Computer Vision & Imaging/ Robot Vision - Formative task

March 18, 2021

Part 1

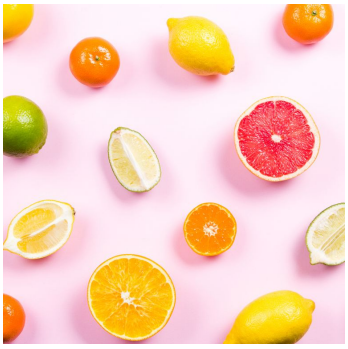
This task is formative. Please submit your code as username_formativetask1.m and see below the expected results of each question.

Question 1.1 *Create a binary edge image of fruits.jpg using only the blue channel of the image. Obtain a binary mask with all edges that are stronger than 0.2 using Sobel edge detection. Show the binary image.*

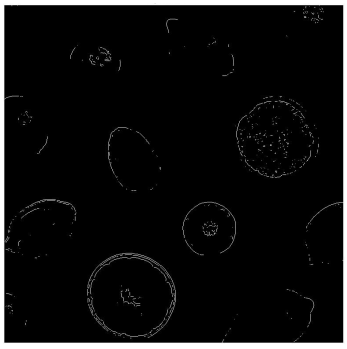
Question 1.2 *Segment the fruits. Set the value of those pixels as one which intensity value difference in the green and blue channels is greater than 30. Show the segmented image.*

Question 1.3 *Correct the result of question 1.2 with binary morphological operation / operations such that the segmented objects do not contain cavities or "cuttings". Show the corrected image.*

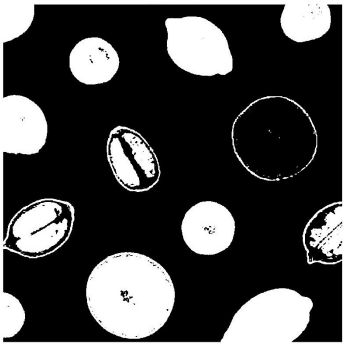
Question 1.4 *Finally, use the appropriate MATLAB function to define and display the boundary box of the 13 objects! Display separately only the grapefruit with the original RGB image pixel values.*



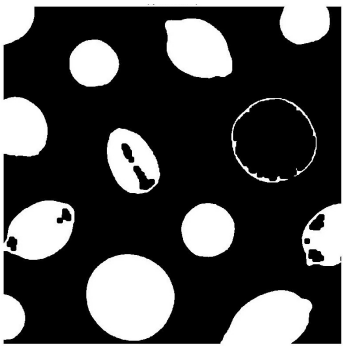
(a) Original image of part 1.



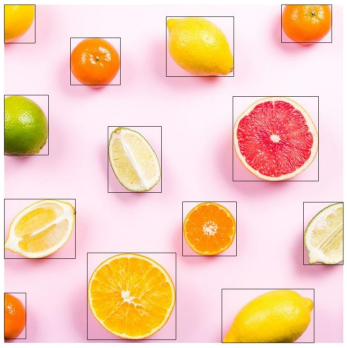
(b) Binary edge image of question 1.1



(c) Segmented image of part 1.2



(d) Segmented image of part 1.3



(e) Bounding boxes of part 1.4

(f) Expected result of part 1.