Assignment 6

Smile Detection

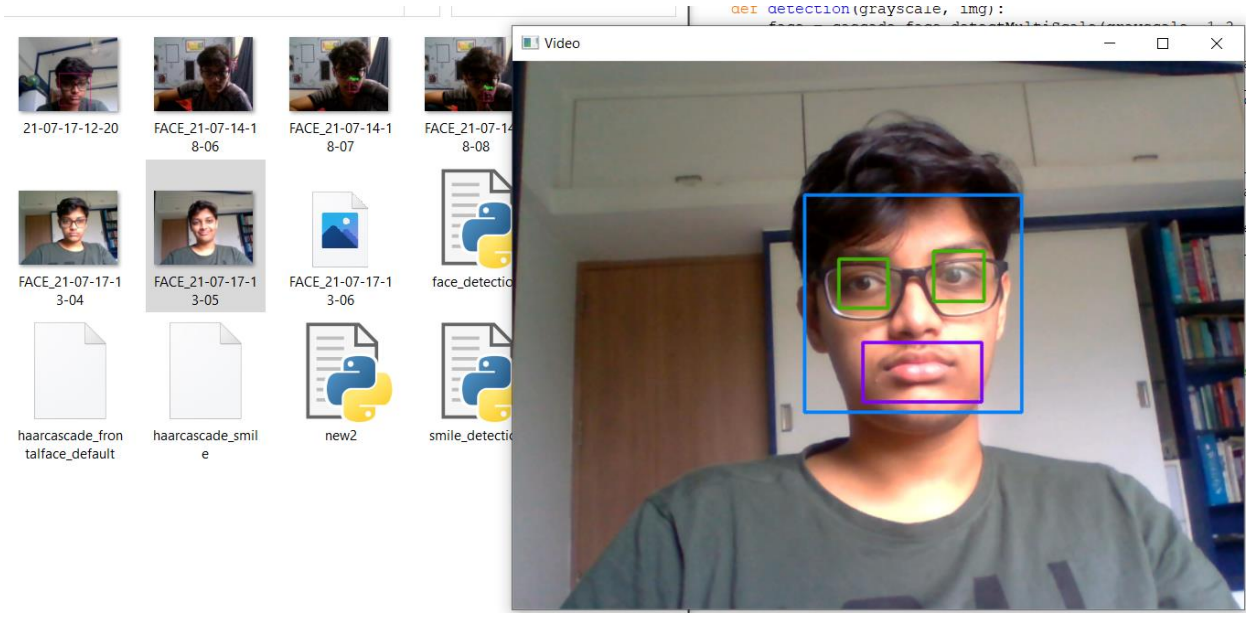
Code:-

```
import cv2
import datetime
cascade_face = cv2.CascadeClassifier('haarcascade_frontalface_default.xml')
cascade_eye = cv2.CascadeClassifier('haarcascade_eye.xml')
cascade_smile = cv2.CascadeClassifier('haarcascade_smile.xml')
vc = cv2.VideoCapture(0)
while True:
    def detection(grayscale, img):
        face = cascade_face.detectMultiScale(grayscale, 1.3, 5)
        for (x_face, y_face, w_face, h_face) in face:
            cv2.rectangle(img, (x_face, y_face), (x_face+w_face, y_face+h_face), (255, 130, 0), 2)
            ri_grayscale = grayscale[y_face:y_face+h_face, x_face:x_face+w_face]
            ri_color = img[y_face:y_face+h_face, x_face:x_face+w_face]
            eye = cascade_eye.detectMultiScale(ri_grayscale, 1.2, 18)

            for (x_eye, y_eye, w_eye, h_eye) in eye:
                cv2.rectangle(ri_color,(x_eye, y_eye),(x_eye+w_eye, y_eye+h_eye), (0, 180, 60), 2)
            smile = cascade_smile.detectMultiScale(ri_grayscale, 1.7, 20)

            for (x_smile, y_smile, w_smile, h_smile) in smile:
                cv2.rectangle(ri_color,(x_smile, y_smile),(x_smile+w_smile, y_smile+h_smile), (255, 0, 130),
2)
        return img
```

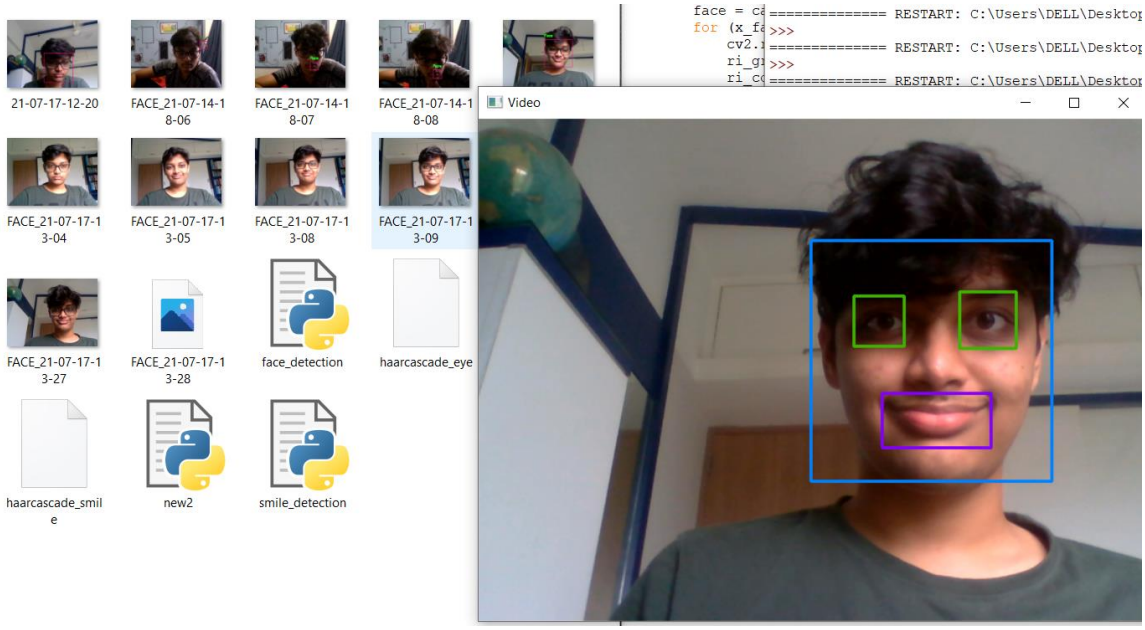
```
    _, img = vc.read()
    grayscale = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)
    picname=datetime.datetime.now().strftime("FACE_%y-%m-%d-%H-%M")
    cv2.imwrite(picname+".jpg",img)
    final = detection(grayscale, img)
    cv2.imshow('Video', final)
    if cv2.waitKey(1) & 0xFF == ord('q'):
        break


vc.release()
cv2.destroyAllWindows()
```

output:-

it will recognize my mouth but not take a pic because I am not smiling



If your smile is comically wide, it can detect your smile and captures image


21-07-17-12-20
FACE_21-07-14-18-06
FACE_21-07-14-18-07
FACE_21-07-14-18-08
FACE_21-07-17-13-04
FACE_21-07-17-13-05
FACE_21-07-17-13-08
FACE_21-07-17-13-09
FACE_21-07-17-13-27
FACE_21-07-17-13-28
face_detection
haarcascade_eye
haarcascade_smile
new2
smile_detection
face = ca
for (x_fa
cv2.r
ri_gr
ri_co
========== RESTART: C:\Users\DELL\Desktop
>>>
========== RESTART: C:\Users\DELL\Desktop
>>>
========== RESTART: C:\Users\DELL\Desktop
Video