import cvlib as cv

from cvlib.object\_detection import draw\_bbox import cv2 import time import numpy as np

from playsound import playsound

#for PiCamera

#from picamera Import PiCamera

#camera = PiCamera

#camera.start\_preview()

# open webcam

webcam = cv2.VideoCapture(0)

if not webcam.isOpened(): print("Could not open webcam") exit()

t0 = time.time() #gives time in seconds after 1970

#variable dcount stands for how many seconds the person has been standing still for centre0 = np.zeros(2) isDrowning = False

#this loop happens approximately every 1 second, so if a person doesn't move,

#or moves very little for 10seconds, we can say they are drowning

#loop through frames while webcam.isOpened():

# read frame from webcam status, frame = webcam.read()

if not status: print("Could not read frame") exit()

# apply object detection

bbox, label, conf = cv.detect\_common\_objects(frame)

#simplifying for only 1 person

#s = (len(bbox), 2)

if(len(bbox)>0):

bbox0 = bbox[0] #centre = np.zeros(s) centre = [0,0]

#for i in range(0, len(bbox)):

#centre[i]

=[(bbox[i][0]+bbox[i][2])/2,(bbox[i][1]+bbox[i][3])/2 ]

centre =[(bbox0[0]+bbox0[2])/2,(bbox0[1]+bbox0[3])/2 ]

#make vertical and horizontal movement variables hmov = abs(centre[0]-centre0[0]) vmov = abs(centre[1]-centre0[1])

#there is still need to tweek the threshold

#this threshold is for checking how much the centre has moved

x=time.time()

threshold = 10 if(hmov>threshold or vmov>threshold): print(x-t0, 's') t0 = time.time() isDrowning = False

else:

print(x-t0, 's') if((time.time() - t0) > 10): isDrowning = True

#print('bounding box: ', bbox, 'label: ' label ,'confidence:

' conf[0], 'centre: ', centre)

#print(bbox,label ,conf, centre)

print('bbox: ', bbox, 'centre:', centre, 'centre0:', centre0) print('Is he drowning: ', isDrowning)

centre0 = centre

# draw bounding box over detected objects

out = draw\_bbox(frame, bbox, label, conf,isDrowning)

#print('Seconds since last epoch: ', time.time()-t0)

# display output

cv2.imshow("Real-time object detection", out) if(isDrowning == True): playsound(r'C:\Users\HP\Downloads\alarm.mp3')

# press "Q" to stop if cv2.waitKey(1) & 0xFF == ord('q'): break

# release resources webcam.release() cv2.destroyAllWindows()