Practical 6

Aim: - Detect faces with Haar cascades.

Pre Requisites

```
pip install opencv-python
```

Code: (Make sure all the files are in the same directory)

```
import numpy as np
import cv2

# First we need to load the required XML classifiers. Then load
our input image (or video) in grayscale mode.

face_cascade =
cv2.CascadeClassifier("haarcascade_frontalface_default.xml")
eye_cascade = cv2.CascadeClassifier("haarcascade_eye.xml")

img = cv2.imread("test-image.jpg")
gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)

# Now we find the faces in the image. If faces are found, it
returns the positions of detected faces as Rect(x,y,w,h). Once we
get these locations, we can create a ROI for the face and apply
eye detection on this ROI (since eyes are always on the face !!!
).
faces = face_cascade.detectMultiScale(gray, 1.3, 5)
for x, y, w, h in faces:
    img = cv2.rectangle(img, (x, y), (x + w, y + h), (255, 0, 0),
2)
    roi_gray = gray[y : y + h, x : x + w]
    roi_color = img[y : y + h, x : x + w]
    eyes = eye_cascade.detectMultiScale(roi_gray)
    for ex, ey, ew, eh in eyes:
    cv2.rectangle(roi_color, (ex, ey), (ex + ew, ey + eh), (0,
255, 0), 2)

cv2.imshow("img", img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Output: