellow_upper)


    kernal = np.ones((5 ,5), "uint8")

    red=cv2.dilate(red, kernal)
    res=cv2.bitwise_and(img, img, mask = red)

    blue=cv2.dilate(blue,kernal)
    res1=cv2.bitwise_and(img, img, mask = blue)

    yellow=cv2.dilate(yellow,kernal)
    res2=cv2.bitwise_and(img, img, mask = yellow)



(ret,contours,hierarchy)=cv2.findContours(red,cv2.RETR_TREE,cv2.CHAIN_APPROX_SIMPLE)

    for pic, contour in enumerate(contours):
        area = cv2.contourArea(contour)
        if(area>300):
            x,y,w,h = cv2.boundingRect(contour)
            img = cv2.rectangle(img,(x,y),(x+w,y+h),(0,0,255),2)
            cv2.putText(img,"RED",(x,y),cv2.FONT_HERSHEY_SIMPLEX, 0.7, (0,0,255))
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(ret,contours,hierarchy)=cv2.findContours(blue,cv2.RETR_TREE,cv2.CHAIN_APPROX_SIMPLE)
    for pic, contour in enumerate(contours):
        area = cv2.contourArea(contour)
        if(area>300):
            x,y,w,h = cv2.boundingRect(contour)
            img = cv2.rectangle(img,(x,y),(x+w,y+h),(255,0,0),2)
            cv2.putText(img,"Blue",(x,y),cv2.FONT_HERSHEY_SIMPLEX, 0.7, (255,0,0))



(ret,contours,hierarchy)=cv2.findContours(yellow,cv2.RETR_TREE,cv2.CHAIN_APPROX_SIMPLE)
    for pic, contour in enumerate(contours):
        area = cv2.contourArea(contour)
        if(area>300):
            x,y,w,h = cv2.boundingRect(contour)
            img = cv2.rectangle(img,(x,y),(x+w,y+h),(0,255,0),2)
            cv2.putText(img,"Yellow",(x,y),cv2.FONT_HERSHEY_SIMPLEX, 1.0, (0,255,0))



        cv2.imshow("Tracking",img)

        if cv2.waitKey(10) & 0xFF == ord('q'):
            camera.release()
            cv2.destroyAllWindows()
            break
```