

## LAMPIRAN

### Lampiran 1 : Program Python

```
from scipy.spatial import distance
from imutils import face_utils
from imutils.video import VideoStream, FPS
import numpy as np
import imutils
import dlib
import cv2
import pygame
import time
import telebot

tb =
telebot.TeleBot("1132103732:AAE5HYmME4lj1B56kOYGmsU3MDxT8Ttnkw
0")
chat_id = "398755730"

pygame.mixer.init()
pygame.mixer.music.load('audio/alert.wav')

def eye_aspect_ratio(eye):
    A = distance.euclidean(eye[1], eye[5])
    B = distance.euclidean(eye[2], eye[4])
    C = distance.euclidean(eye[0], eye[3])
    ear = (A + B) / (2.0 * C)
    return ear

counter=0
thresh = 0.3
```

```

frame_check = 3
detect = dlib.get_frontal_face_detector()
predict = dlib.shape_predictor("shape_predictor_68_face_landmarks.dat")

(lStart, lEnd) = face_utils.FACIAL_LANDMARKS_IDXS["left_eye"]
(rStart, rEnd) = face_utils.FACIAL_LANDMARKS_IDXS["right_eye"]

cap = VideoStream(src=0).start()
filestream = False
fps= FPS().start()
while True:
    frame=cap.read()
    frame = imutils.resize(frame, width=450)
    gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
    subjects = detect(gray, 0)
    for subject in subjects:
        shape = predict(gray, subject)
        shape = face_utils.shape_to_np(shape)#converting to NumPy Array
        leftEye = shape[lStart:lEnd]
        rightEye = shape[rStart:rEnd]
        leftEAR = eye_aspect_ratio(leftEye)
        rightEAR = eye_aspect_ratio(rightEye)
        ear = (leftEAR + rightEAR) / 2.0
        leftEyeHull = cv2.convexHull(leftEye)
        rightEyeHull = cv2.convexHull(rightEye)
        cv2.drawContours(frame, [leftEyeHull], -1, (0, 255, 0), 1)
        cv2.drawContours(frame, [rightEyeHull], -1, (0, 255, 0), 1)
        if ear < thresh:
            counter += 1
            print (counter)
            if counter >= frame_check:

```

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pygame.mixer.music.play(-1)
cv2.putText(frame, "Pengemudi Mengantuk", (150,200),
cv2.FONT_HERSHEY_SIMPLEX, 1.5, (0,0,255), 2)
print('Mengantuk')
frame2 = cap.read()
cv2.putText(frame2, "EAR: {:.2f}".format(ear), (300, 30),
cv2.FONT_HERSHEY_SIMPLEX, 0.7, (0, 0, 255), 2)
cv2.putText(frame2, "Pengemudi Mengantuk", (150,200),
cv2.FONT_HERSHEY_SIMPLEX, 1.5, (0,0,255), 2)
time.sleep(.3)
img_name = "Mengantuk.png"
cv2.imwrite(img_name, frame2)
print("terfoto")
try:
    foto = open('Mengantuk.png', 'rb')
    tb.send_photo(chat_id, foto)
    tb.send_message(chat_id, "Mengantuk")
    print("terkirim")
except Exception as e:
    print(e)
else:
    pygame.mixer.music.stop()
    counter = 0

cv2.putText(frame, "EAR: {:.2f}".format(ear), (300, 30),
cv2.FONT_HERSHEY_SIMPLEX, 0.7, (0, 0, 255), 2)

```

```

cv2.imshow("Frame", frame)
fps.update()
key = cv2.waitKey(1) & 0xFF
if key == ord("q"):

```

```
cv2.destroyAllWindows()  
fps.stop()  
cap.release()  
break
```



## DAFTAR RIWAYAT HIDUP

### A. Biodata Pribadi

1. Nama lengkap : Zam Zam Kharisma Abadi
2. Tempat/ tanggal lahir : Lamongan, 30-04-1997
3. Jenis Kelamin : Laki – laki
4. Kewarganegaraan : Indonesia
5. Tinggi, Berat badan : 165 cm, 45 kg
6. Agama : Islam
7. Status : Belum Menikah
8. Alamat : Dusun Senden RT.03 RW.04 Desa Glagah  
Kec. Glagah - Lamongan
9. No. Telp : 085 645 139 255
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### B. Riwayat Pendidikan

1. MI : MI Falakhiyah Glagah 2003-2009
2. SMP : SMP Negeri 1 Glagah 2009-2012
3. SMK : SMK Muhammadiyah 1 Gresik 2012-2015
4. Perguruan Tinggi : Universitas Muhammdiyah Gresik,  
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