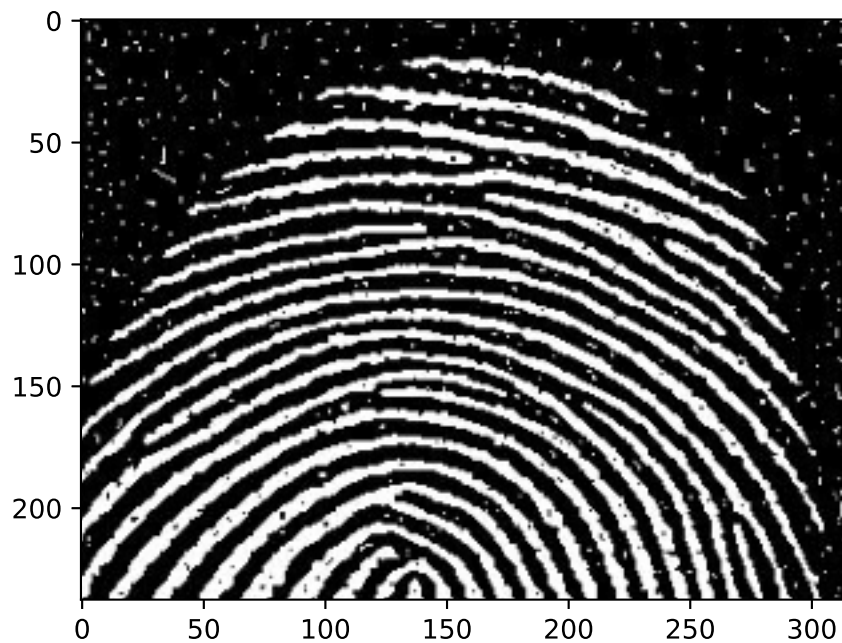


```
In [7]: import matplotlib.pyplot as plt
import cv2
import numpy as np
```

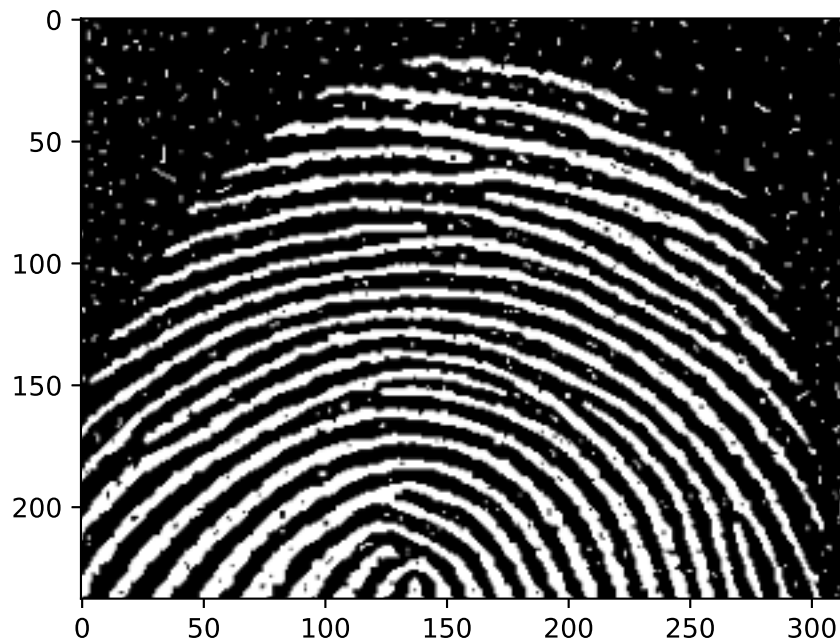
```
In [8]: img = cv2.imread('sample3.jpg',0)
# img=cv2.resize(img,(512,512))
# fig=plt.figure(figsize=(15,15))
# ax=fig.add_subplot(111)
plt.imshow(img,'gray')
print(img)
```

```
[[ 7  0 11 ...  2  0  6]
 [ 0  3 245 ... 255 255  2]
 [ 0  0 20 ...  0  0  9]
 ...
