Part 2

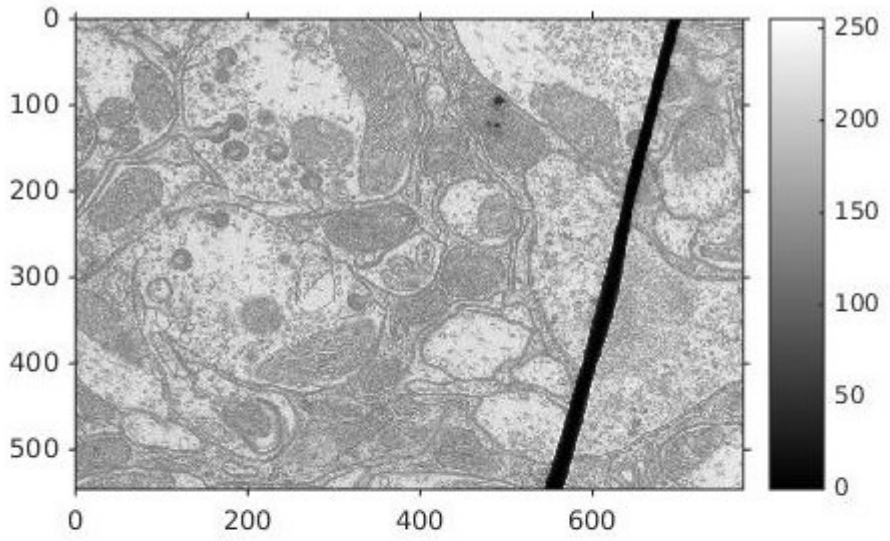
Part 1 be run using MyMainScript.m in folder relative path 2/code/ which will cal all the require functions and will generate the output images.

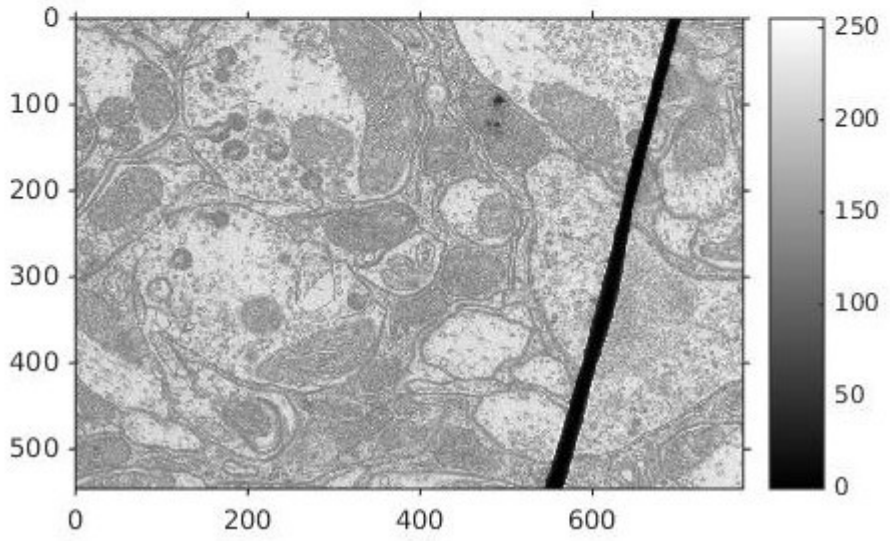
a. myLinearContrastStretching()

Pseudo code:

