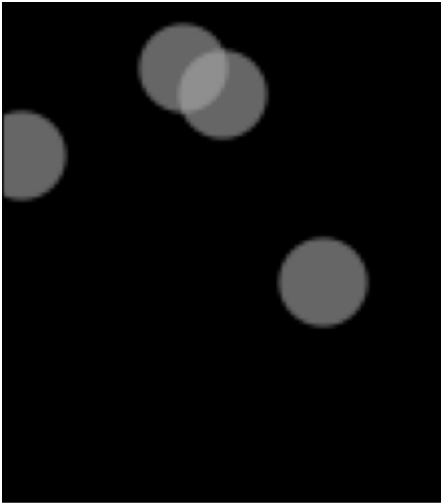


Explanation:

The idea of my solution is taking the image removing the intersected areas and calculate how many contours in the image and this is equal to the number of the circles.

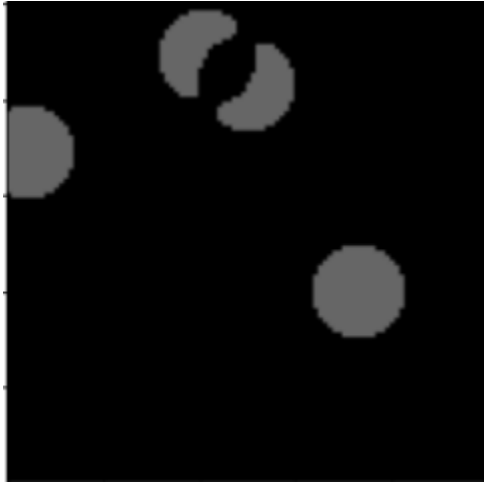
Here is the algorithm with example of this image:



- 1) Remove the intersected part which have values more than 102 so we get:



- 2) We do remove the noise over the edges of the circles to avoid calculate those noise as contours and to improve better the separation between the intersected circles. We get:



- 3) We calculate the number of contours and in this example is 4 and equal to the number of the circles.

Notes:

- 1) In case if there are circles which are tangent and don't have overlapped area. And the above algorithm will count as 1 contour. So to detect such case is done by calculating the area of the contour and if it is almost twice than the area of normal circle(266 in those image) so we count 2 circles. And if it is three times the area we count 3...

2) To brute force the calculations I did another check in the end.

The number of contours that we got in 3 must be more or equal than the number of the contours of the original image + the number of contours of the intersected areas.