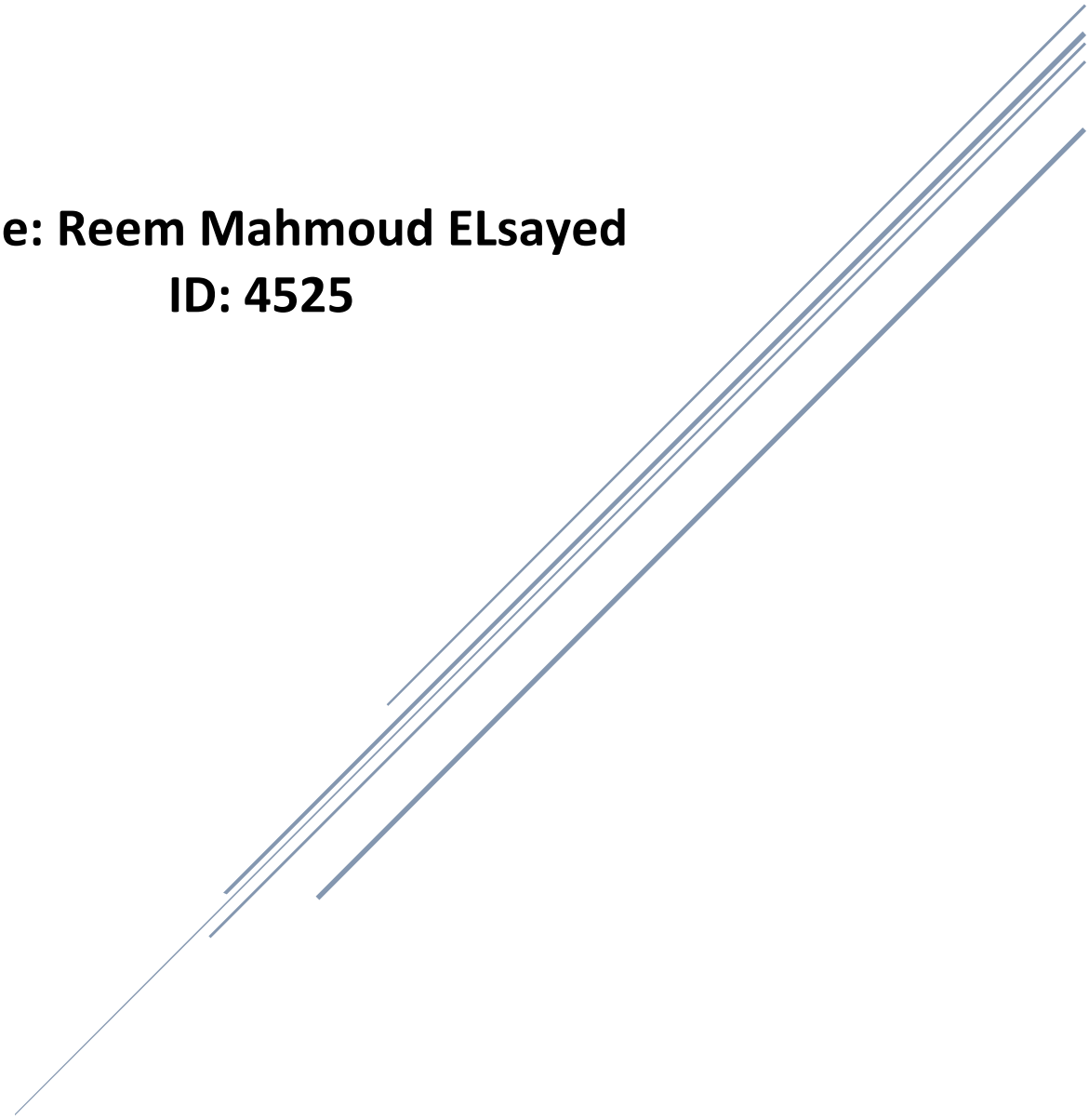
ASSIGNMENT 3

Computer vision

Name: Reem Mahmoud ELsayed
ID: 4525

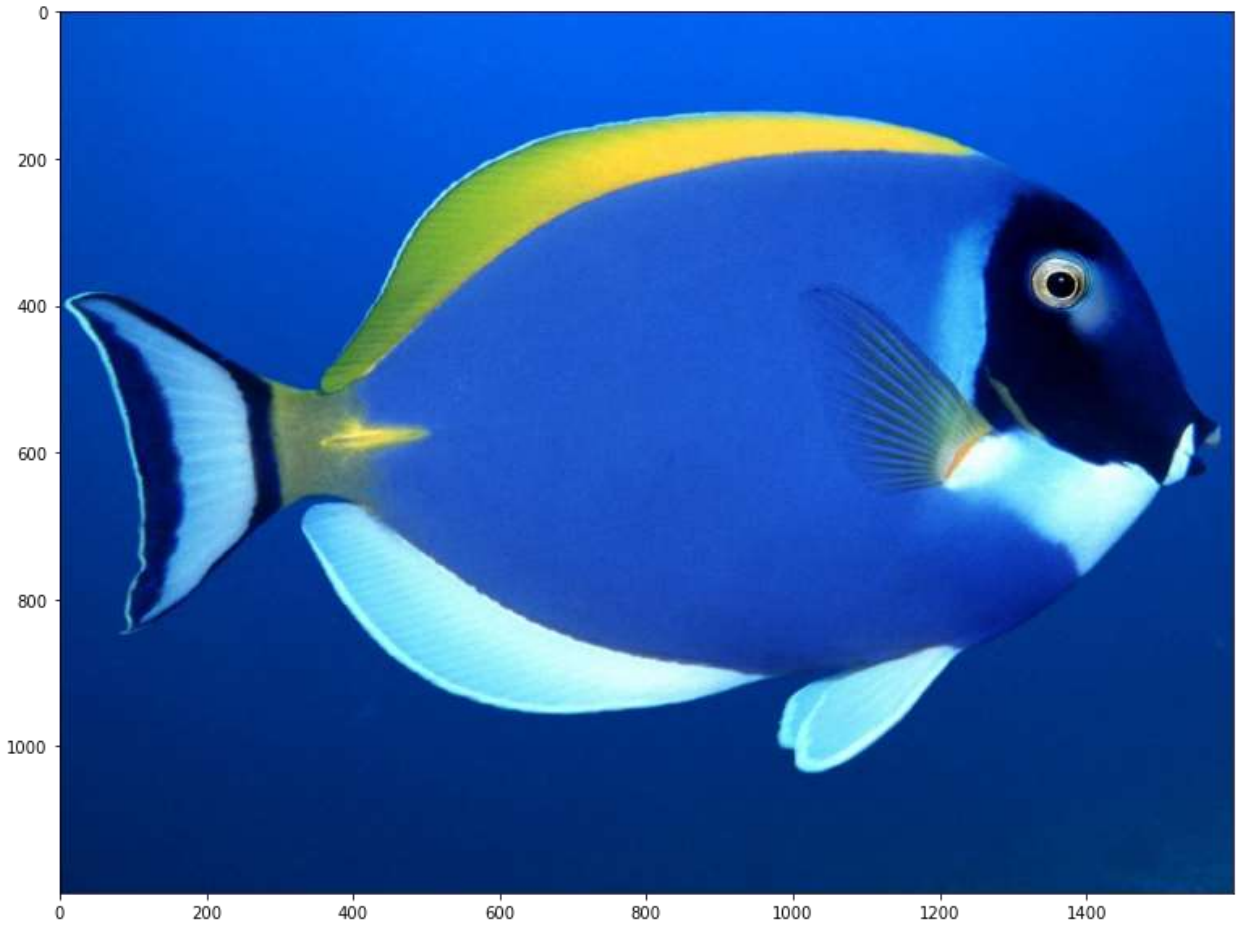


Assignment 3

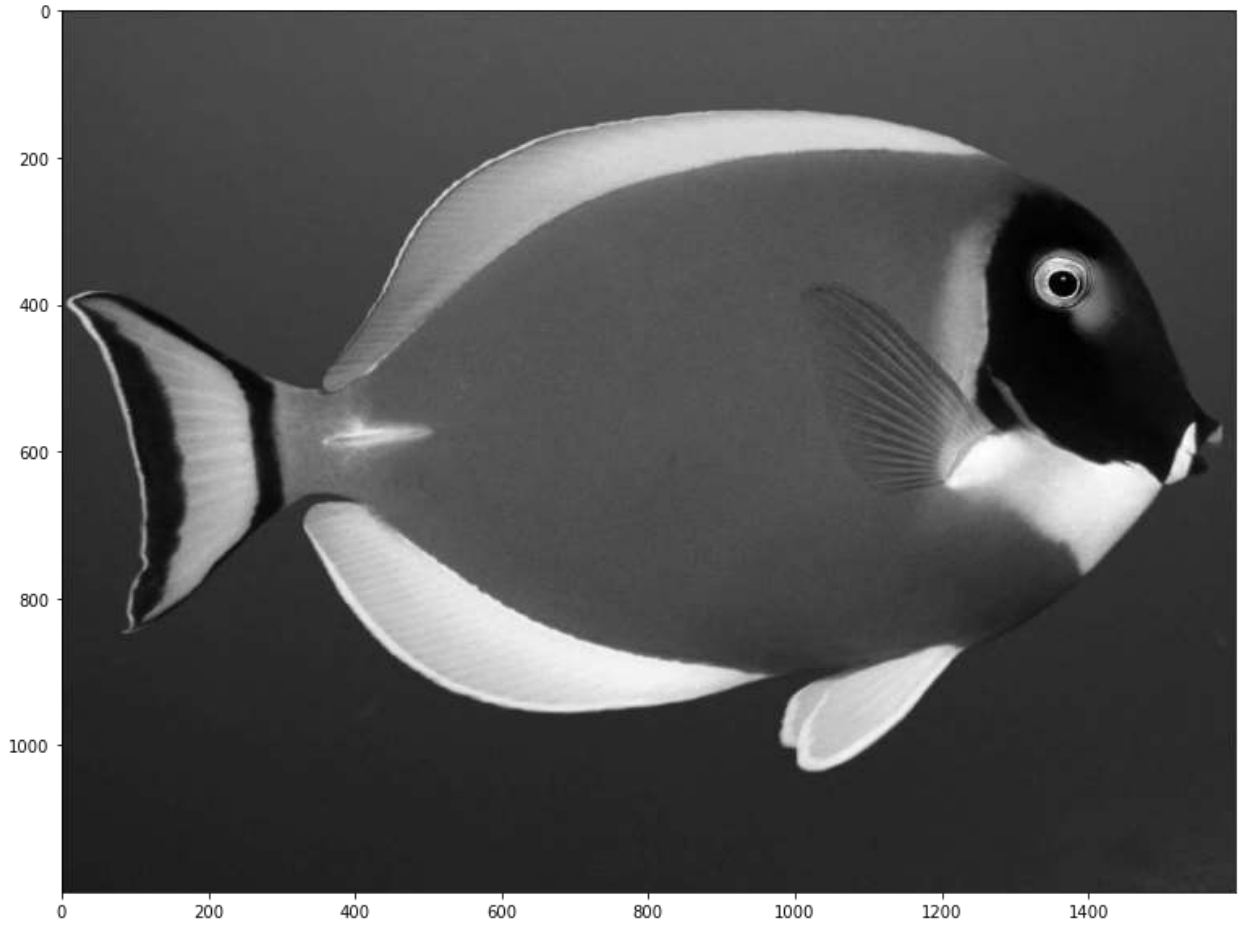
Q1) Implement Canny Edge Detector for gray scale images. This would include
a. Convolution with partial derivatives of Gaussian in x and y (you can use the convolution function from the last assignment). You may also want to
write separate functions to generate derivatives of Gaussian Kernels for different values of σ).
b. Finding the gradient magnitude image.
c. Non-Maximum Suppression. (The input of this module will be the output image of part (b))
d. Hysteresis Thresholding (The input of this module will be the output image of part 'c' and the output will be a binary image).
Experiment with different values of σ and thresholds for input images.

