```
import cv2 as cv
import numpy as np
import matplotlib.pyplot as plt
Image = cv.imread("cat1.jpg",0)
plt.subplot(1,2,1)
plt.imshow(Image, cmap='gray')
plt.axis('off')
plt.title('input')
def get_boundary_sum(img):
    horizontal_top = img[0,:]
    horizontal_bottom = img[-1,:]
    vertical_left = img[:,0]
    vertical_right = img[:,-1]
    boundary_sum = np.sum(horizontal_top) + np.sum(horizontal_bottom)
+ np.sum(vertical_left) + np.sum(vertical_right)-horizontal_top[0]-
horizontal_top[-1]-horizontal_bottom[0]-horizontal_bottom[-1]
    return boundary_sum
get_boundary_sum(img)
img2 = np.copy(img)
#replace middle
img2[img.shape[0]//2, img.shape[1]//2] = get_boundary_sum(img)
plt.subplot(1,2,2)
plt.imshow(img2, cmap='gray')
plt.axis('off')
plt.title('output')
plt.show()
```