CPS566 Image Processing
University of Dayton
Department of Computer Science
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Project-2

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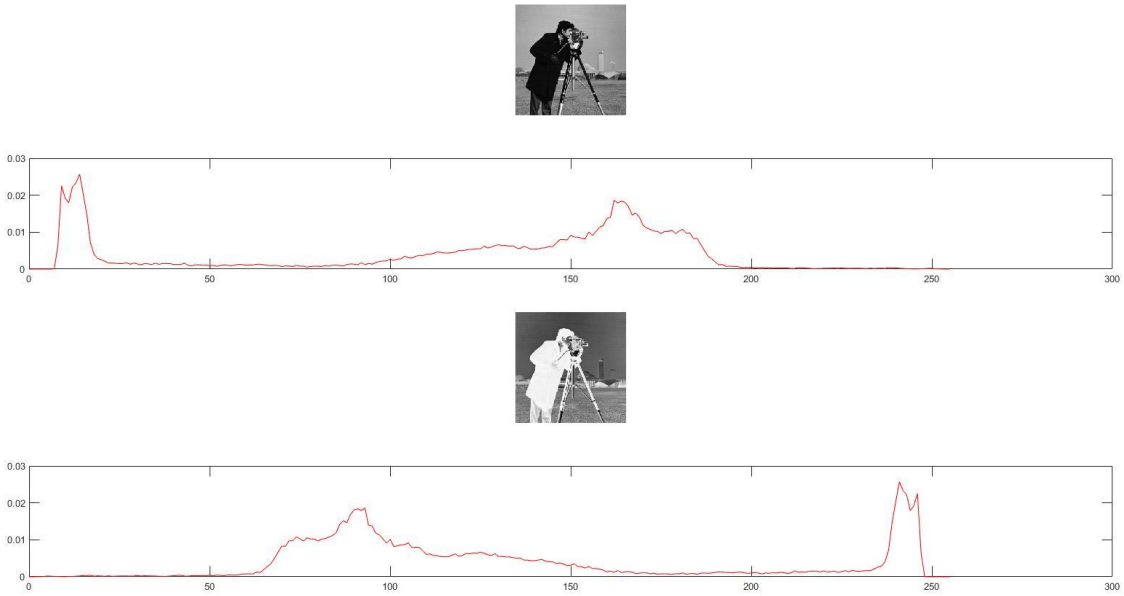
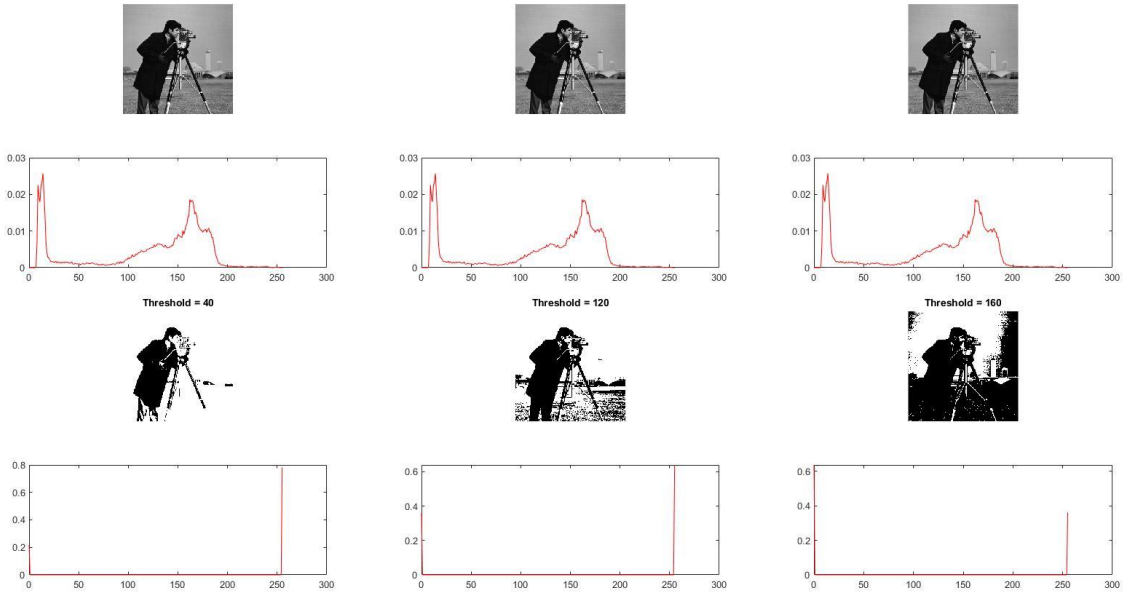
- Histograms are shown along with each output.
- Please zoom the output window to watch the output precisely.

Q1.

