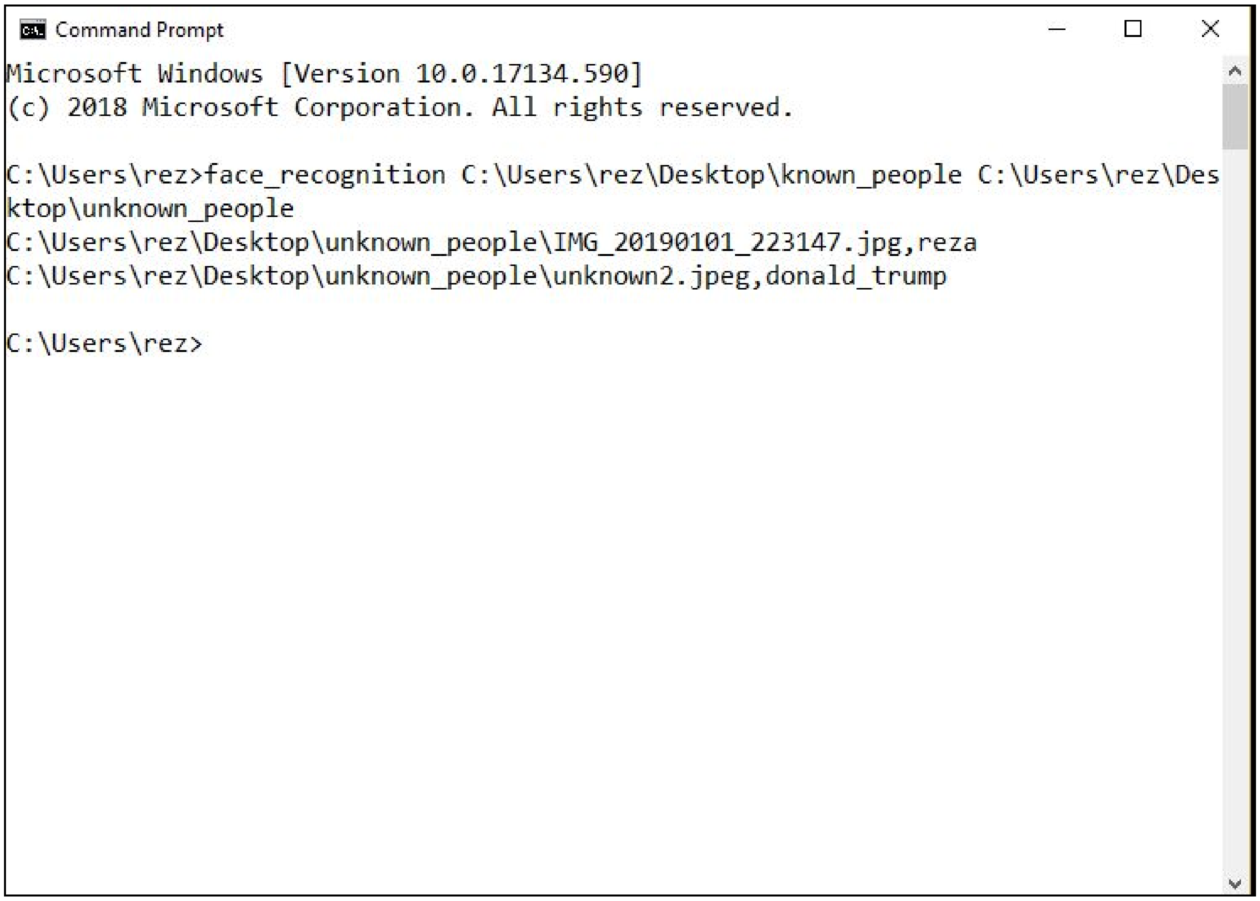
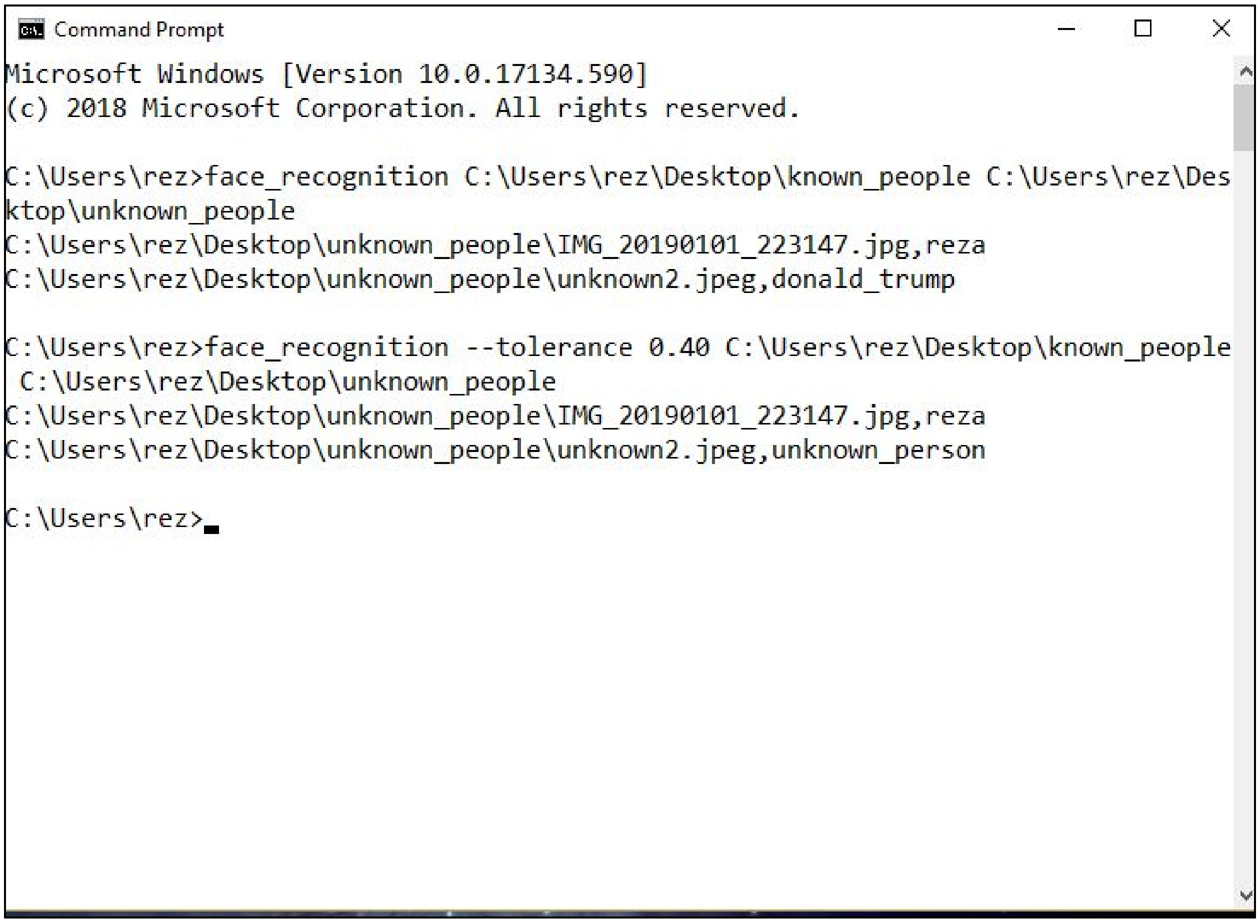
1. Running the command *face_recognition* with the folder of known people (donald trump, reza) yields two results, with the recognition of the two unknown files, labeling each with names.



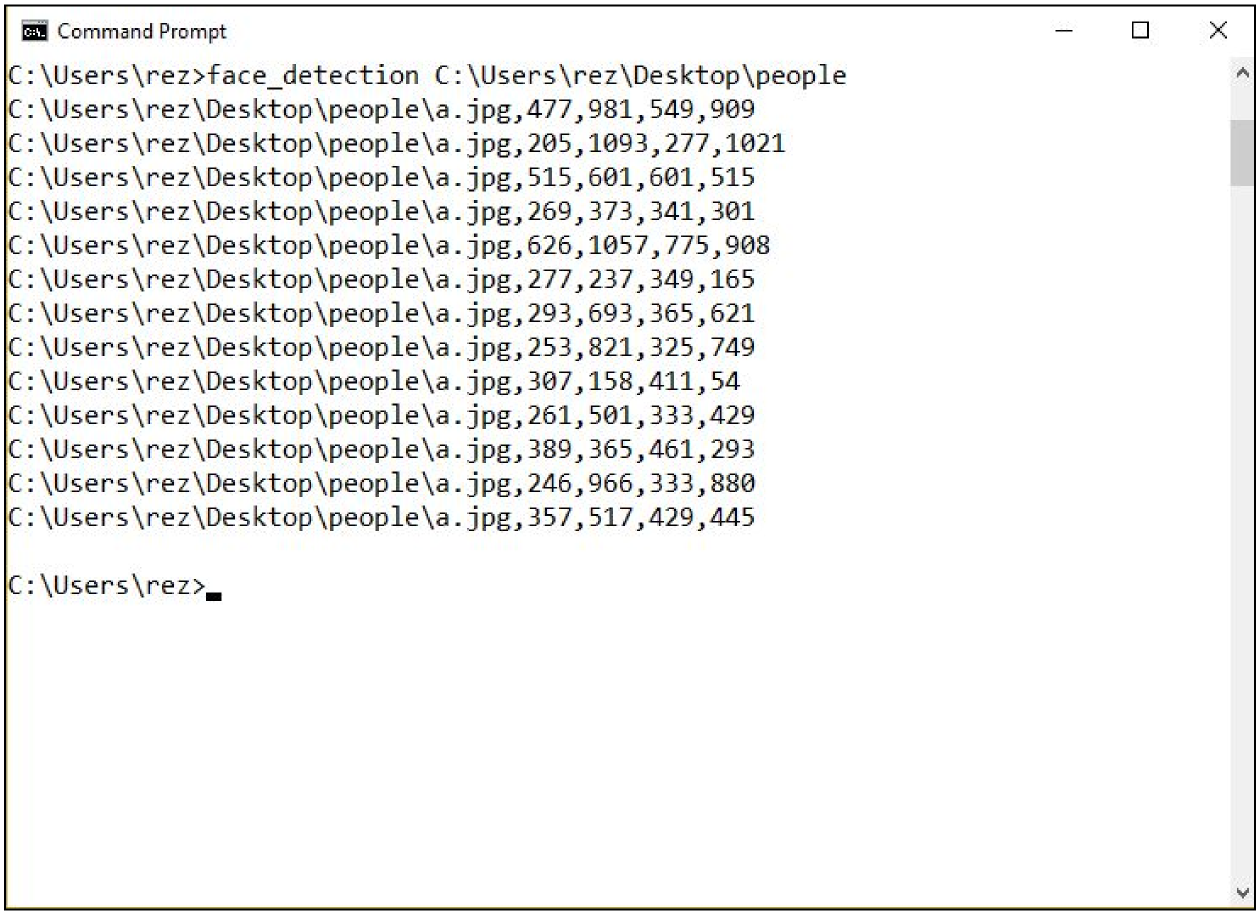
```
Microsoft Windows [Version 10.0.17134.590]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\rez>face_recognition C:\Users\rez\Desktop\known_people C:\Users\rez\Des
ktop\unknown_people
C:\Users\rez\Desktop\unknown_people\IMG_20190101_223147.jpg,reza
C:\Users\rez\Desktop\unknown_people\unknown2.jpeg,donald_trump

C:\Users\rez>
```

Running the command with *tolerance 0.4* yields a different result and in this case, does not recognize trump. This is because 0.4 makes face comparison much more strict.



```
Microsoft Windows [Version 10.0.17134.590]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\rez>face_recognition C:\Users\rez\Desktop\known_people C:\Users\rez\Des
ktop\unknown_people
C:\Users\rez\Desktop\unknown_people\IMG_20190101_223147.jpg,reza
C:\Users\rez\Desktop\unknown_people\unknown2.jpeg,donald_trump

C:\Users\rez>face_recognition --tolerance 0.40 C:\Users\rez\Desktop\known_people
 C:\Users\rez\Desktop\unknown_people
C:\Users\rez\Desktop\unknown_people\IMG_20190101_223147.jpg,reza
C:\Users\rez\Desktop\unknown_people\unknown2.jpeg,unknown_person

C:\Users\rez>
```

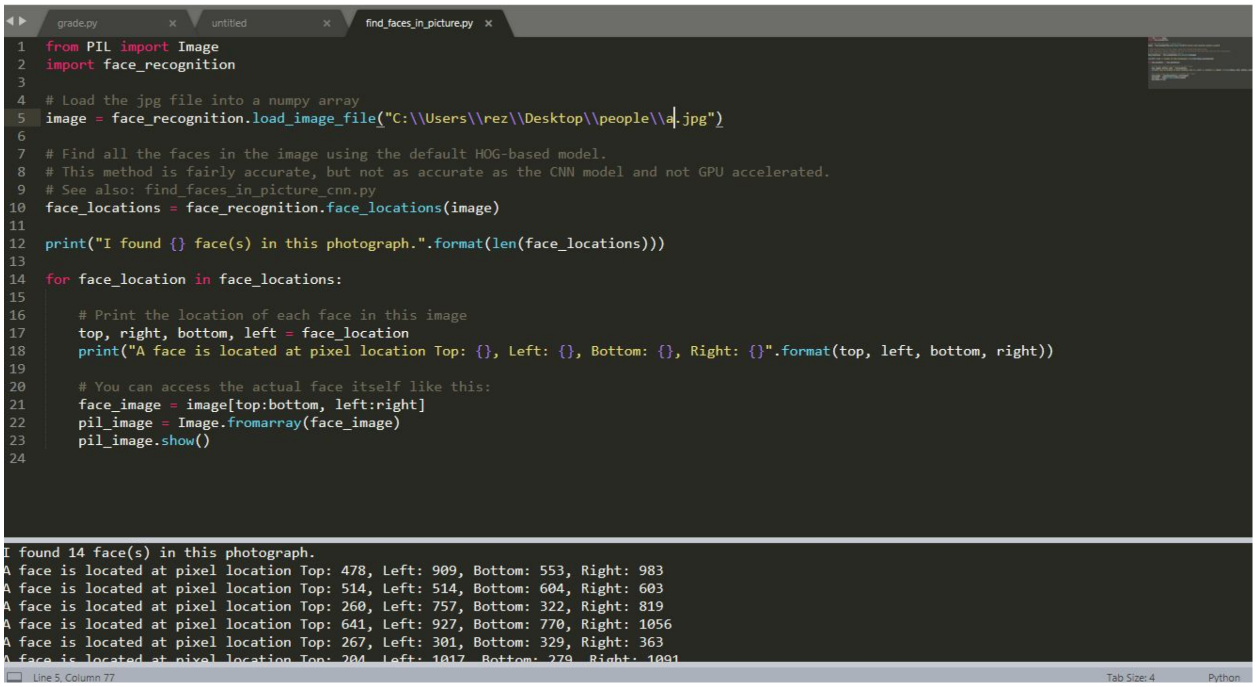
2. Running the command face_detection with a folder containing an image full of people yields multiple results, each being the coordinates of a detected face in the photograph.



```
C:\Users\rez>face_detection C:\Users\rez\Desktop\people
C:\Users\rez\Desktop\people\a.jpg,477,981,549,909
C:\Users\rez\Desktop\people\a.jpg,205,1093,277,1021
C:\Users\rez\Desktop\people\a.jpg,515,601,601,515
C:\Users\rez\Desktop\people\a.jpg,269,373,341,301
C:\Users\rez\Desktop\people\a.jpg,626,1057,775,908
C:\Users\rez\Desktop\people\a.jpg,277,237,349,165
C:\Users\rez\Desktop\people\a.jpg,293,693,365,621
C:\Users\rez\Desktop\people\a.jpg,253,821,325,749
C:\Users\rez\Desktop\people\a.jpg,307,158,411,54
C:\Users\rez\Desktop\people\a.jpg,261,501,333,429
C:\Users\rez\Desktop\people\a.jpg,389,365,461,293
C:\Users\rez\Desktop\people\a.jpg,246,966,333,880
C:\Users\rez\Desktop\people\a.jpg,357,517,429,445

C:\Users\rez>
```

3. By running facerec_from_webcam_faster.py from the command line you can run face recognition on webcam. Please look at webcam.gif

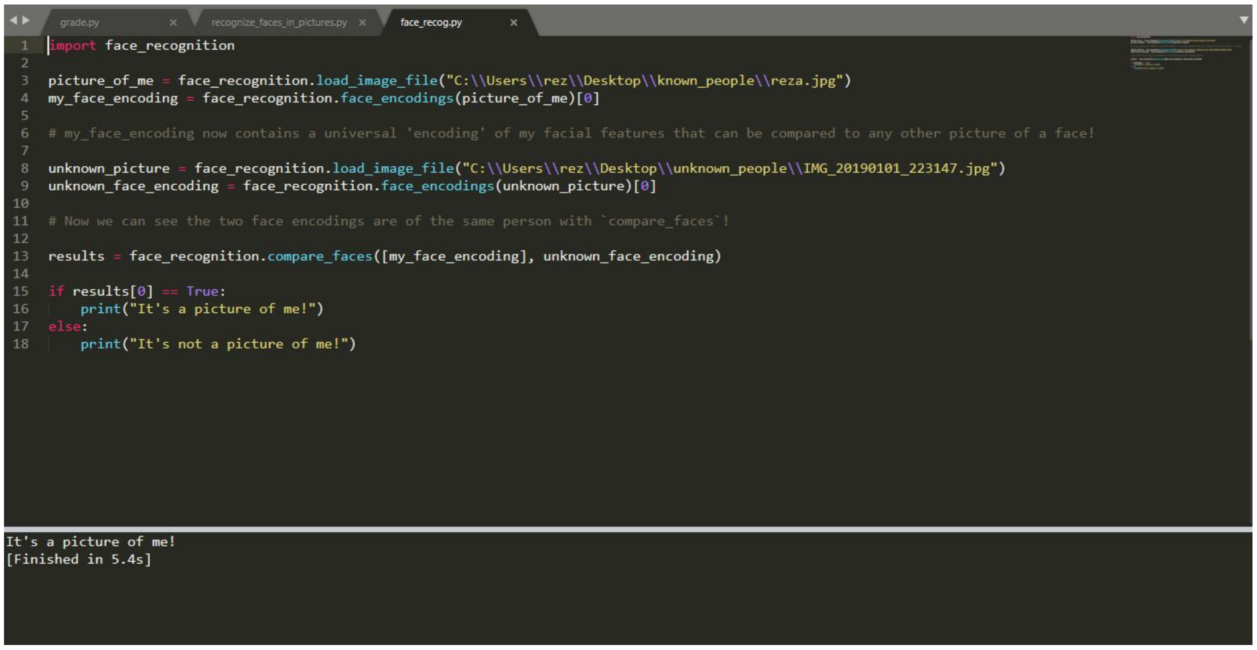
4. Running find_faces_in_picture.py in python. This yields 14 detected faces for a.jpg.



```python
from PIL import Image
import face_recognition

# Load the jpg file into a numpy array
image = face_recognition.load_image_file("C:\\Users\\rez\\Desktop\\people\\a.jpg")

# Find all the faces in the image using the default HOG-based model.
# This method is fairly accurate, but not as accurate as the CNN model and not GPU accelerated.
# See also: find_faces_in_picture_cnn.py
face_locations = face_recognition.face_locations(image)

print("I found {} face(s) in this photograph.".format(len(face_locations)))

for face_location in face_locations:

    # Print the location of each face in this image
    top, right, bottom, left = face_location
    print("A face is located at pixel location Top: {}, Left: {}, Bottom: {}, Right: {}".format(top, left, bottom, right))

    # You can access the actual face itself like this:
    face_image = image[top:bottom, left:right]
