

Skeleton

```
import cv2
import numpy as np
import matplotlib.pyplot as plt
img = cv2.imread('skeleton.bmp',0)
im_H = img.shape[0]
im_W = img.shape[1]
thres_img = np.ones((im_H,im_W))
for i in range(im_H):
    for j in range(im_W):
        if(img[i,j]>=170):
            thres_img[i,j] = 0
kernel = np.array([[1,1,1],[1,1,1],[1,1,1]],np.uint8)
ksize = kernel.shape[0]
padding = 1
thres_img=cv2.copyMakeBorder(thres_img,padding,padding,padding,padding,cv2.BORDER_CONSTANT,value=0)
output_H = im_H + ksize - 1
output_W = im_W + ksize - 1
skeleton = np.zeros((output_H,output_W),np.uint8)
AerodeB = thres_img
for p in range(10):
    op = cv2.morphologyEx(AerodeB, cv2.MORPH_OPEN, kernel)
    diff = AerodeB - op
    for i in range(output_H):
        for j in range(output_W):
            if(diff[i,j]==1):
                skeleton[i,j]=1
    AerodeB = cv2.erode(AerodeB,kernel)
    if(AerodeB.max()==0):
        break
plt.imshow(skeleton, 'gray')
plt.show()
```



Fig1: Input Image



Fig2: Image after Threshold

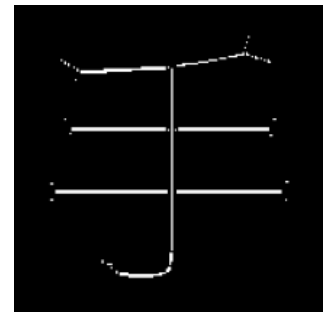


Fig3: Skeleton