Cropping the faces with OpenCv and forming the new dataset of male and female images

Data Source: [https://data.vision.ee.ethz.ch/cvl/rrothe/imdb-wiki/ (https://data.vision.ee.ethz.ch/cvl/rrothe/imdb-wiki/)](https://data.vision.ee.ethz.ch/cvl/rrothe/imdb-wiki/)

Import required libraries

In [1]:

```
import numpy as np
import cv2
import matplotlib.pyplot as plt

%matplotlib inline
```

List all the unstructured image data

In [2]:

```
from glob import glob
```

In [7]:

```
male_path = glob('./Data/Male-Pictures/*.jpg')
female_path = glob('./Data/Female-Pictures/*.jpg')
```

In [8]:

```
len(male_path), len(female_path)
```

Out[8]:

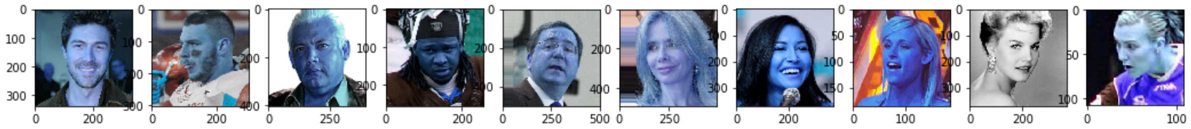
```
(7000, 7000)
```

Load sample images using openCv

In [17]:
```
plt.figure(figsize=(18,18))

plt.subplot(1,10,1)
plt.imshow(cv2.imread(male_path[0]))
plt.subplot(1,10,2)
plt.imshow(cv2.imread(male_path[10]))
plt.subplot(1,10,3)
plt.imshow(cv2.imread(male_path[195]))
plt.subplot(1,10,4)
plt.imshow(cv2.imread(male_path[4190]))
plt.subplot(1,10,5)
plt.imshow(cv2.imread(male_path[1950]))
plt.subplot(1,10,6)
plt.imshow(cv2.imread(female_path[0]))
plt.subplot(1,10,7)
plt.imshow(cv2.imread(female_path[192]))
plt.subplot(1,10,8)
plt.imshow(cv2.imread(female_path[10]))
plt.subplot(1,10,9)
plt.imshow(cv2.imread(female_path[1005]))
plt.subplot(1,10,10)
plt.imshow(cv2.imread(female_path[894]))
```

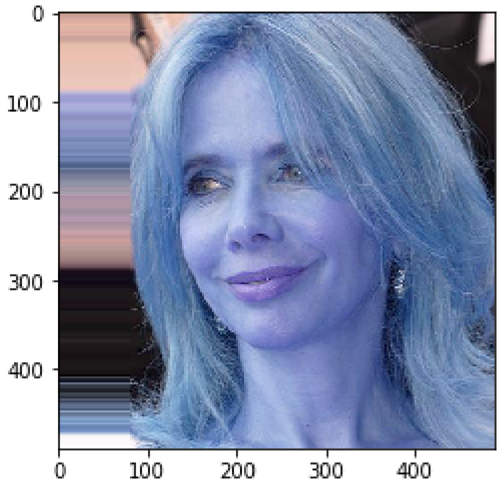
Out[17]:
```
<matplotlib.image.AxesImage at 0x24d83611eb8>
```



Converting color images to grayscale

In [18]:
```
img = cv2.imread(female_path[0])
plt.imshow(img)
```

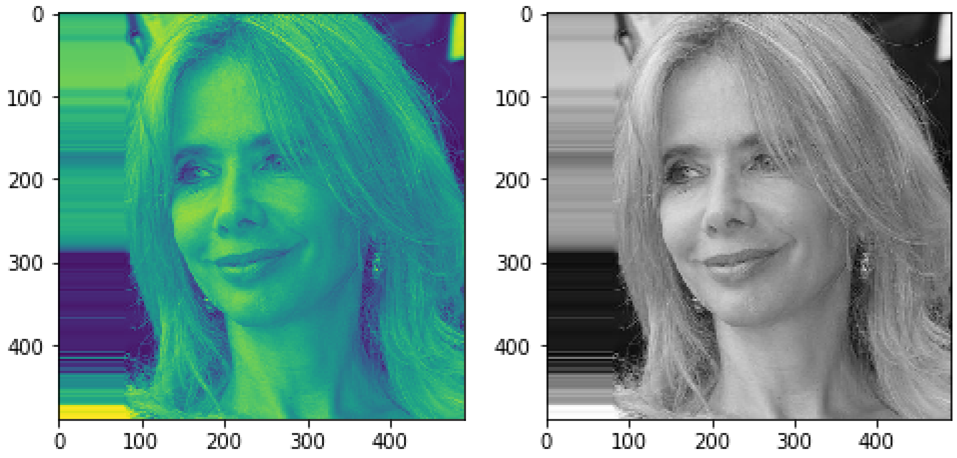
Out[18]:
```
<matplotlib.image.AxesImage at 0x24d83ad9b70>
```



In [22]:
```
gray_img = cv2.cvtColor(img,cv2.COLOR_BGR2GRAY)

plt.figure(figsize=(8,8))
plt.subplot(1,2,1)
plt.imshow(gray_img)
plt.subplot(1,2,2)
plt.imshow(gray_img,cmap='gray')
```

Out[22]:
```
<matplotlib.image.AxesImage at 0x24d84ff45c0>
```



Crop faces using Haar Cascade Classifier

In [24]:
```
haar = cv2.CascadeClassifier('Data/haarcascade_frontalface.xml')
```

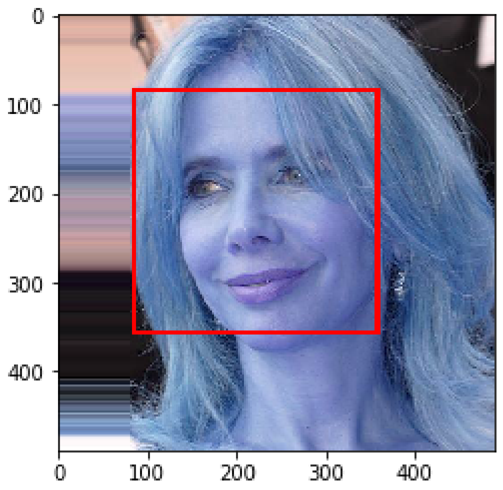
In [26]:
```
faces = haar.detectMultiScale(gray_img, scaleFactor=1.5,minNeighbors=5)
print(faces)
```

```
[[ 85  84 273 273]]
```

Detect face with a bounding box rectangle

In [29]:
```
for x,y,w,h in faces:
    cv2.rectangle(img,(x,y),(x+w,y+h),(255,0,0),3)
plt.imshow(img)
```

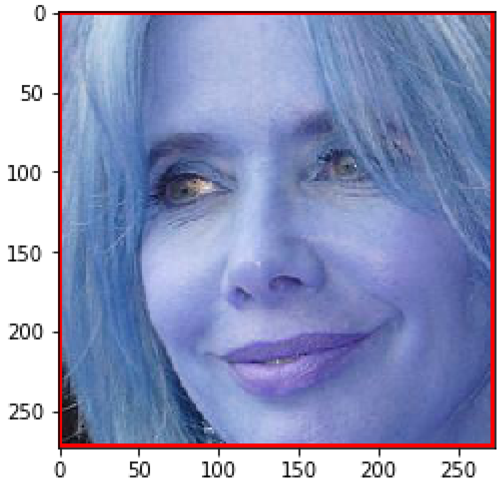
Out[29]:
```
<matplotlib.image.AxesImage at 0x24d83d6de10>
```



Crop the face

In [37]:
```
crop_img = img[y:y+h,x:x+w]
plt.imshow(crop_img)
```

Out[37]:
```
<matplotlib.image.AxesImage at 0x24d83b3c2e8>
```



Save image

In [32]:
```
cv2.imwrite('f_01.png',crop_img)
```

Out[32]:
```
True
```

Apply face cropping to entire dataset

In [53]:

```
def extract_faces(path,gender,no):

    img = cv2.imread(path)
    gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)
    face = haar.detectMultiScale(gray,1.5,5)

    for x,y,w,h in face:
        crop = img[y:y+h,x:x+w]
        if gender == 'male':
            cv2.imwrite('./Data/Crop/Male-Crop/{}_{}.png'.format(gender,no),cr
op)
        else:
            cv2.imwrite('./Data/Crop/Female-Crop/{}_{}.png'.format(gender,no),
crop)
```

In [54]:

```
#extract_faces(male_path[0],'male',1)
```

Storing cropped face data

In [55]:

```
for i,path in enumerate(male_path):
    extract_faces(path,'male',i)


for i,path in enumerate(female_path):
    extract_faces(path,'female',i)
```

In [ ]: