# Histogram Stretching

Exercise #1 (a) Find the transfer function to convert the range from (1, 10) to (1, 30) with the method of Histogram Stretching, (b) Draw the histogram for the image before the stretching, and (c) Draw the histogram after the stretching.

The image is represented as a 4-by-4 matrix with the following greyscale values in each row: Row 1 contains 10, 10, 4, 5. Row 2 contains 10, 8, 2, 3. Row 3 contains 10, 8, 2, 3. Row 4 contains 5, 4, 9, 9.

If you cannot read the following image in a tabular form, you may ignore it; the information is given above in text.

|  |  |  |  |
| --- | --- | --- | --- |
| 10 | 10 | 4 | 5 |
| 5 | 4 | 8 | 2 |
| 10 | 8 | 2 | 3 |
| 5 | 4 | 9 | 9 |

Exercise#2 (a) Complete Histogram Equalization of the previous image using the scale factor of 30, (b) Show the resulting image, (c) Draw the histogram for the original image, and (d) Draw the histogram for the equalized image.