In [1]:

```
import cv2
import tensorflow as tf
from tensorflow.keras.models import load_model
import numpy as np
from pygame import mixer
```

```
pygame 2.1.2 (SDL 2.0.18, Python 3.9.12)
Hello from the pygame community. https://www.pygame.org/contribute.html (htt
ps://www.pygame.org/contribute.html)
```

In [2]:

```
face_cascade = cv2.CascadeClassifier(cv2.data.haarcascades + 'haarcascade_frontalface_defau
eye_cascade = cv2.CascadeClassifier(cv2.data.haarcascades + 'haarcascade_eye.xml')
model = load_model(r'C:\Users\ARIHANT\Desktop\driver drowsiness\models\model.h5')
```

In [3]:

```
mixer.init()
sound= mixer.Sound(r'C:\Users\ARIHANT\Desktop\driver drowsiness\alarm.wav')
cap = cv2.VideoCapture(0)
Score = 0
while True:
    ret, frame = cap.read()
    height,width = frame.shape[0:2]
    gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
    faces= face_cascade.detectMultiScale(gray, scaleFactor= 1.2, minNeighbors=3)
    eyes= eye_cascade.detectMultiScale(gray, scaleFactor= 1.1, minNeighbors=1)

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

    for (x,y,w,h) in faces:
        cv2.rectangle(frame,pt1=(x,y),pt2=(x+w,y+h), color= (255,0,0), thickness=3 )

    for (ex,ey,ew,eh) in eyes:
        #cv2.rectangle(frame,pt1=(ex,ey),pt2=(ex+ew,ey+eh), color= (255,0,0), thickness=3 )

        # preprocessing steps
        eye= frame[ey:ey+eh,ex:ex+w]
        eye= cv2.resize(eye,(80,80))
        eye= eye/255
        eye= eye.reshape(80,80,3)
        eye= np.expand_dims(eye,axis=0)
        # preprocessing is done now model prediction
        prediction = model.predict(eye)

        # if eyes are closed
        if prediction[0][0]>0.30:
            cv2.putText(frame,'closed',(10,height-20),fontFace=cv2.FONT_HERSHEY_COMPLEX_SMA
                        thickness=1,lineType=cv2.LINE_AA)
            cv2.putText(frame,'Score'+str(Score),(100,height-20),fontFace=cv2.FONT_HERSHEY_
                        thickness=1,lineType=cv2.LINE_AA)
            Score=Score+1
            if(Score>15):
                try:
                    sound.play()
                except:
                    pass

        # if eyes are open
        elif prediction[0][1]>0.90:
            cv2.putText(frame,'open',(10,height-20),fontFace=cv2.FONT_HERSHEY_COMPLEX_SMALL
                        thickness=1,lineType=cv2.LINE_AA)
            cv2.putText(frame,'Score'+str(Score),(100,height-20),fontFace=cv2.FONT_HERSHEY_
                        thickness=1,lineType=cv2.LINE_AA)
            Score = Score-1
            if (Score<0):
                Score=0


    cv2.imshow('frame',frame)
    if cv2.waitKey(33) & 0xFF==ord('q'):
        break

cap.release()
cv2.destroyAllWindows()
```

```
1/1 [==============================] - 5s 5s/step
1/1 [==============================] - 0s 79ms/step
1/1 [==============================] - 0s 71ms/step
1/1 [==============================] - 0s 55ms/step
1/1 [==============================] - 0s 55ms/step
1/1 [==============================] - 0s 53ms/step
1/1 [==============================] - 0s 52ms/step
1/1 [==============================] - 0s 59ms/step
1/1 [==============================] - 0s 100ms/step
1/1 [==============================] - 0s 65ms/step
1/1 [==============================] - 0s 57ms/step
1/1 [==============================] - 0s 74ms/step
1/1 [==============================] - 0s 68ms/step
1/1 [==============================] - 0s 66ms/step
1/1 [==============================] - 0s 62ms/step
1/1 [==============================] - 0s 64ms/step
1/1 [==============================] - 0s 68ms/step
1/1 [==============================] - 0s 57ms/step
1/1 [==============================] - 0s 106ms/step
```

In [ ]: