Digital Image Processing (1072)

Homework #1 (DUE: 2019.03.18)
(Please note that you have to upload your source codes (and a brief description about your codes or algorithms, optional) to the server before the deadline. Please check the course website for more details.)

Construct a simple image processing tool with the following functionalities:

1. A simple graphic user interface.

2. Open/save/display 256-gray-level images in the format of JPG/TIF.

3. Adjust contrast/brightness of images by the changing the values of "a" and "b" in 3 different methods:

   (A) linearly ($Y = aX + b$);

   (B) exponentially ($Y = \exp(aX+b)$);

   (C) logarithmically ($Y = \ln(aX+b)$, $b > 1$).

4. Zoom in and shrink with respect to original size of images by using bilinear interpolation.

5. Display the histogram of images. An "auto-level" function by using histogram equalization should be provided.