

How to get the contour from an image

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What is Contour

1. Contour is the **boundary** of shape
2. Continuous points (along the boundary), having **same color or intensity**

Simple Form

```
import numpy as np
import cv2

# Load an color image in grayscale
img = cv2.imread('flowers.jpg',cv2.IMREAD_UNCHANGED)
imggray = cv2.cvtColor(img,cv2.COLOR_BGR2GRAY)

ret,thresh = cv2.threshold(imggray,100,255,0)
image, contours, hierarchy =
cv2.findContours(thresh,cv2.RETR_TREE,cv2.CHAIN_APPROX_SIMPLE)

imgContour = cv2.drawContours(img, contours, -1, (0,255,0), 3)

cv2.imshow('image',img)
cv2.imshow('thresh', thresh) # draw a bi-level threshold image
cv2.imshow('imgContour', imgContour) # draw a contour image

cv2.waitKey(0)
cv2.destroyAllWindows()
```

E.g.

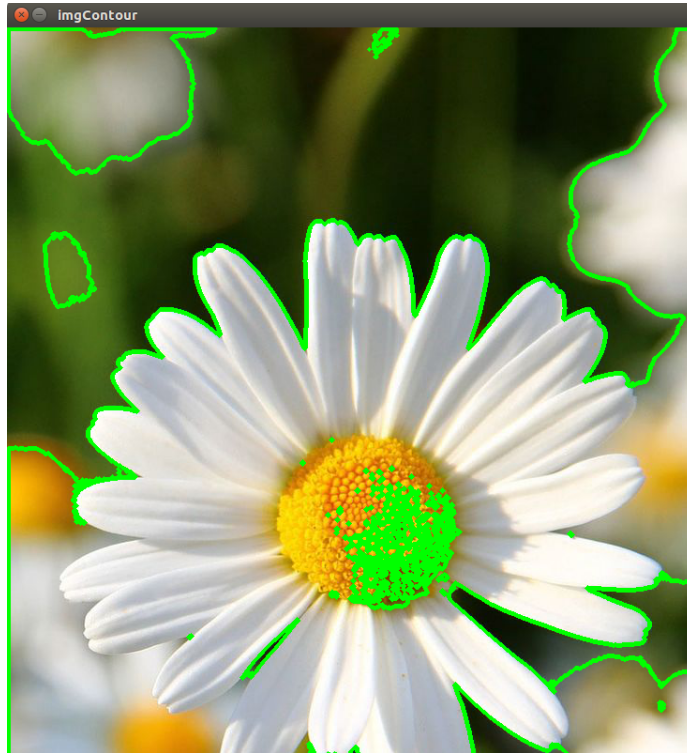


Fig. The contour image.

Detail Form

```
import numpy as np
import cv2

img = cv2.imread('flowers.jpg')

# Step 1: Bi-level Thresholding
imggray = cv2.cvtColor(img,cv2.COLOR_BGR2GRAY)
ret,thresh = cv2.threshold(imggray,100,255,0)

# Step 2: Find Contours
# 1. Find white object from black background
# Argument
# 1. source image
```

```

# 2. contour retrieval mode
# 3. contour approximation method
# Return
# 1. image: a countour image
# 2. contours: a Python list of all contours that consists of (x,y) array
# 3. hierarchy: an hierarchy array
image, contours, hierarchy =
cv2.findContours(thresh,cv2.RETR_TREE,cv2.CHAIN_APPROX_SIMPLE)

print('hierarchy = ' + str(hierarchy))

# Step 3: Show Result
# You can draw any shape to the 'img' with color
# Arguments
# 1. image canvas: a canvas to be draw
# 2. contours: the shape list
# 3. index: the index of contour that you want to draw (-1: all contours)
# 4. color
# 5. width
imgContour = cv2.drawContours(img, contours, -1, (0,255,0), 3)

cv2.imshow('Original img',img)
cv2.imshow('thresh', thresh) # draw a bi-level threshold image
cv2.imshow('imgContour', imgContour) # draw a contour image

cv2.waitKey(0)
cv2.destroyAllWindows()

```

Reference

1. https://opencv-python-tutroals.readthedocs.io/en/latest/py_tutorials/py_imgproc/py_contours/py_contours_begin/py_contours_begin.html#contours-getting-started