import cv2 as cv

import numpy as np

import pyautogui as py

py.FAILSAFE=False

py.PAUSE=0

cam=cv.VideoCapture(0)

lower\_yellow=np.array([20,100,100])

upper\_yellow=np.array([40,255,255])

lower\_green=np.array([50,100,100])

upper\_green=np.array([80,255,255])

while(1):

ret,frame=cam.read()

frame=cv.flip(frame,1,dst=None)

w=frame.shape[1]

h=frame.shape[0]

image\_smooth=cv.GaussianBlur(frame,(7,7),0)

mask=np.zeros\_like(frame)

mask[50:350,50:350]=[255,255,255]

image\_roi=cv.bitwise\_and(image\_smooth,mask)

cv.rectangle(frame,(50,50),(350,350),(0,0,255),2)

cv.line(frame,(250,50),(250,350),(0,0,255),1)

cv.line(frame,(150,50),(150,350),(0,0,255),1)

cv.line(frame,(50,150),(350,150),(0,0,255),1)

cv.line(frame,(50,250),(350,250),(0,0,255),1)

img\_hsv=cv.cvtColor(image\_roi,cv.COLOR\_BGR2HSV)

img\_threshold=cv.inRange(img\_hsv,lower\_yellow,upper\_yellow)

contours,heirachy=cv.findContours(img\_threshold,cv.RETR\_TREE,cv.CHAIN\_APPROX\_NONE)

if(len(contours)!=0):

areas=[cv.contourArea(c) for c in contours]

max\_index=np.argmax(areas)

cnt=contours[max\_index]

M=cv.moments(cnt)

if(M['m00']!=0):

cx=int(M['m10']/M['m00'])

cy=int(M['m01']/M['m00'])

cv.circle(frame,(cx,cy),4,(0,255,0),-1)

if cx<150:

dist\_x=-20

elif cx>250:

dist\_x=20

else:

dist\_x=20

if cy<150:

dist\_y=-20

elif cy>250:

dist\_y=20

else:

dist\_y=0

py.moveRel(dist\_x,dist\_y,duration=0.25)

image\_threshold\_green=cv.inRange(img\_hsv,lower\_green,upper\_green)

contours\_green,heirachy=cv.findContours(image\_threshold\_green,cv.RETR\_TREE,cv.CHAIN\_APPROX\_NONE)

if(len(contours\_green)!=0):

py.click()

cv.waitKey(1000)

cv.imshow('Frame',frame)

key=cv.waitKey(100)

if key==27:

break

cam.release()

cv.destroyAllWindows()