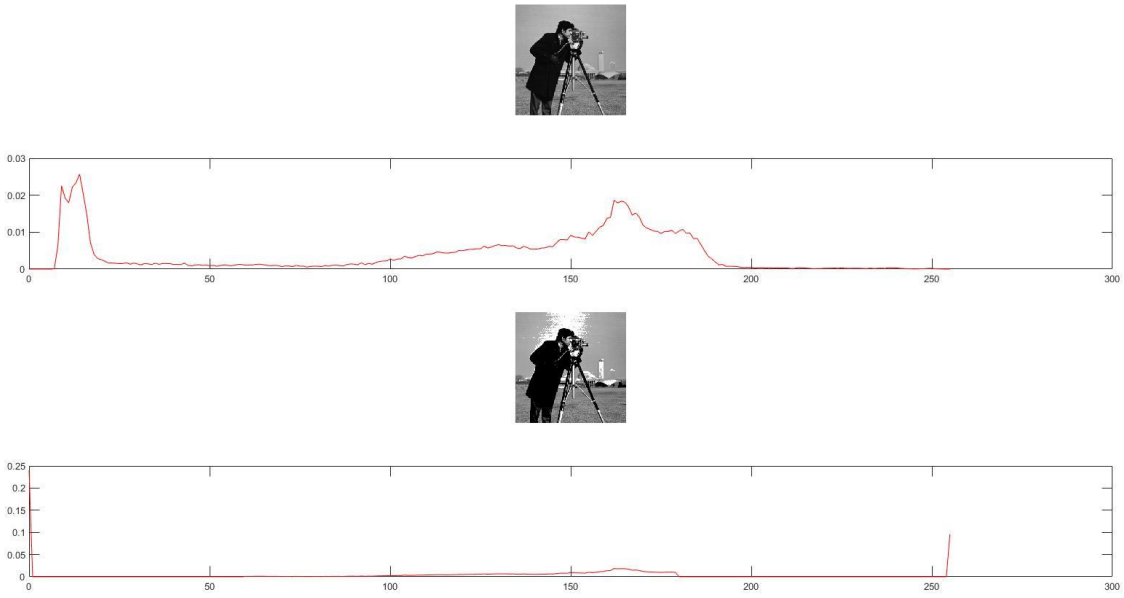
i. The output image shows the negative image of a grayscale image. It is performed by substracting each pixel value from the maximum value of color used.



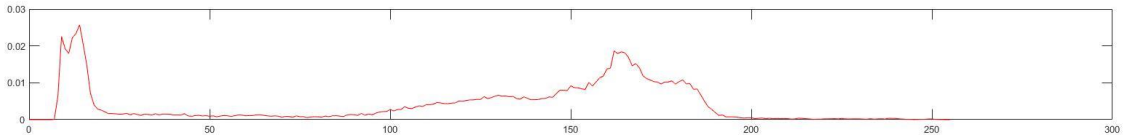
ii. The thresholding is applied by using one of the syntaxes provided by MATLAB. Before thresholding, the image is normalized. Different threshold values are stored in a matrix.
Here, the array of image array is used. **Instead of performing operations on each pixel individually, every operation is performed on matrix.** This can be useful when we are using the GPU. We can apply the operations in parallel.

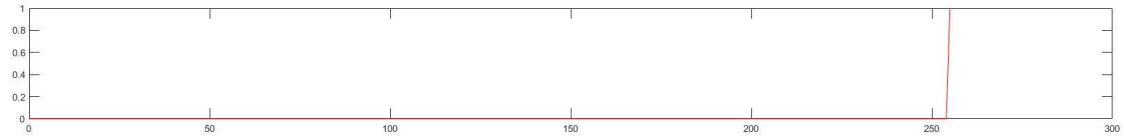


iii. The same syntax is used here. The only difference is, there are two different threshold values, and thresholding is performed as per the instruction.

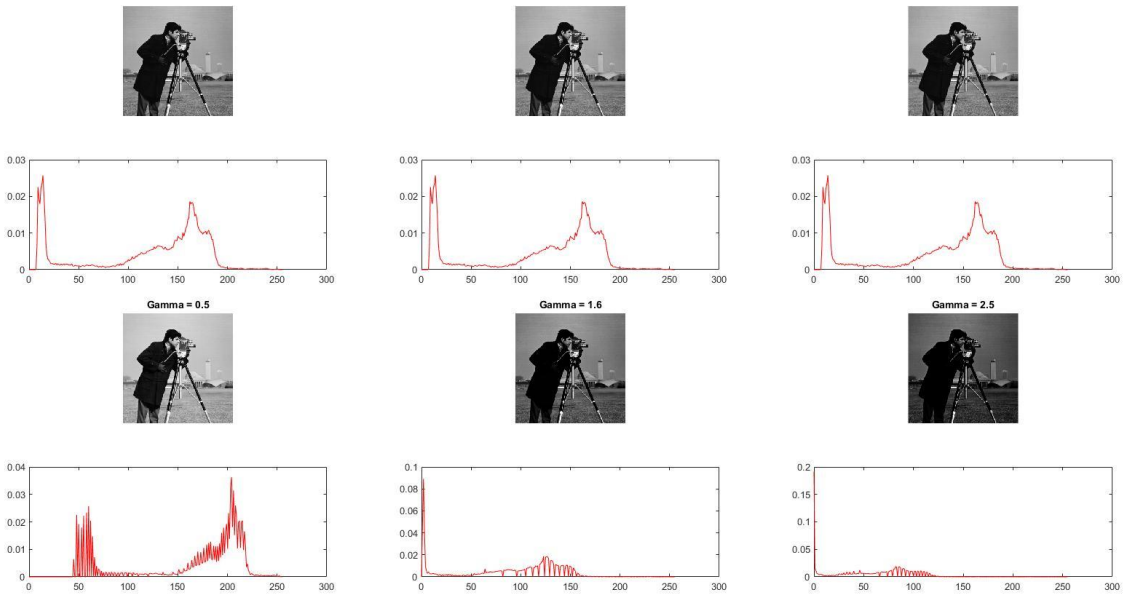


iv. Logarithmic Transformation is performed on the matrix directly. It makes the image **brighter**. Its histogram is calculated.





v. Gamma Transformation is applied. As the image is **normalized, Gamma < 1 makes the image brighter. Gamma > 1 makes the image darker.**



Q2.

Histogram is calculated and shown along with the output itself.