Lab 8 Report

Exercise one:

- the histogram can be computed by going though each pixel and checking its intensity
- the cumulative histogram is the partial sum array of the normal histogram
- mean and deviation can be computed concurrently, with one pass of the image

Exercise two:

- automatic thresholding is done by finding the threshold iteratively – first, the threshold is the median of the minimum and maximum intensities (the leftmost and rightmost values different from 0 on the histogram) – then receives the average of the median values, until the difference is less than the error

Exercise three:

- each operation can be done by applying those simple operations described in the lab (stretch/shrink, gamma correct, brightness increase) and truncated on 0 and 255

Exercise four:

- histogram equalization can be done more easily by having the cumulative histogram and applying the following formula

  out.at<uchar>(i,j) = (float) 255 / (img.cols * img.rows) * histc[img.at<uchar>(i, j)]