    pil_image = Image.fromarray(face_image)
    pil_image.show()

```

```
I found 14 face(s) in this photograph.
A face is located at pixel location Top: 478, Left: 909, Bottom: 553, Right: 983
A face is located at pixel location Top: 514, Left: 514, Bottom: 604, Right: 603
A face is located at pixel location Top: 260, Left: 757, Bottom: 322, Right: 819
A face is located at pixel location Top: 641, Left: 927, Bottom: 770, Right: 1056
A face is located at pixel location Top: 267, Left: 301, Bottom: 329, Right: 363
A face is located at pixel location Top: 204, Left: 1017, Bottom: 279, Right: 1091
```

Running face_recog.py recognizes the face by yielding ‘It is a picture of me’ if the program finds the same person in the unknown file.



```python
import face_recognition

picture_of_me = face_recognition.load_image_file("C:\\Users\\rez\\Desktop\\known_people\\reza.jpg")
my_face_encoding = face_recognition.face_encodings(picture_of_me)[0]

# my_face_encoding now contains a universal 'encoding' of my facial features that can be compared to any other picture of a face!

unknown_picture = face_recognition.load_image_file("C:\\Users\\rez\\Desktop\\unknown_people\\IMG_20190101_223147.jpg")
unknown_face_encoding = face_recognition.face_encodings(unknown_picture)[0]

# Now we can see the two face encodings are of the same person with `compare_faces`!

results = face_recognition.compare_faces([my_face_encoding], unknown_face_encoding)

if results[0] == True:
    print("It's a picture of me!")
else:
    print("It's not a picture of me!")
```

```
It's a picture of me!
[Finished in 5.4s]
```