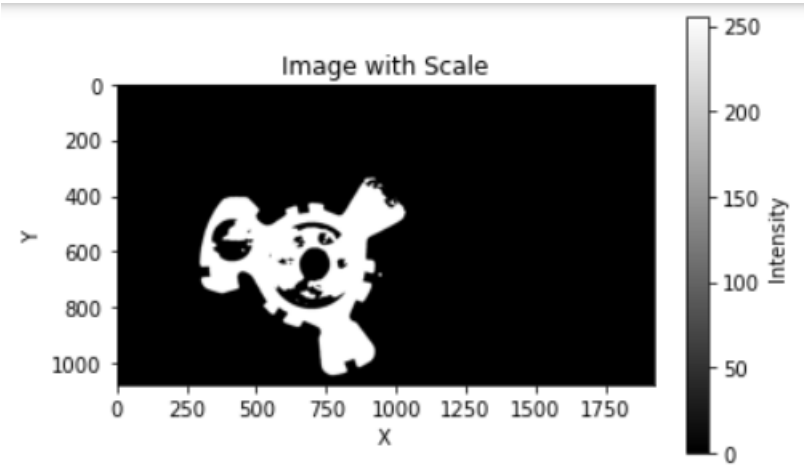
Assignment

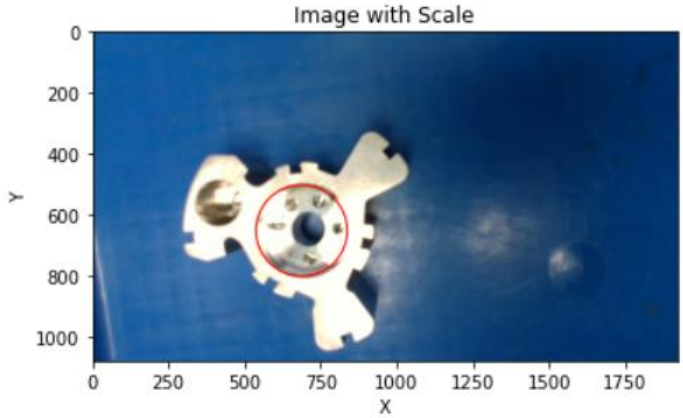
To find the orientation of an object in an image, I have followed these steps:

Step1: "Converting an image into a binary image"

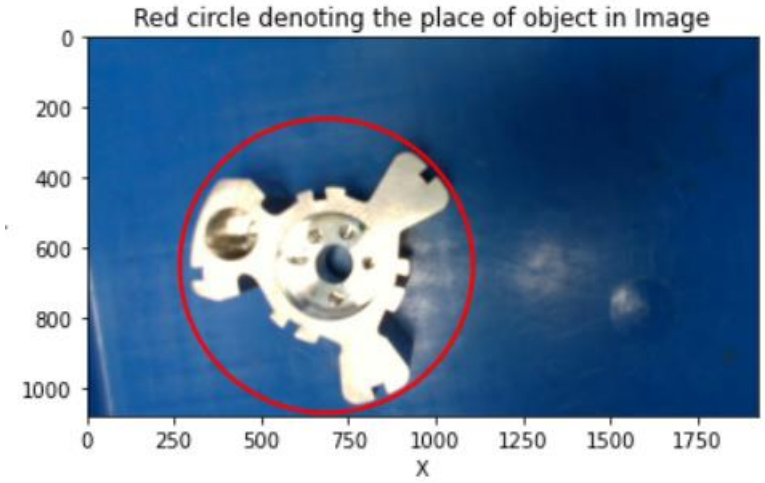


Step2: "Finding the approximate center of the circle that contains the object."

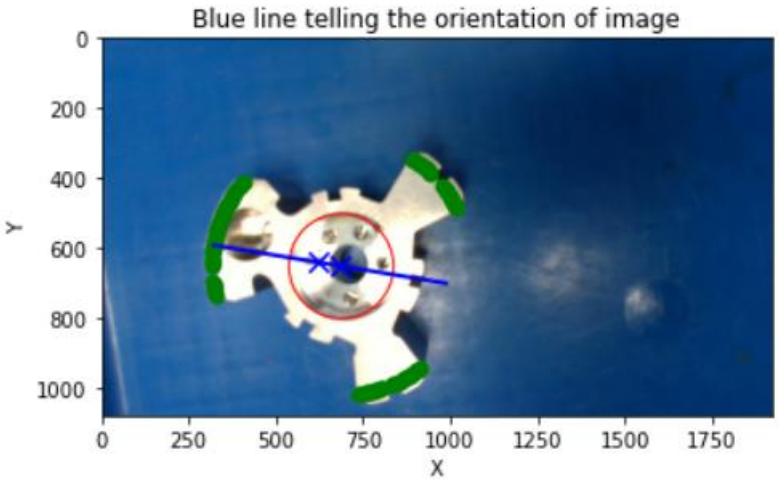
Step3"Improving the code to find a more accurate center."



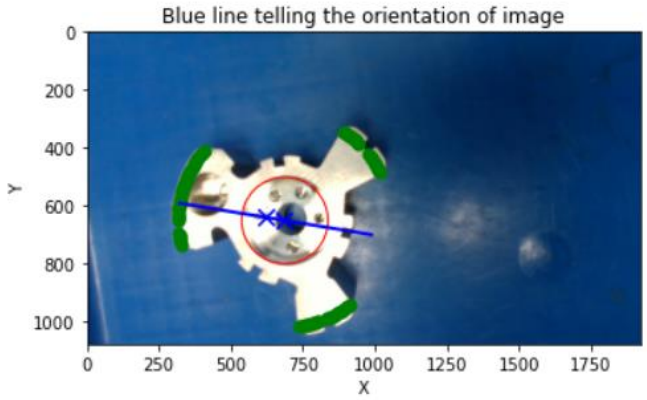
Step4: "Finding the position of the object; we can see the red circle denoting its position."



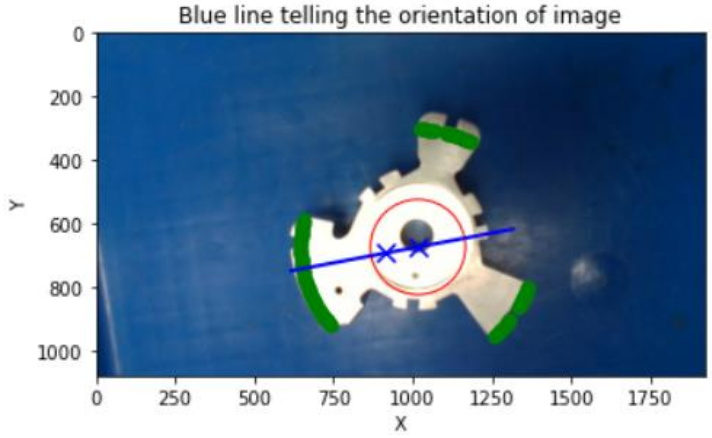
Step 5: "Finding the line indicating the orientation of the image with respect to the x-axis."



We have to repeat the same steps for the test image as well, and find the orientation of the object in it. Then, we can determine the relative angle between the object in the test image and the object in the template image.



Orientation of test image: Angle between the line and x-axis: 189.3



Orientation of template image: Angle between the line and x-axis: 169.3

Hence, the orientation angle between the test and template images is approximately 19.9.