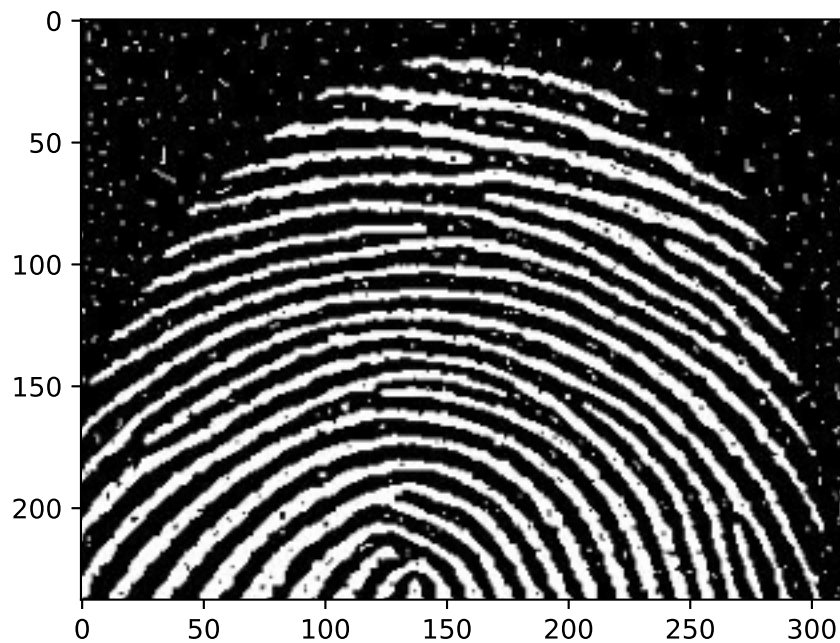


```
In [7]: import matplotlib.pyplot as plt
import cv2
import numpy as np
```

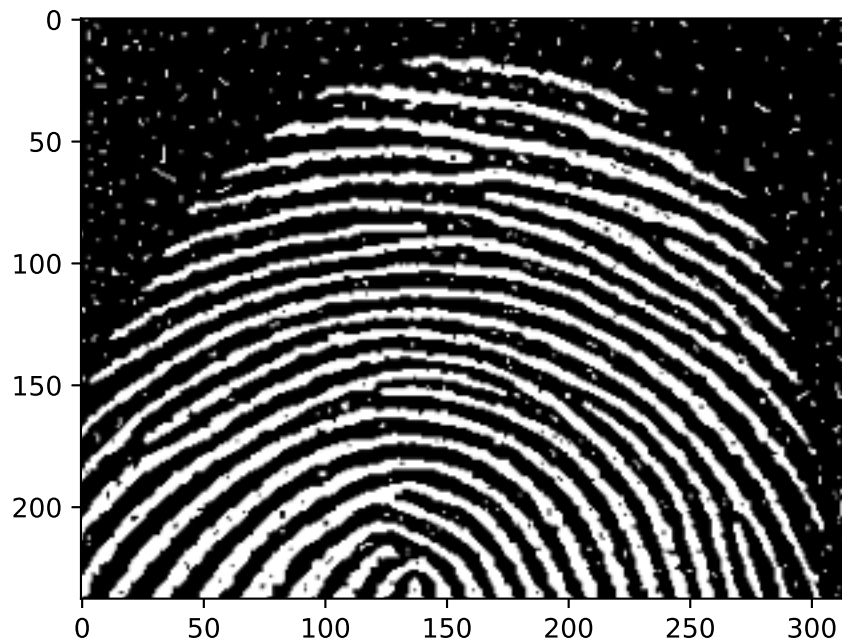
```
In [8]: img = cv2.imread('sample3.jpg',0)
# img=cv2.resize(img,(512,512))
# fig=plt.figure(figsize=(15,15))
# ax=fig.add_subplot(111)
plt.imshow(img,'gray')
print(img)
```

```
[[ 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 0x1573040>



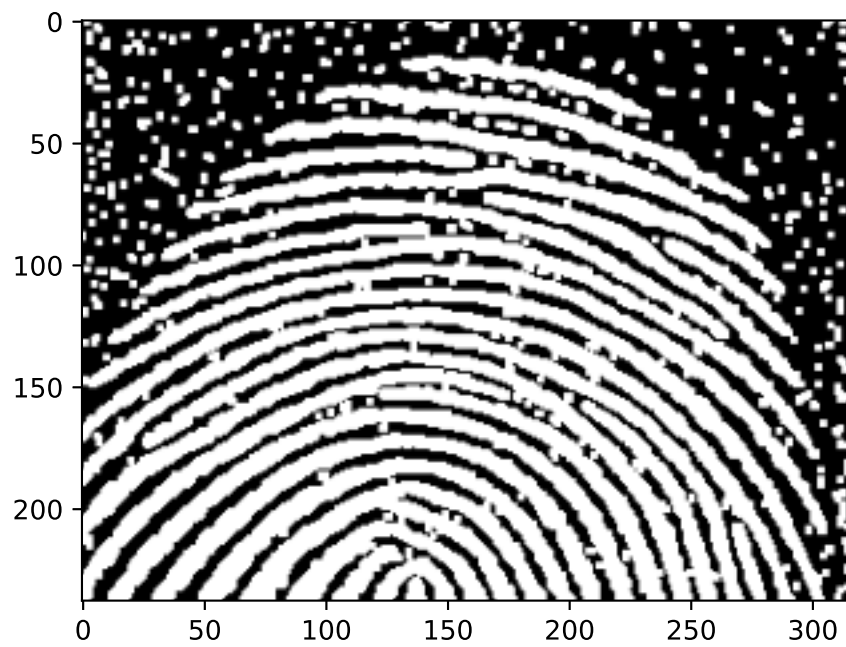
```
In [10]: padded_arr = np.zeros((img.shape[0]+2, img.shape[1]+2))
for i in range (img.shape[0]):
    for j in range (img.shape[1]):
        padded_arr[i+1][j+1] = blackAndWhiteImage[i][j]

struc_ele = np.array([[255, 255, 255], [255, 255, 255], [255, 255, 255]])
new_img = 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_img[i][j] = 255
        else:
            new_img[i][j] = 0
```

In [10]:

```
In [11]: plt.imshow(new_img, 'gray')
```

```
Out[11]: <matplotlib.image.AxesImage at 0x159fb08>
```



```
In [ ]:
```