

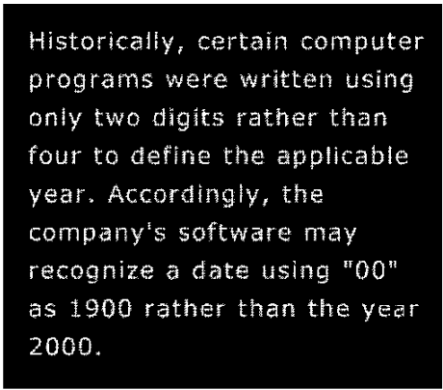
Image Processing – HW2 (04/17/2019)

Instructions – Follow these carefully:

1. Please upload your work as a zip file attachment to Moodle. In the zip file, it must have the source code and a PDF report where you explain and display the outputs for each problem.
2. You can use either Python or Matlab to do the work.
3. Please feel free to read related materials available in the official Matlab/Python documentation.
4. The due date is 5/1 before 11:55pm. No late submission is allowed.

Assignment:

1. Use binary morphological operations to 1) fix the image shown below (“text-broken.tif”) and 2) find the boundaries of each characters like ‘Historically.’



Historically, certain computer programs were written using only two digits rather than four to define the applicable year. Accordingly, the company's software may recognize a date using "00" as 1900 rather than the year 2000.

2. Implement the conventional histogram equalization method (uniformly distributed histogram specification) and apply it to the image (“aerialview-washedout.tif”). You need to compute the histogram, cumulative distribution function, and transformation function without using built-in APIs.
3. Following Problem 2, please apply the histogram equalization method to the image (“einstein-low-contrast.tif”). Does the histogram-equalized image look good visually? If not, can you use some contrast enhancement techniques to make it better?