Smart Bridge Externship Program

Internet of Things

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Assignment – 6

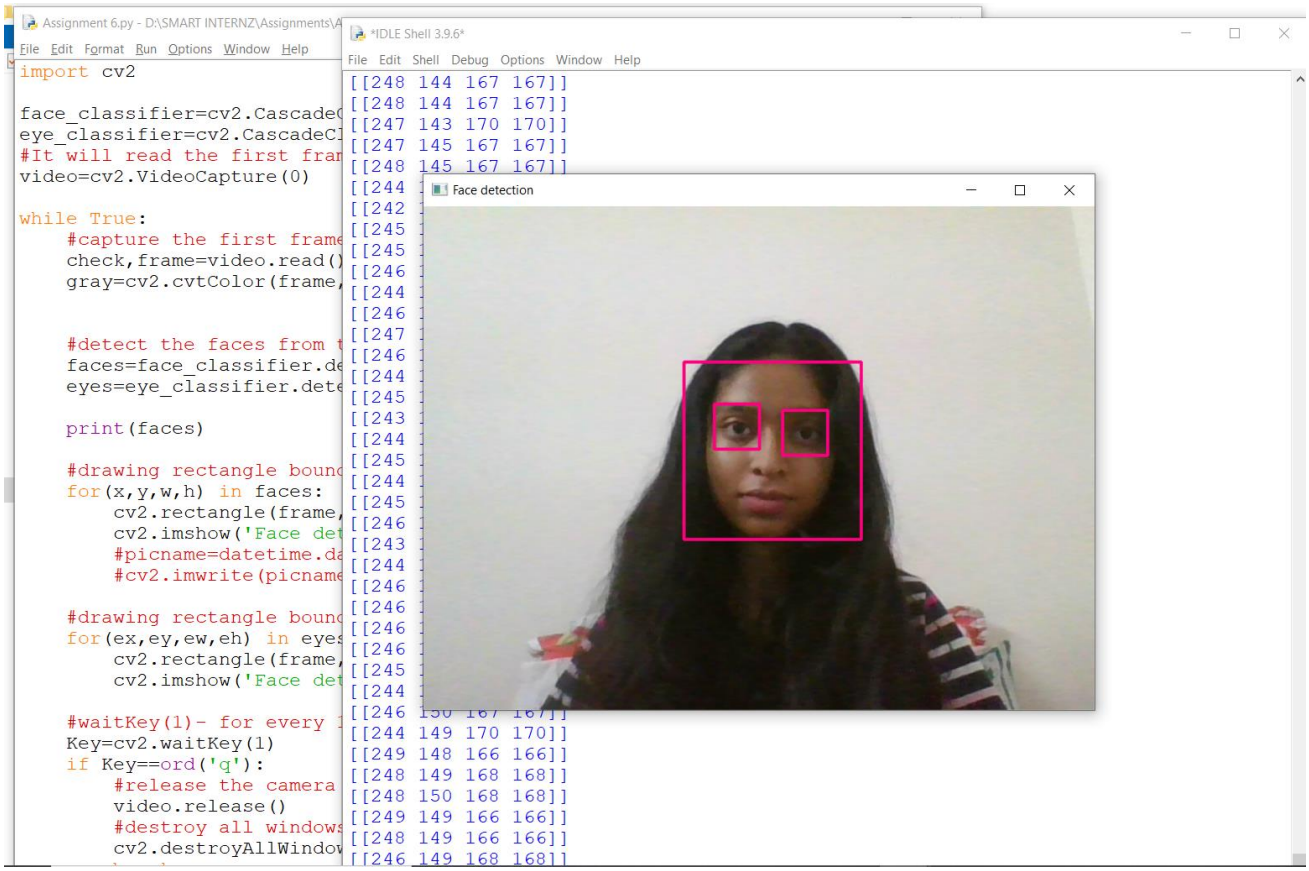
Q. Develop a python code to detect any object using Haar cascade classifier.

Python Code for Live Face Detection:

```
import cv2

face_classifier=cv2.CascadeClassifier("haarcascade_frontalface_default.xml")
eye_classifier=cv2.CascadeClassifier("haarcascade_eye.xml")
#It will read the first frame/image of the video
video=cv2.VideoCapture(0)

while True:
    #capture the first frame
    check,frame=video.read()
    gray=cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
```

```
#detect the faces from the video using detectMultiScale function
faces=face_classifier.detectMultiScale(gray,1.3,5)
eyes=eye_classifier.detectMultiScale(gray,1.3,5)

print(faces)

#drawing rectangle boundries for the detected face
for(x,y,w,h) in faces:
    cv2.rectangle(frame, (x,y), (x+w,y+h), (127,0,255), 2)
    cv2.imshow('Face detection', frame)
    #picname=datetime.datetime.now().strftime("%y-%m-%d-%H-%M")
    #cv2.imwrite(picname+".jpg",frame)

#drawing rectangle boundries for the detected eyes
for(ex,ey,ew,eh) in eyes:
    cv2.rectangle(frame, (ex,ey), (ex+ew,ey+eh), (127,0,255), 2)
    cv2.imshow('Face detection', frame)

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

Output:



Python Code for Mp4 Video:

```
import cv2

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

video=cv2.VideoCapture("car.avi")
frame_width = int(video.get(3))
frame_height = int(video.get(4))
out = cv2.VideoWriter('Output.avi',cv2.VideoWriter_fourcc('M','J','P','G'), 10,
(frame_width,frame_height))

while True:
```

```
#capture the first frame
check,frame=video.read()
gray=cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
cv2.imshow('frame', gray)

#detect the faces from the video using detectMultiScale function
cars=car_classifier.detectMultiScale(gray,1.3,5)
print(cars)

#drawing rectangle boundries for the detected face
for(x,y,w,h) in cars:
    cv2.rectangle(frame, (x,y), (x+w,y+h), (255,0,0), 2)
    cv2.imshow('Face detection', frame)
    out.write(frame)
    #picname=datetime.datetime.now().strftime("%y-%m-%d-%H-%M")
    #cv2.imwrite(picname+".jpg",frame)


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