Answer:

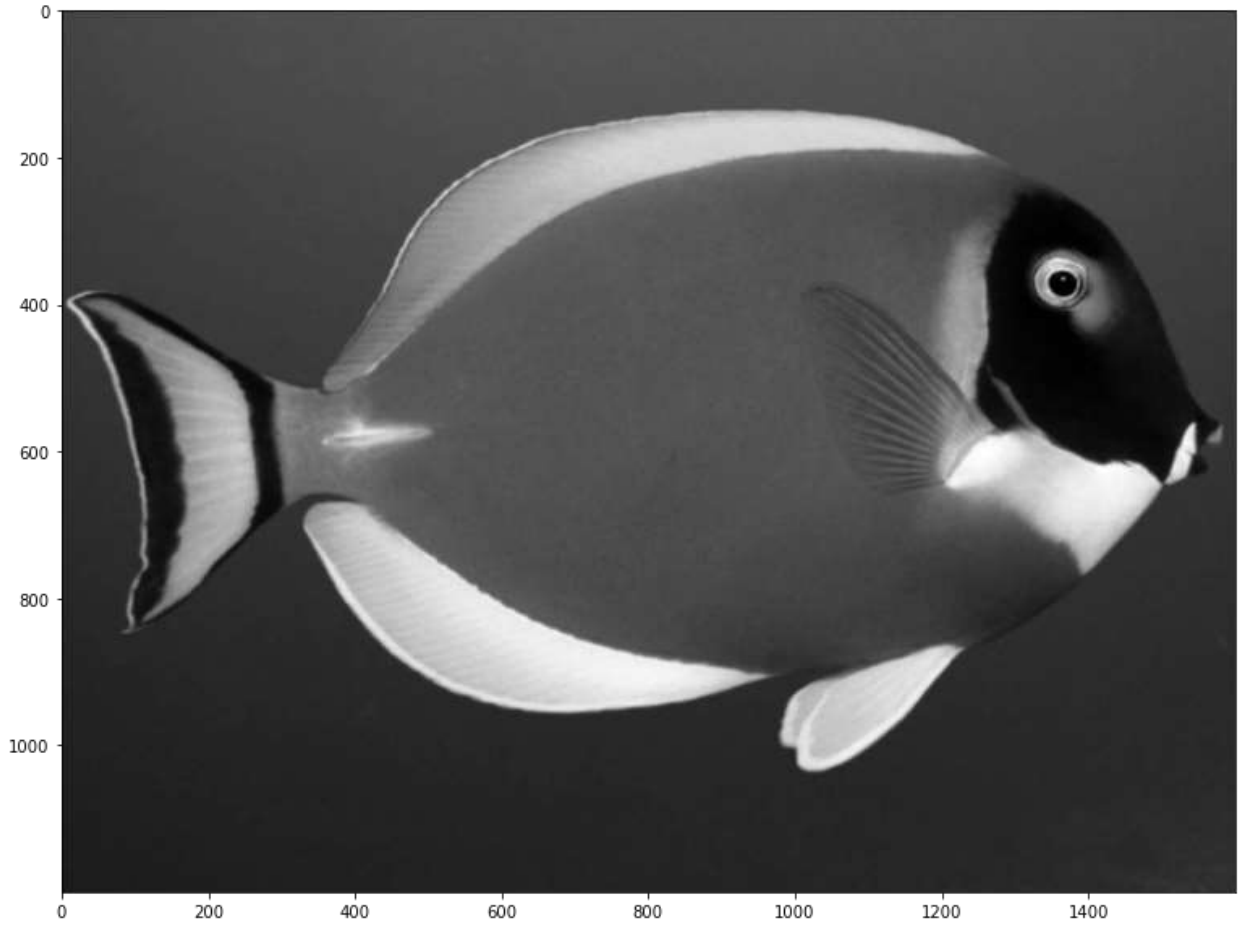
The input image:



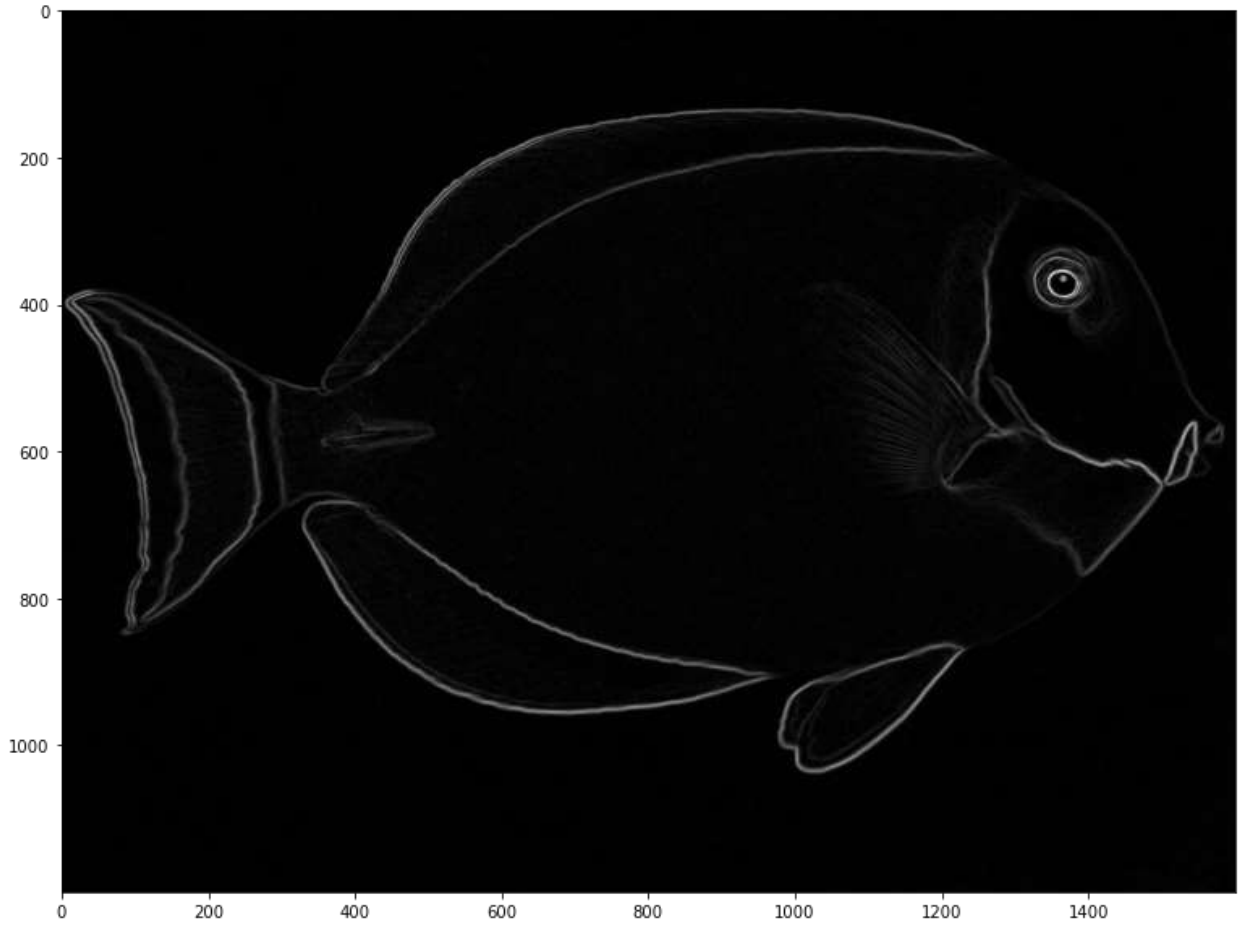
The gray image:



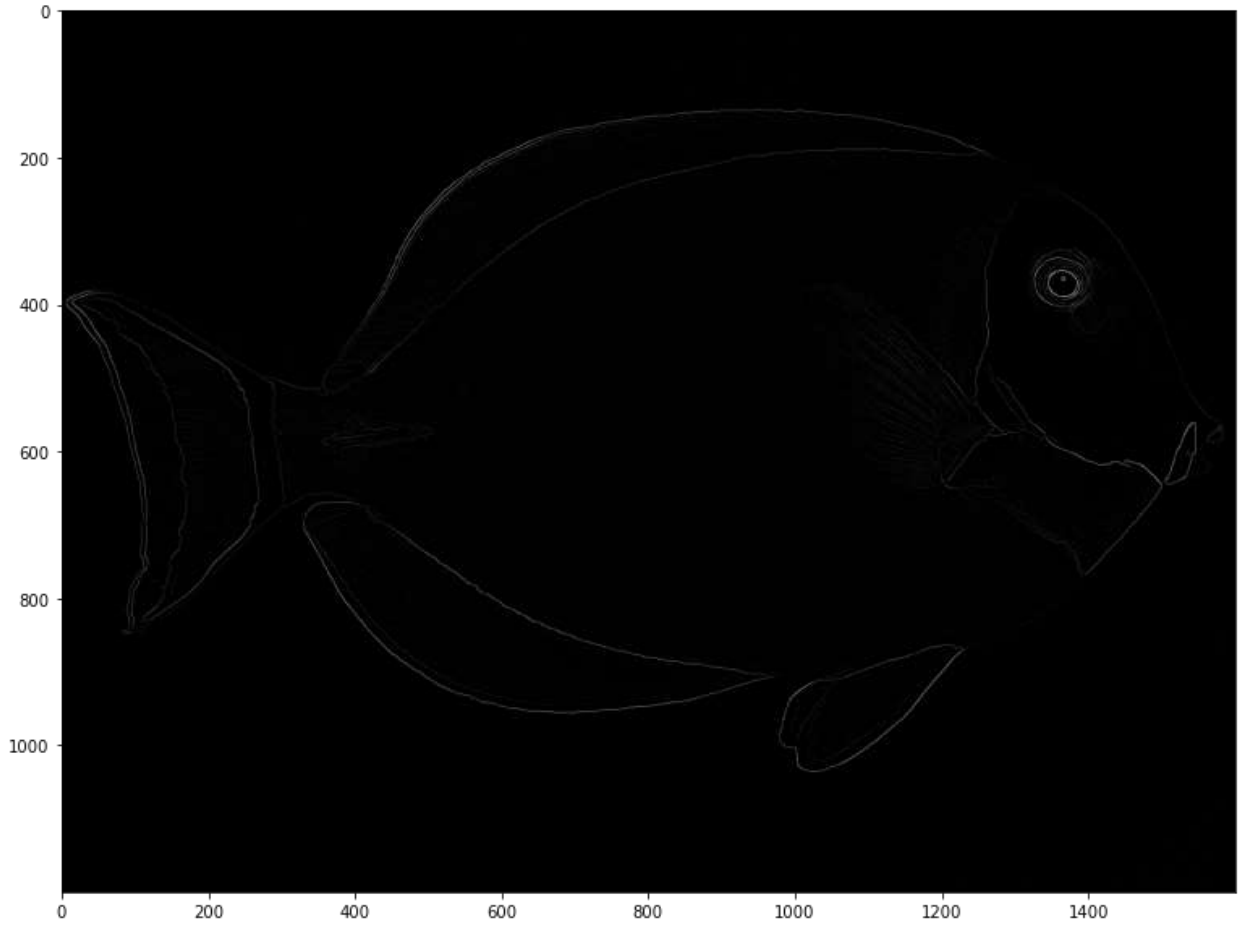
The image after noise removal using Gaussian kernel:



The image after Gradient calculation:



The image after Non-maximum suppression calculations:



The final image after Double threshold and Edge Tracking by Hysteresis: