

```

1  import cv2
2
3  def LineFollower(frame):
4      ### Zero the x-centroid and contour area ###
5      cx = 0
6      contArea = 0
7
8      ### Make the frame grayscale ###
9      gray=cv2.cvtColor(frame,cv2.COLOR_BGR2GRAY)#convert each frame to grayscale.
10
11     ### Blur the image ###
12     blur=cv2.GaussianBlur(gray,(5,5),0)#blur the grayscale image
13
14     ### Remove noise with a threshold ###
15     _, removedNoise =
cv2.threshold(blur,35,255,cv2.THRESH_BINARY+cv2.THRESH_OTSU)#using threshold remove
noise
16
17     ### Invert image pixels ###
18     _, inverted = cv2.threshold(removedNoise,127,255,cv2.THRESH_BINARY_INV)# invert the
pixels of the image frame
19
20     ### Find the contours of the image ###
21     _, contours, _ = cv2.findContours(inverted,cv2.RETR_TREE,cv2.CHAIN_APPROX_SIMPLE)
#find the contours
22
23     ### For each of the contours, iterate through the list ###
24     for c in contours:
25
26         ### If the contours are populated: ###
27         if c is not None:
28
29             ### Find the area of each contours ###
30             contArea = cv2.contourArea(c)
31
32             ### Threshold the area: 1000 sq. pixels ###
33             if contArea >= 1000:
34
35                 ### Find the moments of the large contour ###
36                 M = cv2.moments(c)
37
38                 ### Calculate the x-centroid ###
39                 cx = int(M['m10']/M['m00'])
40
41     ### Return the position of the x-centroid ###
42     return cx
43

```