 [239 252 255 ...  0 13  0]
 [255 255 255 ... 12  0  0]
 [255  0  6 ...  5  0 12]]
```



```
In [9]: (thresh, blackAndWhiteImage) = cv2.threshold(img, 49, 255, cv2.THRESH_BINARY)
plt.imshow(blackAndWhiteImage, 'gray')
```

```
Out[9]: <matplotlib.image.AxesImage at 0x13f0e68>
```



```
In [10]: struc_ele=np.array([[255,255,255],[255,255,255],[255,255,255]])

padded_arr =np.zeros((img.shape[0]+2,img.shape[1]+2))
for i in range (img.shape[0]):
    for j in range(img.shape[1]):
        padded_arr[i+1][j+1] = blackAndWhiteImage[i][j]

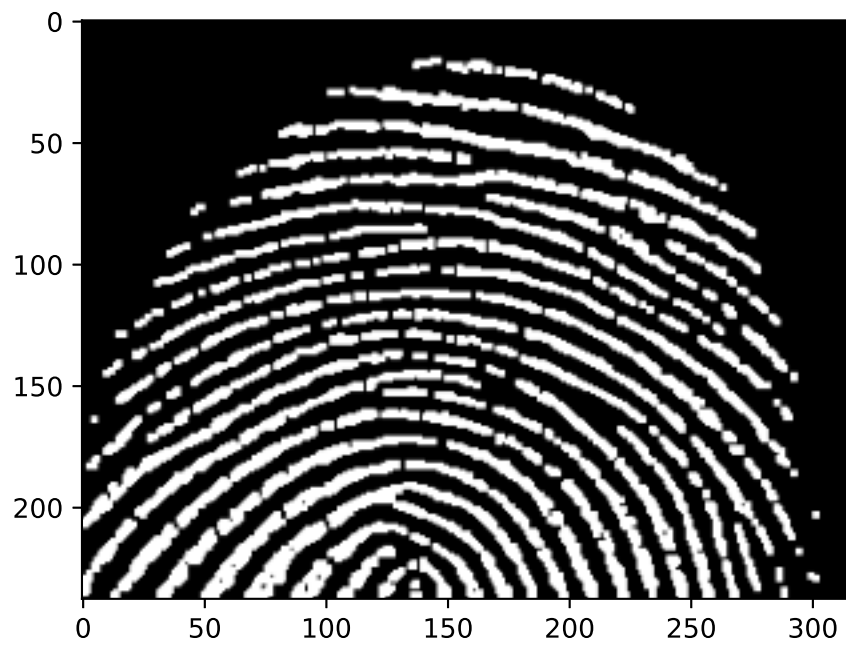
new_img=np.zeros(img.shape,'uint16')
for i in range (img.shape[0]):
    for j in range(img.shape[1]):
        if (np.alltrue(np.equal(struc_ele,padded_arr[i:i+3,j:j+3]))):
            new_img[i][j]=255
        else:
            new_img[i][j]=0
```

```
In [11]: padded_arr =np.zeros((img.shape[0]+2,img.shape[1]+2))
for i in range (img.shape[0]):
    for j in range(img.shape[1]):
        padded_arr[i+1][j+1] = new_img[i][j]

new_img1=np.zeros(img.shape,'uint16')
for i in range (img.shape[0]):
    for j in range(img.shape[1]):
        if (np.sometrue(np.equal(struc_ele,padded_arr[i:i+3,j:j+3]))):
            new_img1[i][j]=255
        else:
            new_img1[i][j]=0
```

```
In [12]: plt.imshow(new_img1, 'gray')
```

```
Out[12]: <matplotlib.image.AxesImage at 0x14c9dd48>
```



```
In [ ]:
```