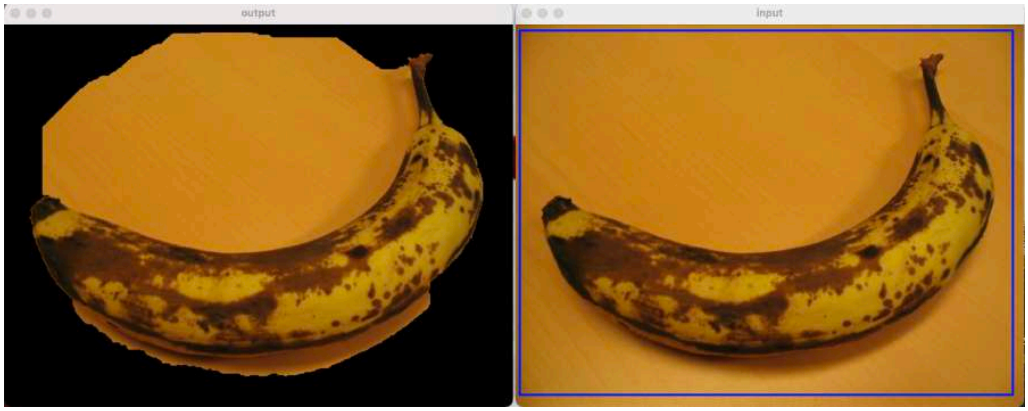
Changing Parameters - CV Assignment #3

Effect of a tight initial bounding box or a loose bounding box

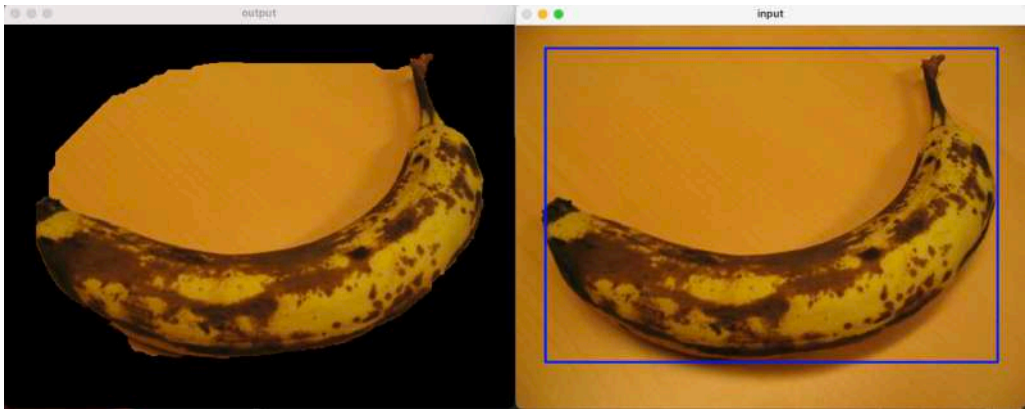
Tested for 3 different images and observed that a tighter bounding box was better at image segmentation especially at the boundaries.

Image1: Banana1.jpg

Observe how the image segmentation is better towards the bottom of the banana.



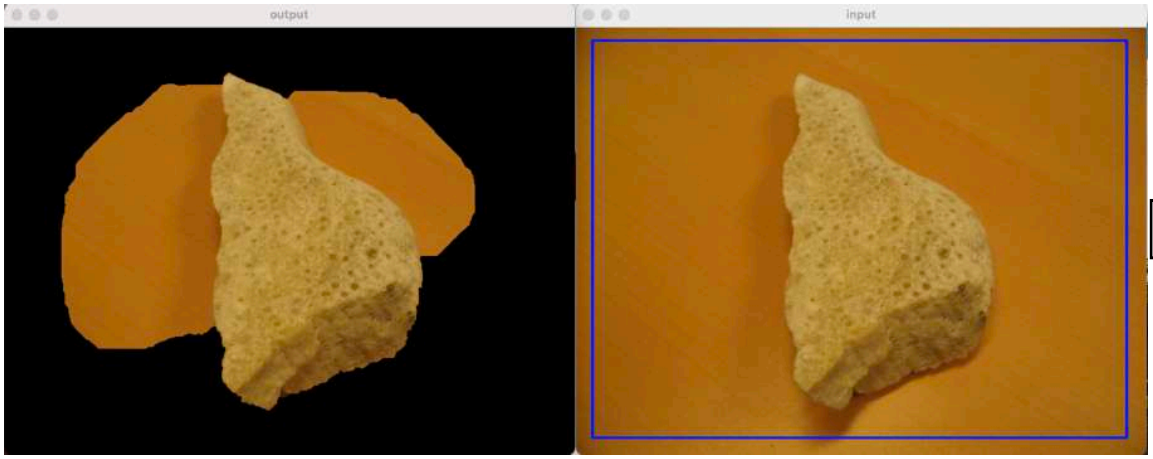
LOOSE BOUNDING



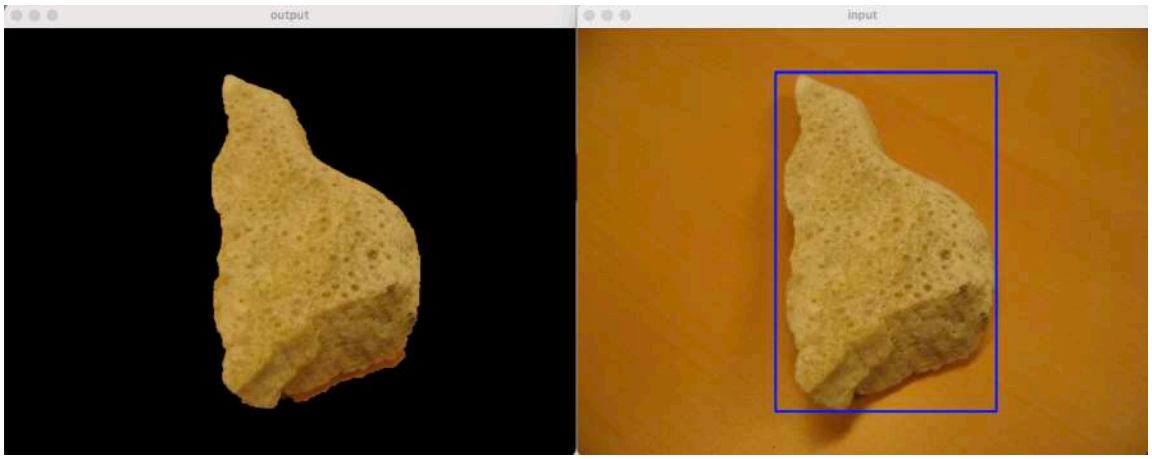
TIGHT BOUNDING

Image2: stone1.jpg

Observe how the segmentation worse is a loose scenario not just around the edges.



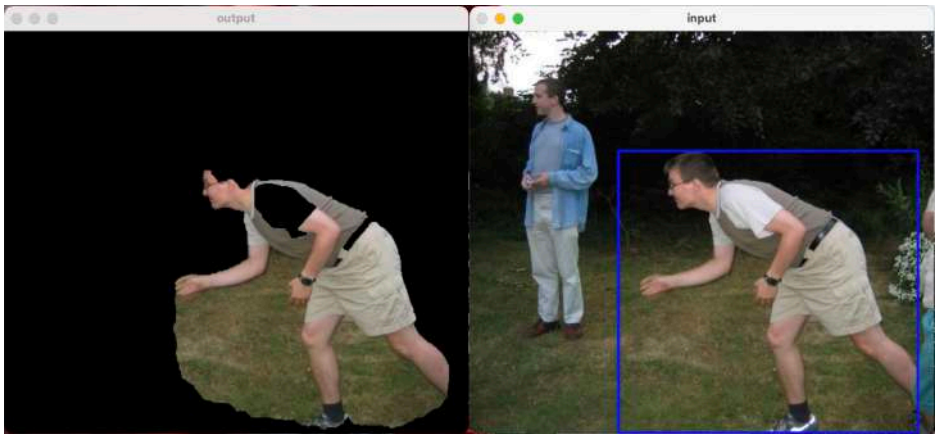
LOOSE BOUNDING



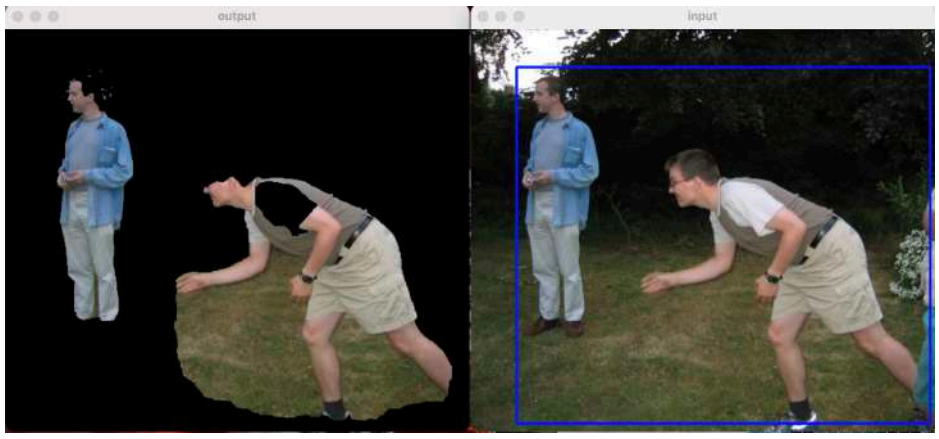
TIGHT BOUNDING

Image3: bool.jpg

Observe how changing the bounding box alters what the main subject is.



TIGHT BOUNDING



LOOSE BOUNDING

Effect of a number of iterations

Tested for 3 different images and compared with different number of images. The initial bounding box was identical for both n=1 and n=5.

Image1: stone1.jpg

As the number of iterations increase, the segmentation boundary comes closer and closer to the actual boundary. Pay attention to the edges on the lower right side of the stone.

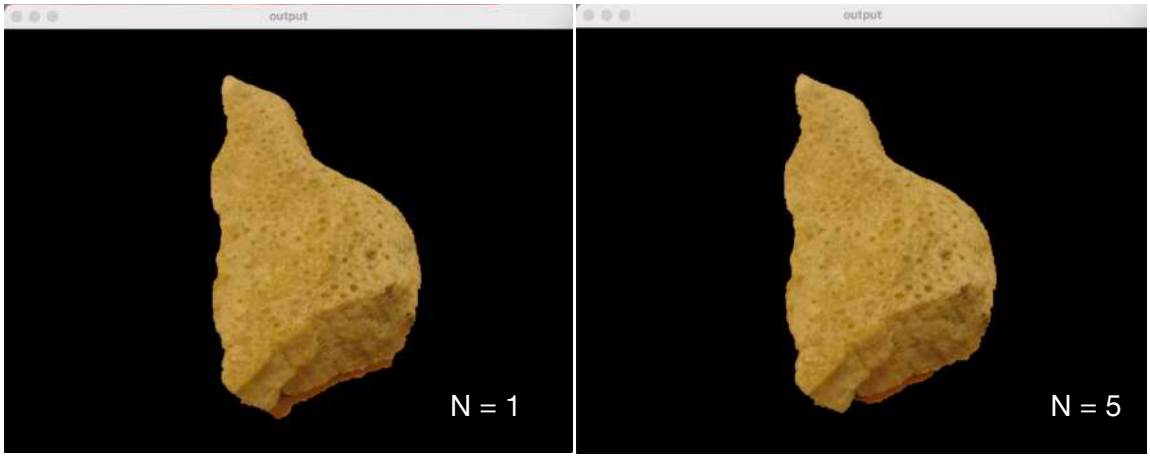


Image2: banana1.jpg

Again with the increase in iterations, notice how the segmentation boundary come closer to the real boundary. Pay attention to the boundary on top. As the number of iterations keep increasing we expect the segmentation to get even better.

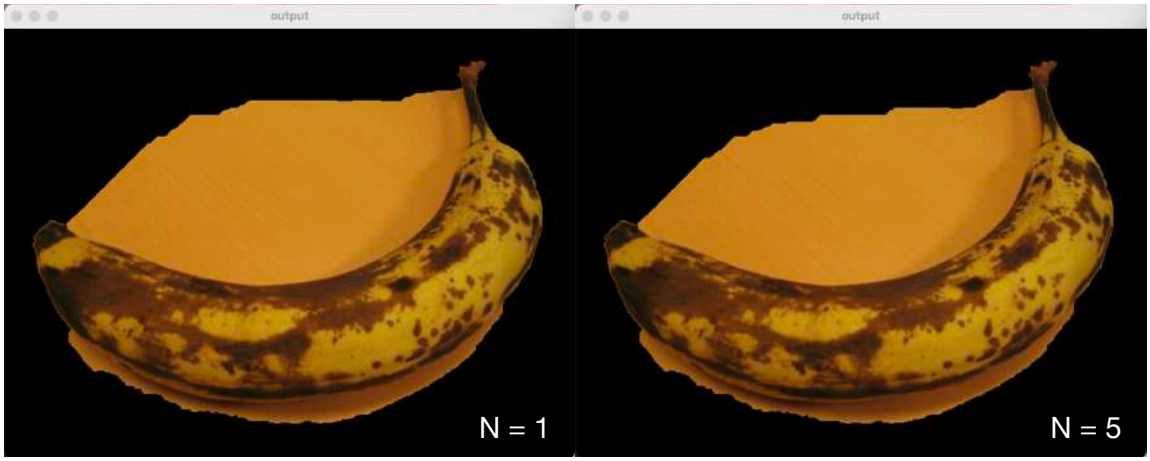


Image3: bush.jpg

Similarly in this image the boundary gets tighter and tighter with increasing number of iterations.

Changing the value of Gamma

Increasing the value of gamma made the segmentation process more aggressive. We altered the values of gamma for the same initial bounding box.

Image1: Banana1.jpg

Image2: stone1.jpg

Image3: cross.jpg