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

Code:

import cv2

import datetime

face\_classifier=cv2.CascadeClassifier("haarcascade\_frontalface\_default.xml")

eye\_classifier=cv2.CascadeClassifier("haarcascade\_eye.xml")

smile\_classifier=cv2.CascadeClassifier("haarcascade\_smile.xml")

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

video=cv2.VideoCapture('video smile.mp4')

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)

smiles=smile\_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)

cv2.putText(frame, 'Face',(x,y-20),cv2.FONT\_HERSHEY\_SIMPLEX,0.8,(0,255,0),2)

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('eye detection', frame)

cv2.putText(frame,'eyes',(ex,ey-20),cv2.FONT\_HERSHEY\_SIMPLEX,0.8,(0,255,0),2)

#drawing rectangle boundries for the detected smile

for (sx, sy, sw, sh) in smiles:

cv2.rectangle(frame,(sx,sy),((sx+sw),(sy+sh)),(0,0,255),2)

cv2.imshow('Smile detection', frame)

cv2.putText(frame,'Smile',(sx,sy-20),cv2.FONT\_HERSHEY\_SIMPLEX,0.8,(0,255,0),2)

#waitKey(1)- for every 5 millisecond new frame will be captured

Key=cv2.waitKey(5)

if Key==ord('q'):

#release the camera

video.release()

#destroy all windows

cv2.destroyAllWindows()

break

SIMULATION:





