ASSIGNMENT - 6

NAME: D V MOUSHIK

MAIL: Koushik.18bes7025@vitap.ac.in

Assignment-6:

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

Python Code:

```python
import cv2

# capture frames from a video
cap = cv2.VideoCapture( 'cars.mp4')

# Trained XML classifiers describes some features of some object we want to detect
car_cascade = cv2.CascadeClassifier('cars.xml')

# loop runs if capturing has been initialized.
while True:
    # reads frames from a video
    ret, frames = cap.read()
    # convert to gray scale of each frames
    gray = cv2.cvtColor(frames, cv2.COLOR_BGR2GRAY)
    # Detects cars of different sizes in the input image
    cars = car_cascade.detectMultiScale( gray, 1.1, 1)
    # To draw a rectangle in each cars
    for (x,y,w,h) in cars:
        cv2.rectangle(frames,(x,y),(x+w,y+h),(0,0,255),2)
        font = cv2.FONT_HERSHEY_DUPLEX
        cv2.putText(frames, 'Car', (x + 6, y - 6), font, 0.5, (0, 0, 255), 1)
        # Display frames in a window
        cv2.imshow('Car Detection', frames)
        #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
```

import cv2 import
numpy as np

# Create our body classifier body_classifier =
cv2.CascadeClassifier('haarcascade_fullbody.xml')
# Initiate video capture for video file cap
= cv2.VideoCapture('cars.mp4') # Loop

once video is successfully loaded while
cap.isOpened():

```python
    # Read first frame

    ret, frame = cap.read()

        #frame = cv2.resize(frame, None,fx=0.5, fy=0.5, interpolation =
cv2.INTER_LINEAR)
    gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)

    # Pass frame to our body classifier bodies =
    body_classifier.detectMultiScale(gray, 1.2, 3)

    # Extract bounding boxes for any bodies identified
    for (x,y,w,h) in bodies:
        cv2.rectangle(frame, (x, y), (x+w, y+h), (0, 255, 255), 2) cv2.imshow('car
        detection', frame) cv2.putText(frame,    'cars', (x,y-10),
cv2.FONT_HERSHEY_SIMPLEX, 1, (255,0,0), 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 allwindows
    cv2.destroyAllWindows() break
```

OUTPUT: