UCLA

Department of Computer and Electrical Engineering

EE211A Digital Image Processing

Winter 2018

Homework 2 (Deadline: 02/19/2018, Monday 6 pm)

Preliminaries

- The image file referenced in this homework (Text-Image) can be accessed from class website:
  https://ccle.ucla.edu/mod/resource/view.php?id=1861549
- Please upload your homework (.pdf file) to CCLE by Monday 02/19/2018 6 pm
- There are no restrictions about the programming language you can use in this homework. The homework can be done using any programming language (MATLAB, Python, …)
- Please include the code, images and your observations in your report

Problem 1

Perform dilation operation on the given 9*9 image with 3*3 structuring element. Check your results in computer (MATLAB, python …) and compare it.

Binary Image:

0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0
0	0	1	0	0	0	0	1	0
0	0	0	0	1	1	0	0	0
0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0
0	0	0	1	0	0	1	0	0
0	0	0	0	1	1	0	0	0
0	0	0	0	0	0	0	0	0

Structuring element:

1	0	1
0	0	0
0	0	1

Problem 2

Perform a non-uniform lighting compensation on the given image(Text-Image) so that text is readable after thresholding. Show the results of thresholding, before and after non-uniform lighting is compensation applied. Do not use single line thresholding functions in MATLAB, python,… that perform this operation in single line.