PROJECT U2
OPERATIONS ON PICTURES

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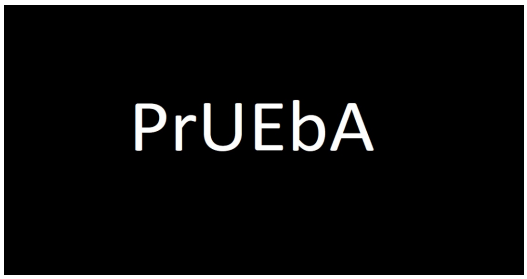
Abstract—In this report, we documented the results of the project of unit 2 of Artificial Vision. In this activity, we applied all the knowledge learned throughout the unit. This includes Morphological Operations, Thinning, Dilation, Erosion, Opening, Closing, Top-Hat Transform.

Index Terms—OpenCV, Morphological Operations, Thinning, Dilation, Erosion, Opening, Closing, Top-Hat Transform.

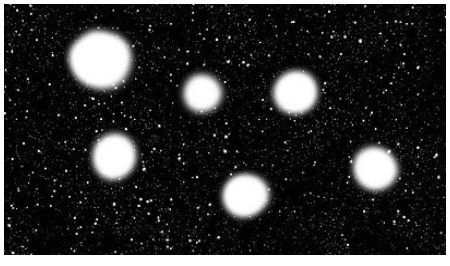
1 PROBLEM TO SOLVE

From the following images perform:
Word picture:



- Perform a erosion and closing to the letter ″P″
- Perform a skeletonization to the letter ″R″
- Perform a dilation to the letter ″U″
- Detect the 8 corners of the letter ″E″
- Perform a skeletonization to the letter ″A″ and then do a dilation
- After applying all the previous operations, show the results in one same picture.

To the ″stars″ picture:

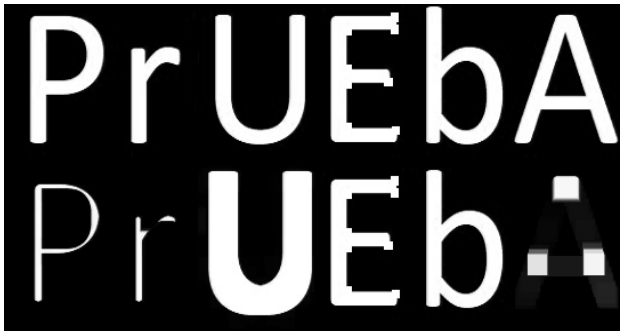


- Extract the background from the foreground
- Extract the foreground from the background

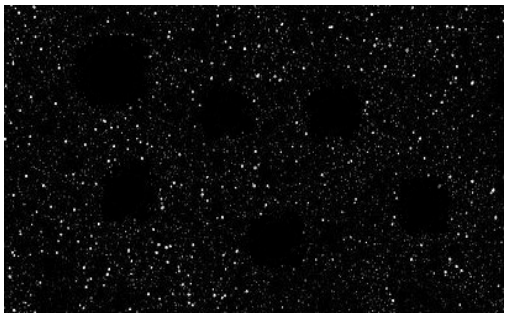
To the fish image:

- Extract the fish from the image and fill the whole contour of the fish.

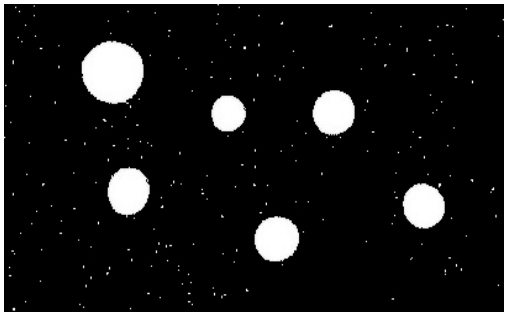
2 RESULTS:



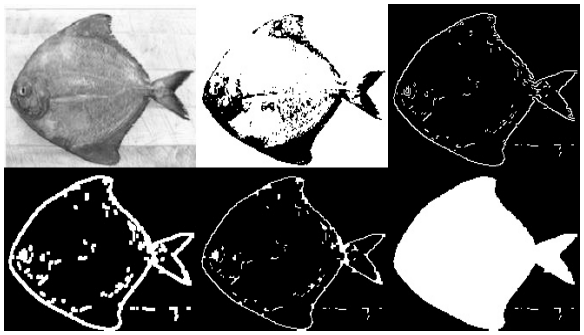
Foreground Extraction



Foreground Extraction



Background Extraction



Fish Contour Filling process

3 CONCLUSIONS:

I consider this activity was useful to memorize all the functions we have learned in this unit. In addition, I have more ways to solve a problem related to image processing. Particularly, I learned a new function to detect the corners of an image. This was essential to solve the letter ”E” problem in the first exercise.

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