Assignment 6

Develop a python code to detect any object using Haar cascade classifier.

- Using Haarcascade classifier detecting car and face in the recorded video.

Code:

```python
import cv2

import time

import numpy as np


car_classifier = cv2.CascadeClassifier('haarcascade_car.xml')

face_classifier=cv2.CascadeClassifier("haarcascade_frontalface_default.xml")


#It will read the first frame/image of the video

cap = cv2.VideoCapture('vehicle2.mp4')


while True:

    #capture the first frame

    ret, frame = cap.read()

    gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)

    cv2.imshow('cap',gray)
```

```python
# Pass frame to our car classifier
cars = car_classifier.detectMultiScale(gray, 1.3, 2)
faces=face_classifier.detectMultiScale(gray,1.3,5)
print(faces)


#drawing rectangle boundries for the detected face
for (x,y,w,h) in cars:
    cv2.rectangle(frame, (x, y), (x+w, y+h), (0, 255, 255), 2)
    cv2.imshow('Cars', frame)
    cv2.putText(frame, 'Car', (x,y-10),
cv2.FONT_HERSHEY_COMPLEX_SMALL, 1, (255,255,0), 4)
    # picname=datetime.datetime.now().strftime("car%y-%m-%d-%H-%M")
    # cv2.imwrite(picname+".jpg",frame)
for(x,y,w,h) in faces:
    cv2.rectangle(frame, (x,y), (x+w,y+h), (17,0,255), 2)
    cv2.imshow('Face detection', frame)
    cv2.putText(frame, 'Face', (x,y-10),
cv2.FONT_HERSHEY_COMPLEX_SMALL, 1, (255,255,0), 4)



#waitKey(1)- for every 1 millisecond new frame will be captured
Key=cv2.waitKey(1)
if Key==ord('q'):
    #release the camera
    cap.release()
    #destroy all windows
    cv2.destroyAllWindows()
```
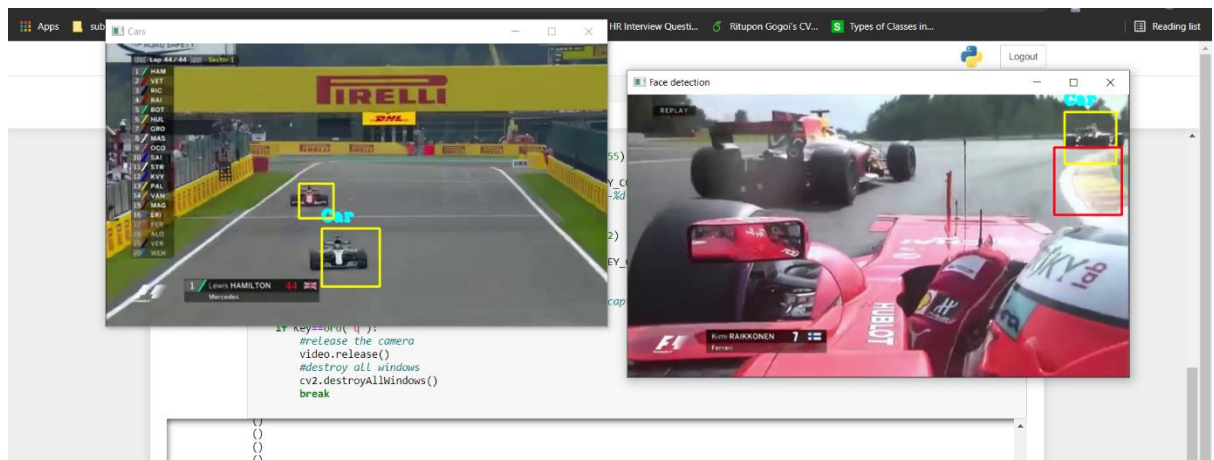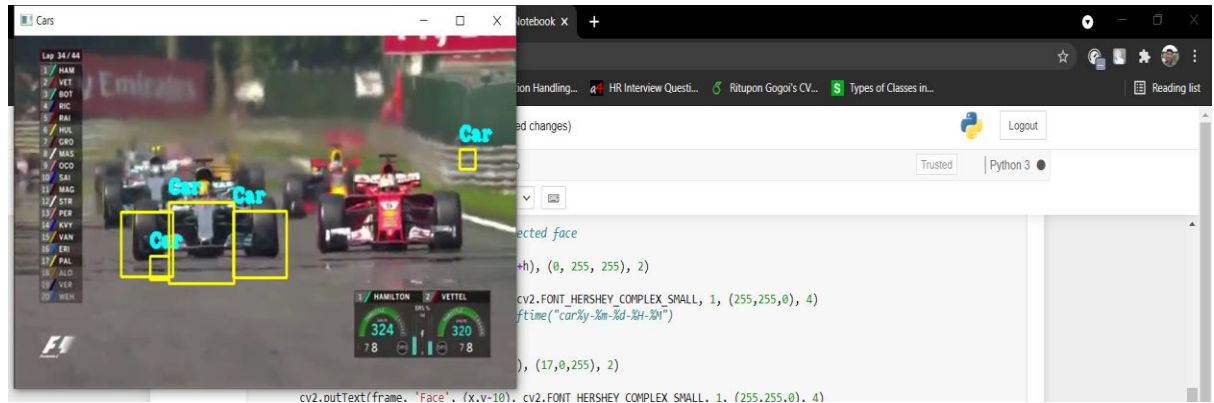
break

Output:

When face is detected Face detection window will be popup like this.

```
                                              ray, 1.3, 2)
                                              ray,1.3,5)

                                  ected face
                                    +h), (0, 255, 255), 2)
                                    cv2.FONT_HERSHEY_COMPLEX_SMALL, 1, (255,255,0), 4)
                                    ftime("car%y-%m-%d-%H-%M")
            # cv2.imwrite(picname+".jpg",frame)
    for(x,y,w,h) in faces:
        cv2.rectangle(frame, (x,y), (x+w,y+h), (17,0,255), 2)
        cv2.imshow('Face detection', frame)
        cv2.putText(frame, 'Face', (x,y-10), cv2.FONT_HERSHEY_COMPLEX_SMALL, 1, (255,255,0), 4)


    #waitKey(1)- for every 1 millisecond nw frame will be captured
    Key=cv2.waitKey(1)
    if Key==ord('q'):
        #release the camera
        cap.release()
        #destroy all windows
        cv2.destroyAllWindows()
        break

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```