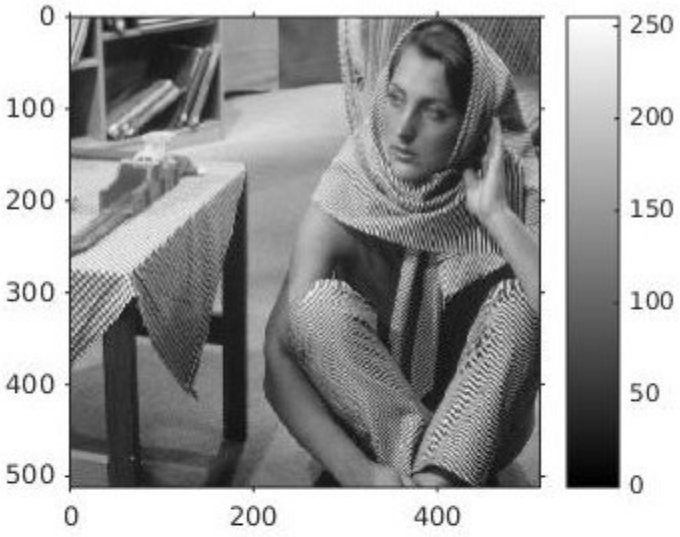
1. Find the maximum and minimum intensity among all the pixels of the input image.
2. Find the span between the minimum and maximum intensity.
3. calculate the intensity_ratio as 255/ intensity span.
4. calculate the output intensity of a pixel using the formula:
*(pixel_intensity - minimum_intensity) * intensity_ratio*

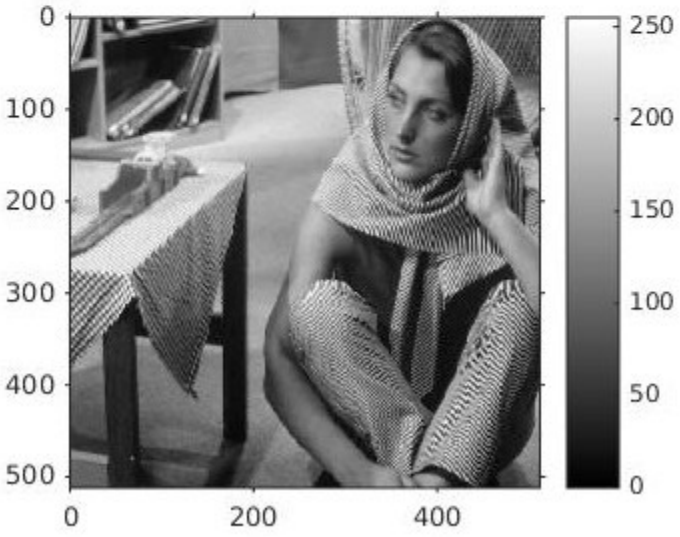
Output for TEM.png:



