In [4]:
```
from pygame import mixer
import cv2
import numpy as np
import dlib
from imutils import face_utils
```

In [5]:
```
mixer.init()
sound= mixer.Sound(r'C:\Users\amlan\Driver\alarm.wav')
camera = cv2.VideoCapture(0)
det = dlib.get_frontal_face_detector()
p = dlib.shape_predictor(r"C:\Users\amlan\Documents\shape_predictor_68_face_landmarks.dat") #predict 68 landmarks
s = 0 #for sleep
d = 0 #for drowsiness
a = 0 #for active
post ="" #status of state
color=(0,0,0)

def dist(ptP,ptQ):#two points calculated using euclidean dist
        distance = np.linalg.norm(ptP - ptQ)
        return distance

def blink(p,q,r,s,t,u):
        upward = dist(q,s) + dist(r,t)
        downward = dist(p,u)
        rat = upward/(2.0*downward)


        if(rat>0.25):
                return 2
        elif(rat>0.21 and rat<=0.25):
                return 1
        else:
                return 0


while True:
    ret,f = camera.read()
    g = cv2.cvtColor(f, cv2.COLOR_BGR2GRAY)

    fs = det(g)

    for i in fs:
```

```
        a1 = i.left()
        b1 = i.top()
        a2 = i.right()
        b2 = i.bottom()

        fac_f = f.copy()#copy frames
        cv2.rectangle(fac_f, (a1, b1), (a2, b2), (0, 255, 0), 2)

        l = p(g, i)#landmark
        l = face_utils.shape_to_np(l)#conversion to numpy array


        left = blink(l[36],l[37],
                l[38], l[41], l[40], l[39])
        right = blink(l[42],l[43],
                l[44], l[47], l[46], l[45])

        #Now judge what to do for the eye blinks
        if(left==0 or right==0):
                s+=1
                d=0
                a=0
                if(s>6):
                        post="SLEEPING !!!"
                        color = (255,0,0)
                        sound.play()

        elif(left==1 or right==1):
                s=0
                a=0
                d+=1
                if(d>6):
                        post="Drowsy !"
                        color = (0,0,255)
                        sound.play()

        else:
                d=0
                s=0
                a+=1
                if(a>6):
                        post="Active"
                        color = (0,255,0)
```

```
        cv2.putText(f, post, (100,100), cv2.FONT_HERSHEY_SIMPLEX, 1.2, color,3)

        for n in range(0, 68):
                (a,b) = l[n]
                cv2.circle(fac_f, (a, b), 1, (255, 255, 255), -1)#these are dots of landmarks 68

    cv2.imshow("Frame", f)
    cv2.imshow("detector", fac_f)
    if cv2.waitKey(1) & 0xFF==ord('q'):
        break

camera.release()
cv2.destroyAllWindows()
```

In [11]: