Computer Vision HW #3 (due 12 June 2020)

You are given an image manipulation package in Visual ++ and image viewer. The main file K-means.cpp will let you know how to load an image, change pixel values, and save the resulting image. Just compile the package, and observe how the input image "KU.raw" is changed to output images "Out1.raw" and "Out2.raw" by the simple function pixel(x,y).

You may download a simple image viewer from http://www.irfanview.com/

1) Using the package, design the K-means algorithm to cluster 1-dimensional pixel values. After clustering, assign each cluster with the average gray level. There are three input images in the main directory:

   KU.raw (720x560 image, each pixel is an 8-bit number)
   Gundam.raw (600x600 image, each pixel is an 8-bit number)
   Golf.raw (800x540 image, each pixel is an 8-bit number)

   Apply the K-means method to each image with the number of clusters = 2, 4, or 8, respectively. At each iteration, observe the cost.

   Email the resulting image with the cpp file to teaching@mcl.korea.ac.kr.

By the way, if you feel more comfortable with any other language, such as Matlab, you may use it instead of C++.