EXP-10 PERFORM FACE DETECTION ON YOUR FAMILY PHOTOS

AIM :

To perform face detection on your family photos.

ALGORITHM :

STEP 1 : Read the input image and convert it from BGR to RGB.

STEP 2: Load the pre-trained face detection model.

STEP 3 : Detect faces in the image.

STEP 4 : Load the image with PIL and draw rectangles around detected faces.

STEP 5 : Display the image with detected faces using matplotlib.

STEP 6 : Save the output image with detected faces and print the save location

CODE :

```
# Importing necessary libraries
import cv2
from PIL import Image, ImageDraw
import matplotlib.pyplot as plt
import numpy as np
# Reading and converting the image
image_path = 'input2.jpg'
img = cv2.imread(image_path)
img_rgb = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
# Loading the face detection model
face_cascade = cv2.CascadeClassifier(cv2.data.haarcascades +
'haarcascade_frontalface_default.xml')
# Detecting faces
faces = face_cascade.detectMultiScale(img_rgb, scaleFactor=1.1, minNeighbors=5,
minSize=(30, 30))
# Loading the image with PIL and drawing rectangles
pil_image = Image.open(image_path)
```

```
draw = ImageDraw.Draw(pil_image)
for (x, y, w, h) in faces:
    draw.rectangle([(x, y), (x+w, y+h)], outline="red", width=2)
# Displaying the image with detected faces
plt.figure(figsize=(8, 6))
plt.imshow(pil_image)
plt.axis('off')
plt.show()
# Saving the output image
output_image_path = 'output_image_with_faces_detected.jpg'
pil_image.save(output_image_path)
print(f"Image with faces detected saved at: {output_image_path}")
```

OUTPUT :

RESULT :

To perform face decection on your family photos has been executed successfully