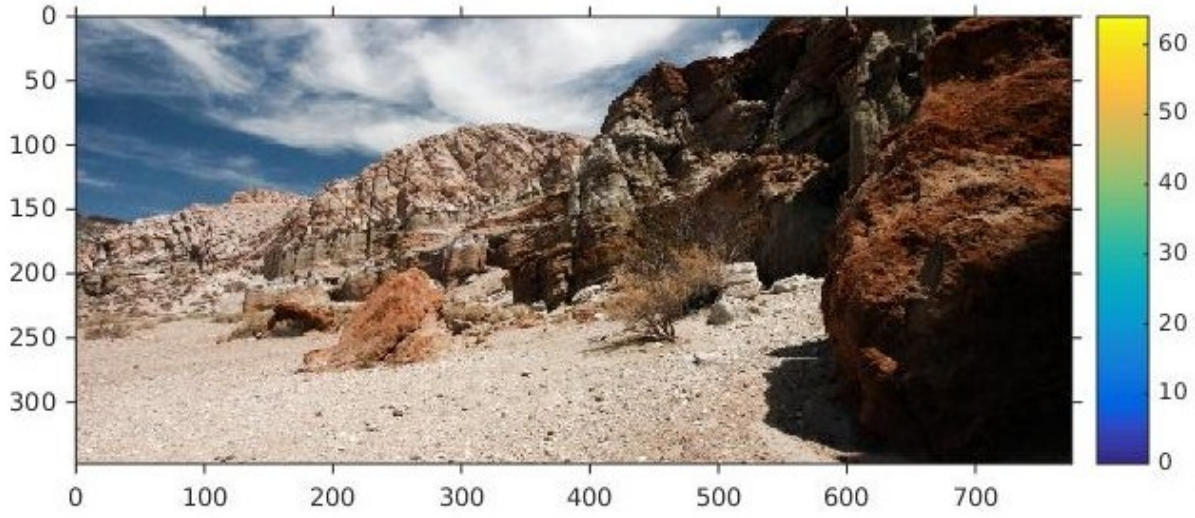


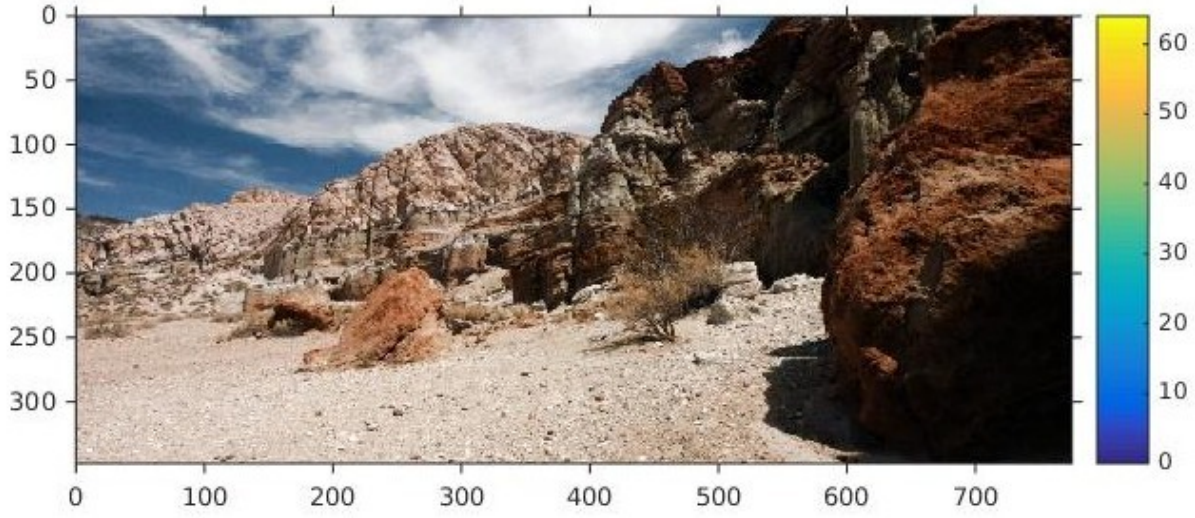
Output for barabara.png





output for canyon.png

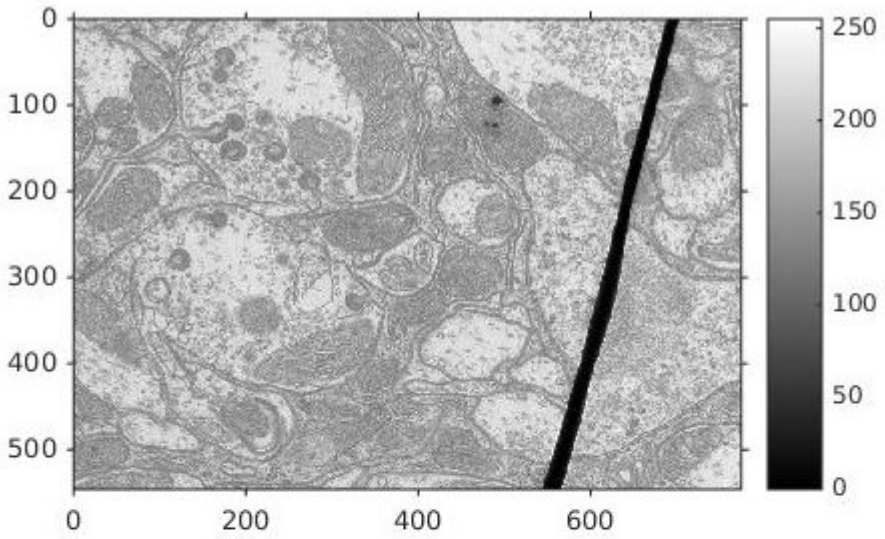


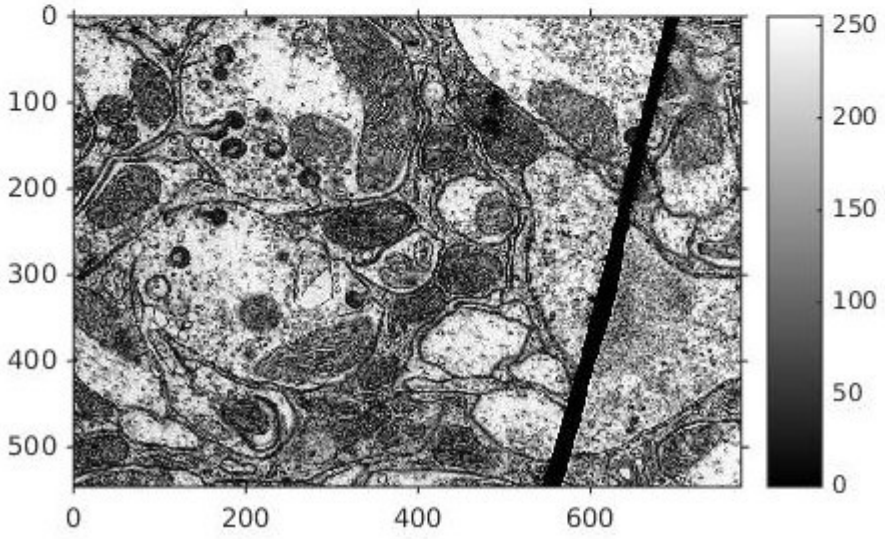


B. myHE()

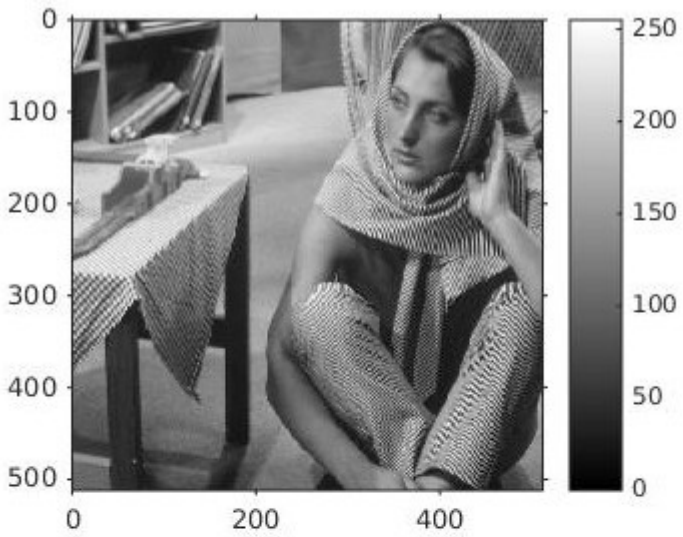
This function performs the histogram equalization on a given input image.

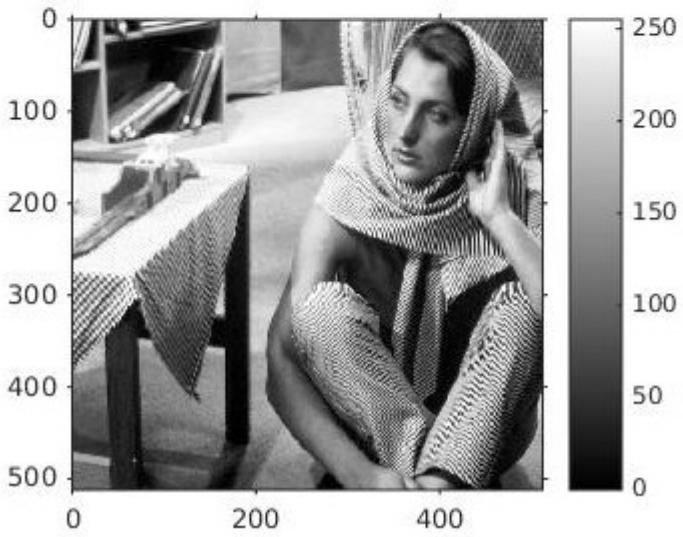
Output on TEM.png:



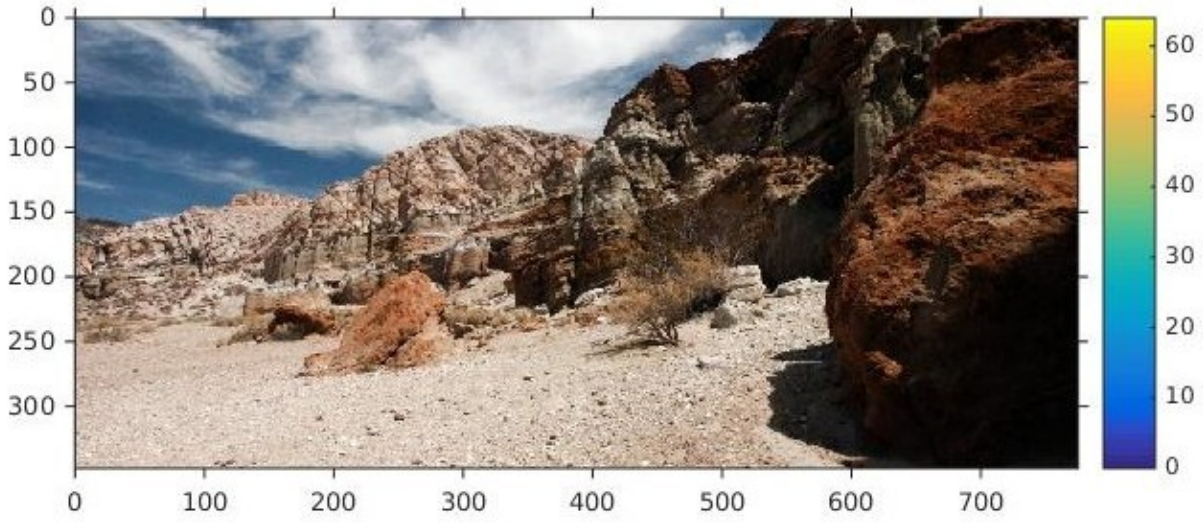


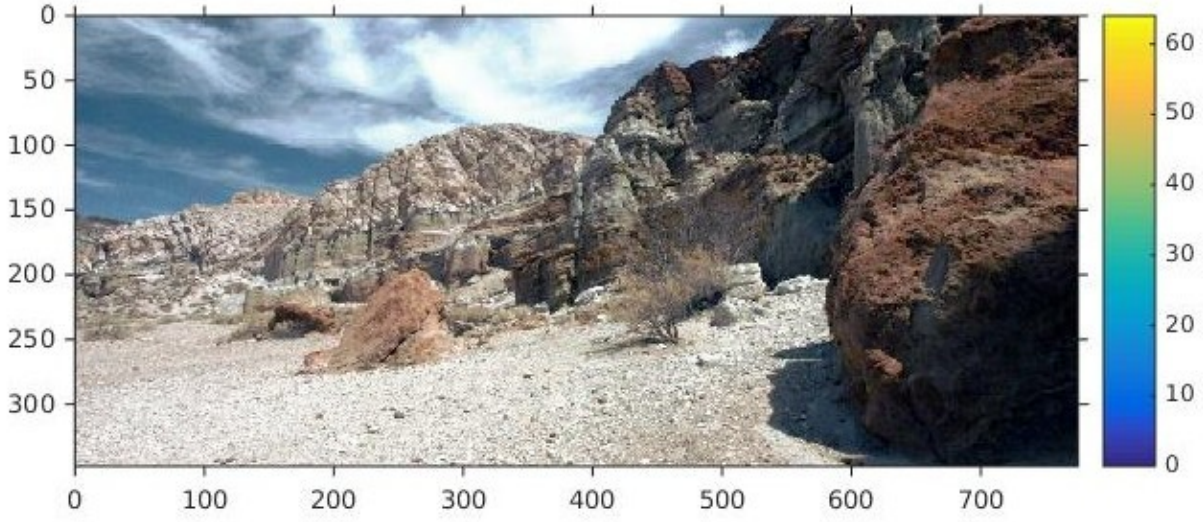
Output on barbara.png





Output on canyon.png



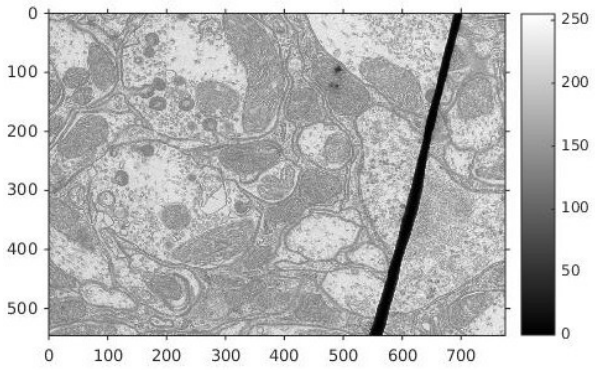


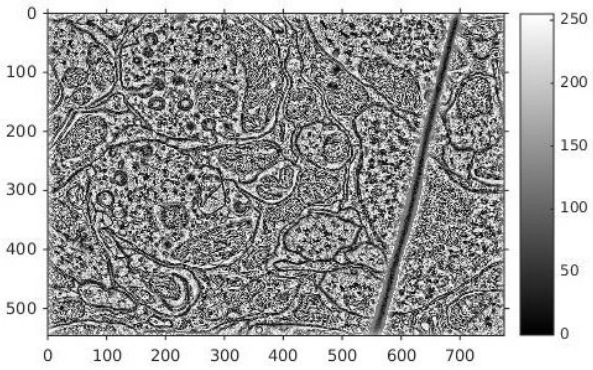
C. myAHE()

This function performs adaptive histogram utilization on the given input images:

