import cv2

import os

from keras.models import load\_model

import numpy as np

from pygame import mixer

import time

mixer.init()

sound = mixer.Sound('alarm.wav')

face = cv2.CascadeClassifier('haar cascade files\haarcascade\_frontalface\_alt.xml')

leye = cv2.CascadeClassifier('haar cascade files\haarcascade\_lefteye\_2splits.xml')

reye = cv2.CascadeClassifier('haar cascade files\haarcascade\_righteye\_2splits.xml')

lbl=['Close','Open']

model = load\_model('models/cnncat2.h5')

path = os.getcwd()

cap = cv2.VideoCapture(0)

font = cv2.FONT\_HERSHEY\_COMPLEX\_SMALL

count=0

score=0

thicc=2

rpred=[99]

lpred=[99]

while(True):

ret, frame = cap.read()

height,width = frame.shape[:2]

gray = cv2.cvtColor(frame, cv2.COLOR\_BGR2GRAY)

faces = face.detectMultiScale(gray,minNeighbors=5,scaleFactor=1.1,minSize=(25,25))

left\_eye = leye.detectMultiScale(gray)

right\_eye = reye.detectMultiScale(gray)

cv2.rectangle(frame, (0,height-50) , (200,height) , (0,0,0) , thickness=cv2.FILLED )

for (x,y,w,h) in faces:

cv2.rectangle(frame, (x,y) , (x+w,y+h) , (100,100,100) , 1 )

for (x,y,w,h) in right\_eye:

r\_eye=frame[y:y+h,x:x+w]

count=count+1

r\_eye = cv2.cvtColor(r\_eye,cv2.COLOR\_BGR2GRAY)

r\_eye = cv2.resize(r\_eye,(24,24))

r\_eye= r\_eye/255

r\_eye= r\_eye.reshape(24,24,-1)

r\_eye = np.expand\_dims(r\_eye,axis=0)

rpred = model.predict\_classes(r\_eye)

if(rpred[0]==1):

lbl='Open'

if(rpred[0]==0):

lbl='Closed'

break

for (x,y,w,h) in left\_eye:

l\_eye=frame[y:y+h,x:x+w]

count=count+1

l\_eye = cv2.cvtColor(l\_eye,cv2.COLOR\_BGR2GRAY)

l\_eye = cv2.resize(l\_eye,(24,24))

l\_eye= l\_eye/255

l\_eye=l\_eye.reshape(24,24,-1)

l\_eye = np.expand\_dims(l\_eye,axis=0)

lpred = model.predict\_classes(l\_eye)

if(lpred[0]==1):

lbl='Open'

if(lpred[0]==0):

lbl='Closed'

break

if(rpred[0]==0 and lpred[0]==0):

score=score+1

cv2.putText(frame,"Closed",(10,height-20), font, 1,(255,255,255),1,cv2.LINE\_AA)

# if(rpred[0]==1 or lpred[0]==1):

else:

score=score-1

cv2.putText(frame,"Open",(10,height-20), font, 1,(255,255,255),1,cv2.LINE\_AA)

if(score<0):

score=0

cv2.putText(frame,'Score:'+str(score),(100,height-20), font, 1,(255,255,255),1,cv2.LINE\_AA)

if(score>15):

#person is feeling sleepy so we beep the alarm

cv2.imwrite(os.path.join(path,'image.jpg'),frame)

try:

sound.play()

except: # isplaying = False

pass

if(thicc<16):

thicc= thicc+2

else:

thicc=thicc-2

if(thicc<2):

thicc=2

cv2.rectangle(frame,(0,0),(width,height),(0,0,255),thicc)

cv2.imshow('frame',frame)

if cv2.waitKey(1) & 0xFF == ord('q'):

break

cap.release()

cv2.destroyAllWindows()