Multimedia Data Modelling

Exercise

FINAL EXAM SIMULATION

Write a python program consisting of the following methods:

1. **negative**(*I, t, ptOut*): Given an image I as input, the method will show and save in memory the same image containing the negative operation (n(x,y) = 255 - I(x,y)) applied either in even columns (if t = 0) or in odd columns (if t = 1).

2. **morph**(*I, ptOut*): Apply, show and save to image I sequentially and step by step the morphological operators of *opening* (Erosion + Dilatation) and *closing* (Dilatation + Erosion):

3. **Random-blocks**(*I*): Divide the image into 4 blocks (b1, b2, b3, b4) of the same size and calculate:
   a. on block b1 the mathematical morphology (with respect to some selected by the student)
   b. on block b2 the interpolation (student's choice)
   c. on block b3 the Negative
   d. on block b4 any operation chosen by the student

   Reconstruct, show and save the final image obtained from the concatenation of the different outputs (see figure).