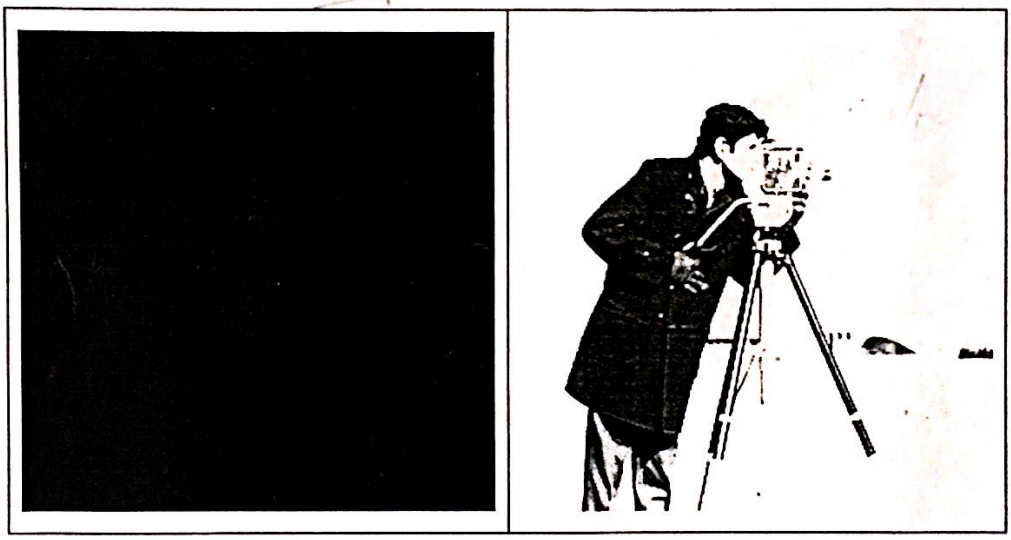
Due: Tuesday 15:00pm, Oct. 24, 2017

NOTE: For all of the homework in this course, do not use the problem-related OpenCV API (neither built-in nor library) to solve your problem. For example, do not use **cvCalcHist(.)**…etc. in the histogram problem. But you may use **cvCalcHist(.)** in the up-coming homework assignment.

1. Grey Level Transformation (C/C++) (50%)
   (a). Negatives the image *lena512.raw*. Show the result image and discuss what situation will you use Negative transform. (Figure, 5%; Discussion, 5%)
   (b). Enhance the image *cameraman_b512.raw* and *livingroom_d512* by Power-Law and Piecewise-Linear transformation that learned in class. Show the best parameters, the gray-level transform curve and output images. (Figure, 20%; Discussion, 20%)



2. Histogram Equalization (C/C++) (50%)
   (a). Plot the histogram of the original and result images from Problem 1. Discuss the difference among these histograms. (Figure, 15%; Discussion, 10%)
   (b). Perform histogram equalization on *cameraman_b512.raw*, *livingroom_d512*. Plot their histograms and compare the histograms before and after histogram equalization. Discuss the result with Problem 1. (Figure, 15%; Discussion, 10%)