ASSIGNMENT 4

Algorithm implemented:

Referred to papers -

1) "Grabcut" - Interactive Foreground Extraction using Iterated Graph Cuts

2) Implementing Grabcut.

Observations:

1) Changing number of iterations

The output gets better as the number of iterations are increased. But beyond certain iterations, the output doesn't improve.

2) Number of components of GMM

It was observed for the following images that for lesser number of GMM components the output was better than that for higher number of GMM components.

3) Changing color space

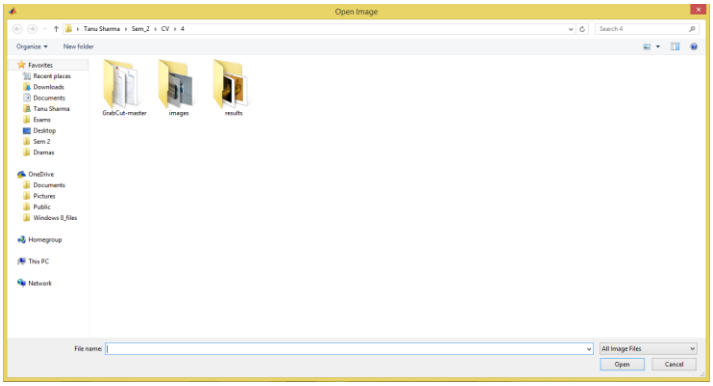
If the results are obtained for a grayscale image rather than an RGB one, the output will be of lesser quality because in the former, there is a loss of information.

However, the results for different types for color models were not obtained while doing this assignment due to lack of time.

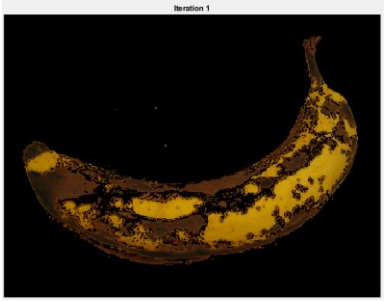
4) 4 Neighborhood vs 8 Neighborhood

The outputs expected for 8 neighborhood should be better than that for 4 neighborhood. Because in the latter case we are ignoring some information which might help in getting better results. But on observation, the code is giving better results for 4 neighborhood.

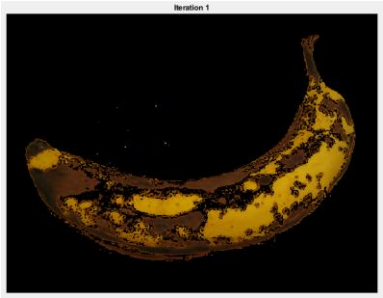
UI for image selection:

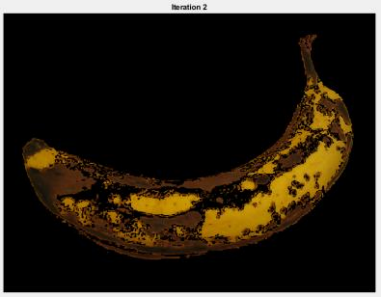


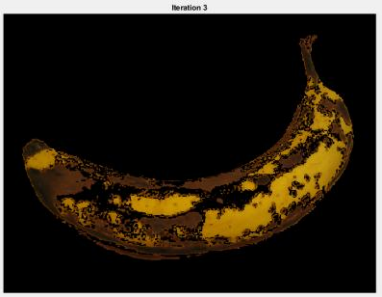
Results of a few images:



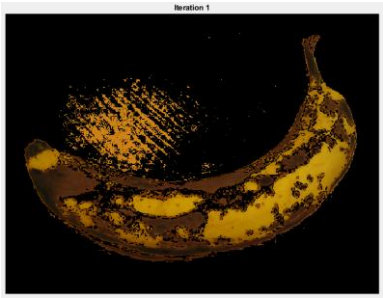
For K = 3 and neighborhood = 4

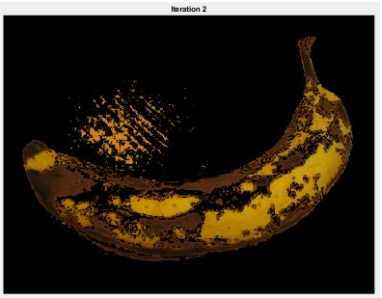


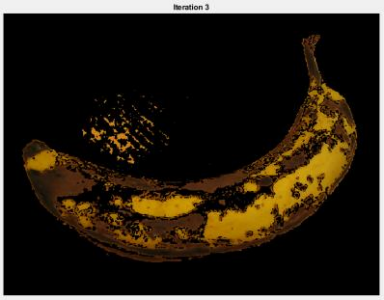




K = 5 and neighborhood = 4







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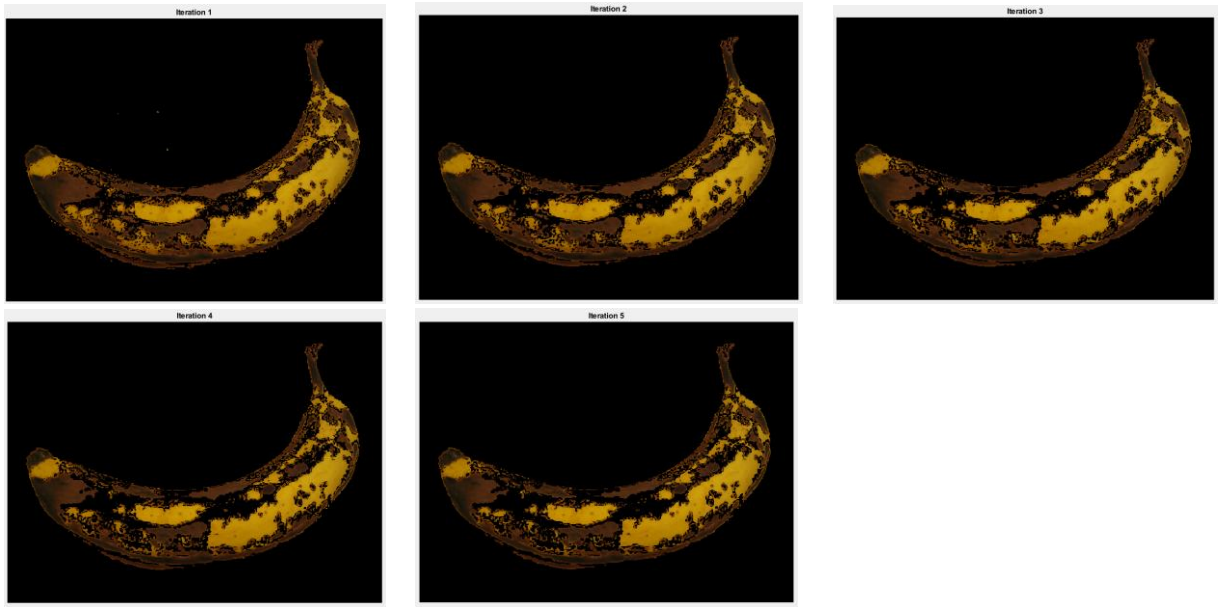
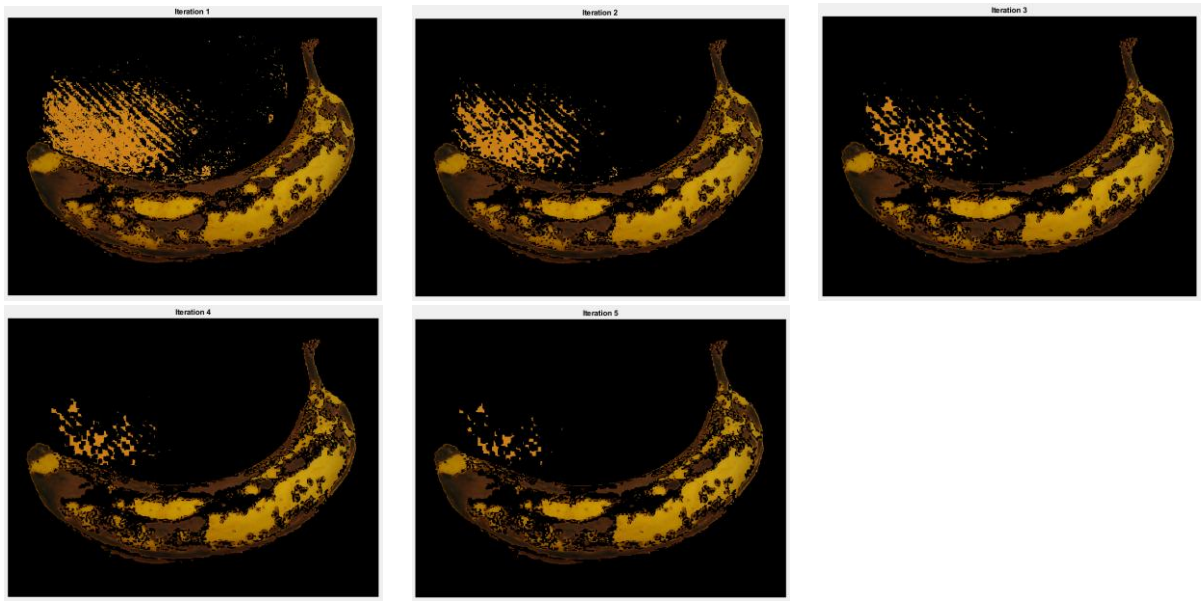
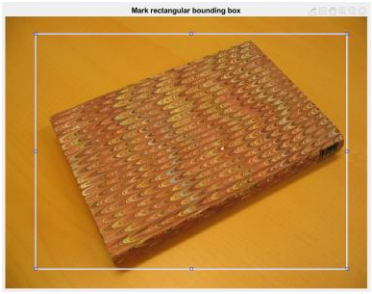


K = 5 and neighborhood = 8





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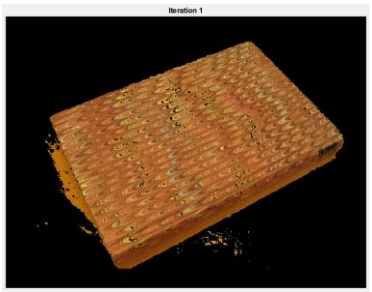

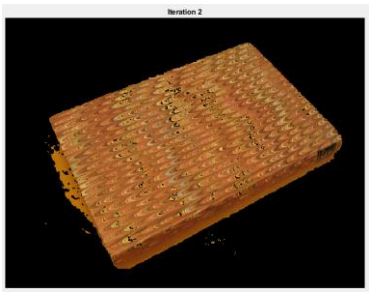

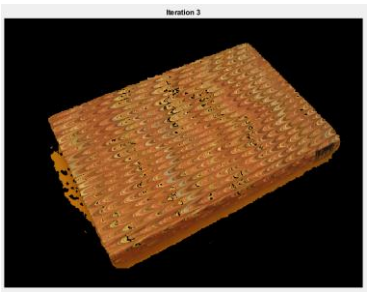

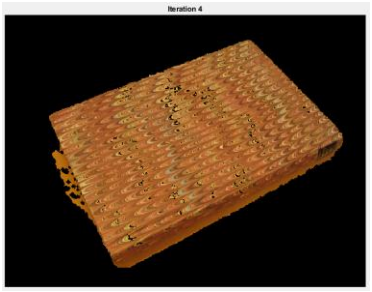

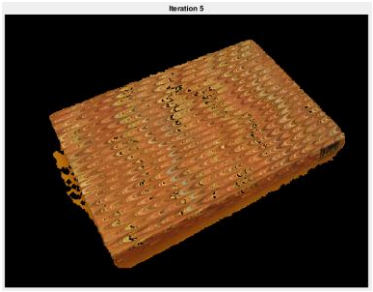

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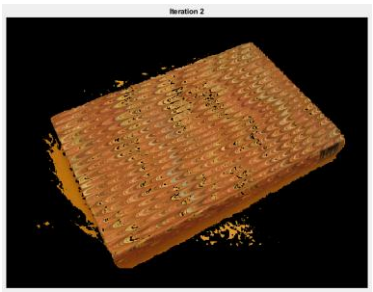
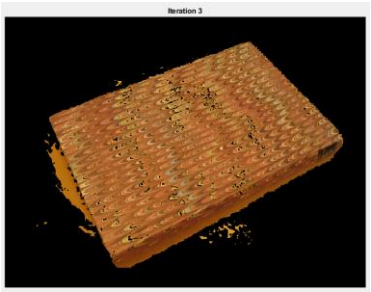
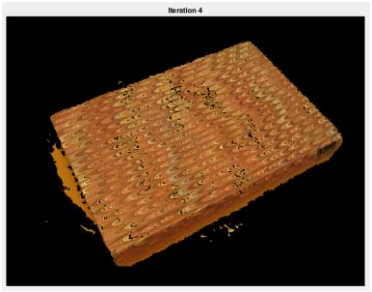
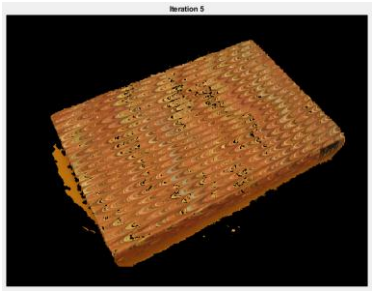
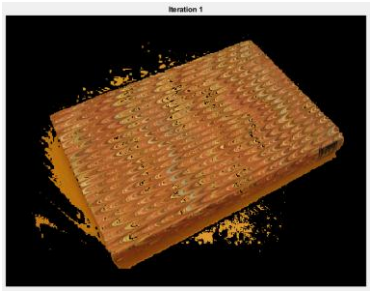


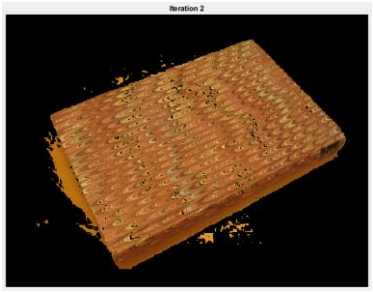


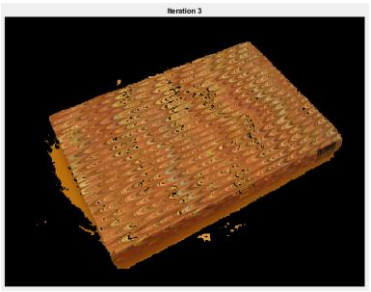


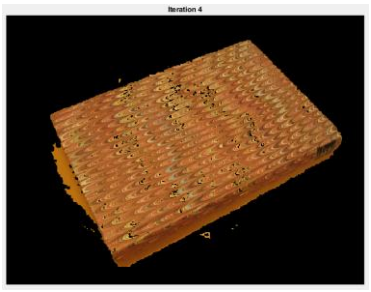


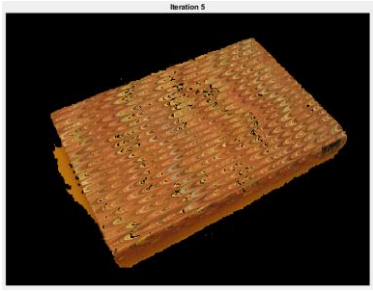
K = 5 and neighborhood = 8











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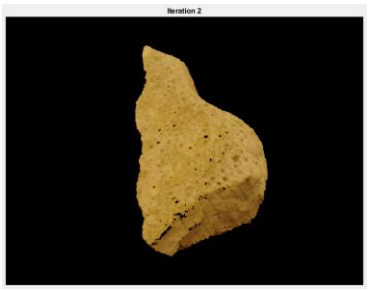
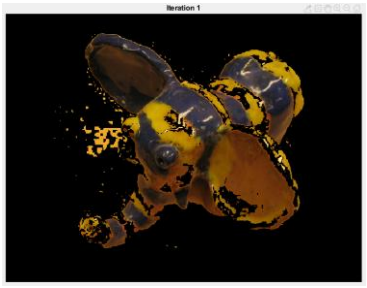
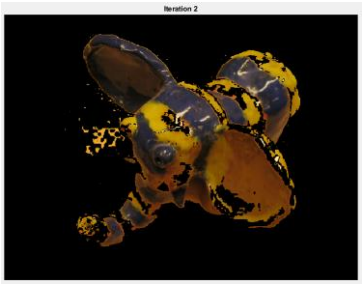
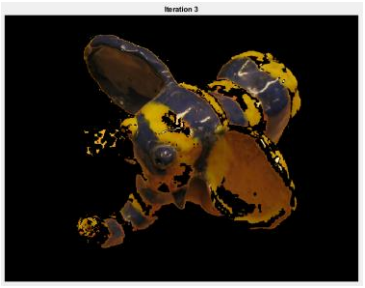


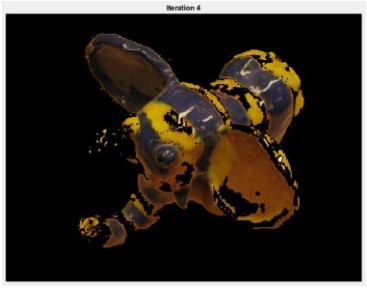
K = 5 and neighborhood = 4

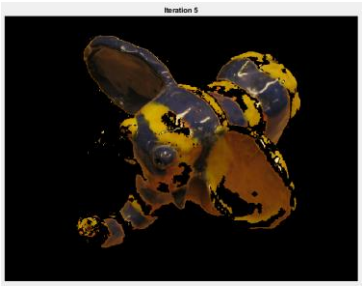
K = 3 and neighborhood = 4



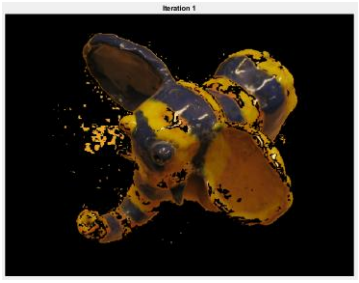


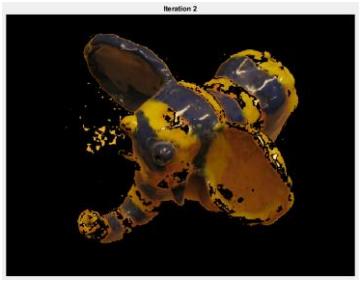


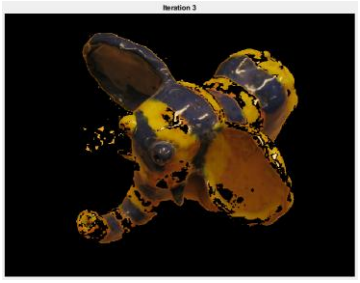


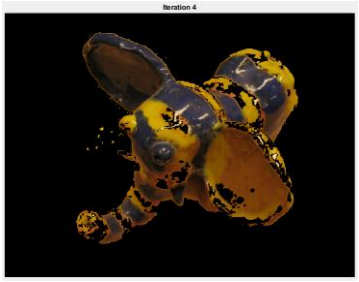


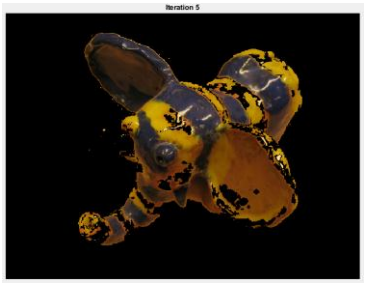
K = 5 and neighborhood = 4











Results for images from my camera:

C) "jug.jpg" with Iterations = 5 and k = 5

Iterations = 5, k = 3

D) "glass.jpg" with Iteration = 5 and k = 5

Iteration = 5, k = 3