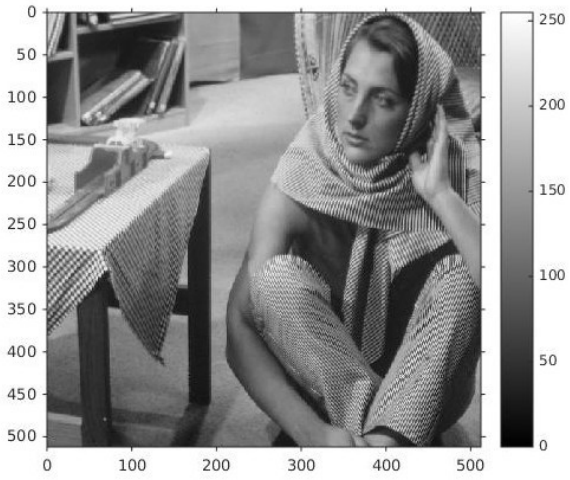
Output with window size ==25

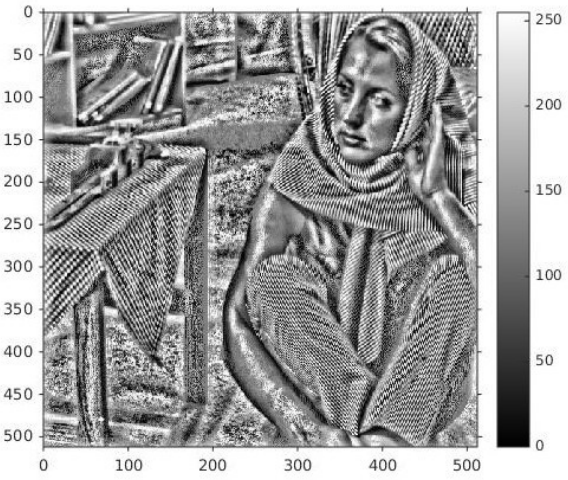
Output on TEM.png



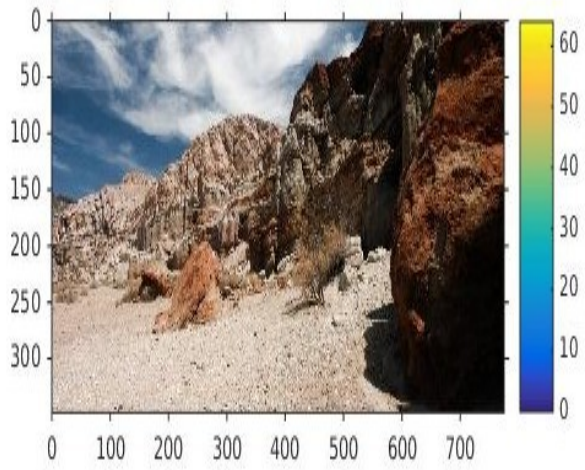


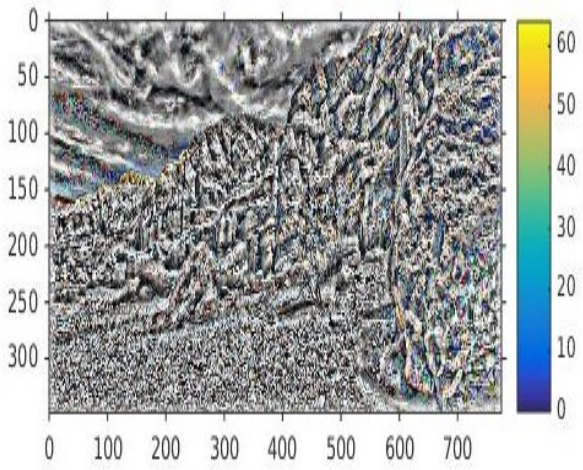
output on barbara.png





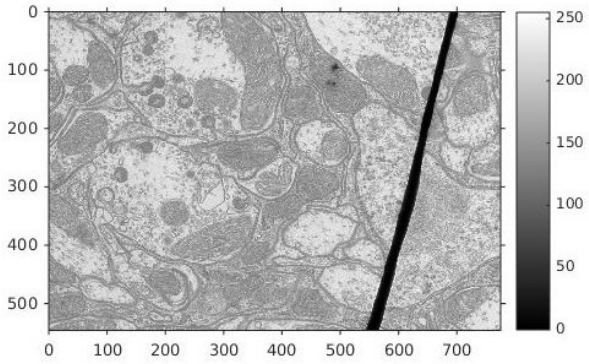
Output on canyon.png

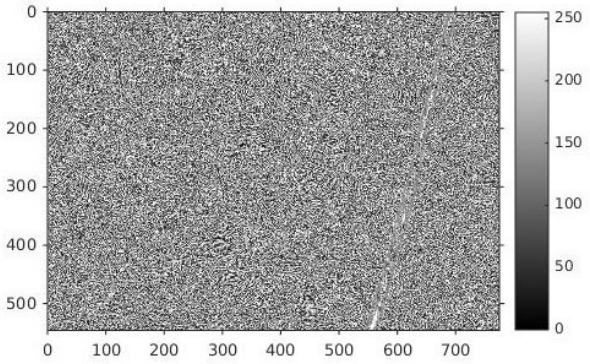




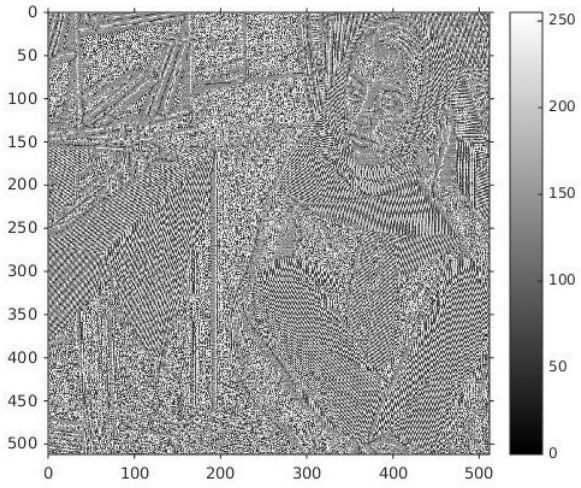
Output with window size = 3

Output on TEM.png

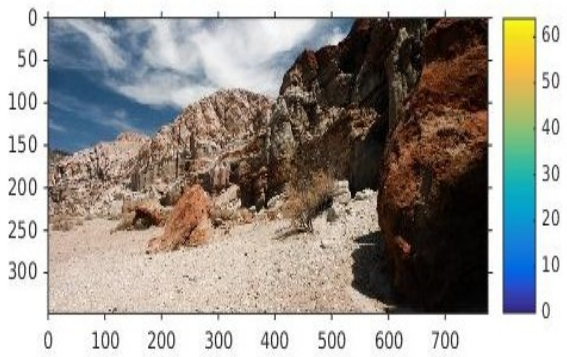


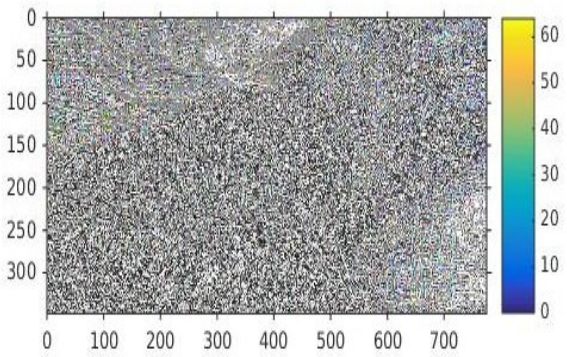


Output on barbara.png



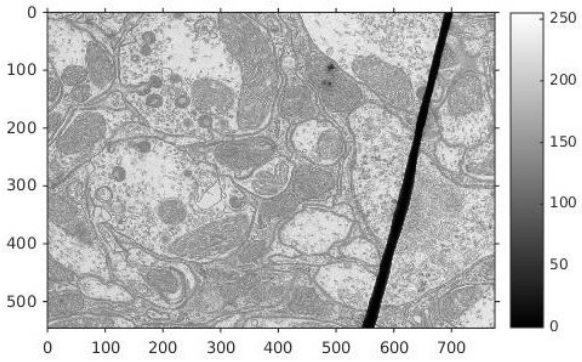
Output on canyon.png

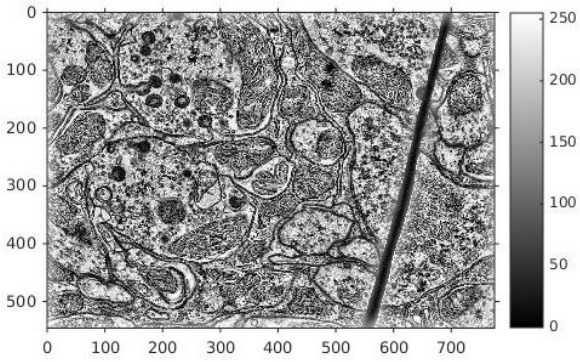




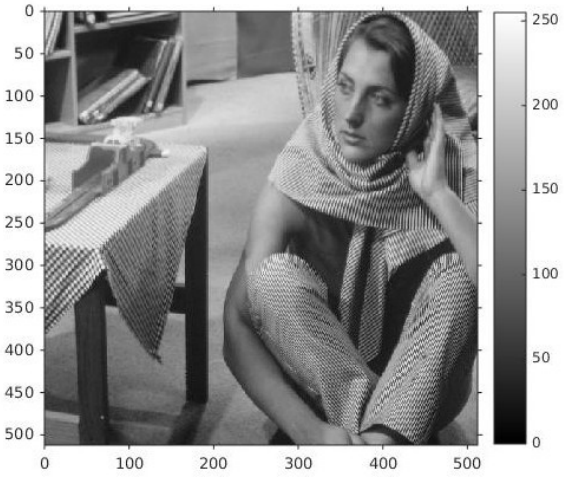
Output with window size = 55

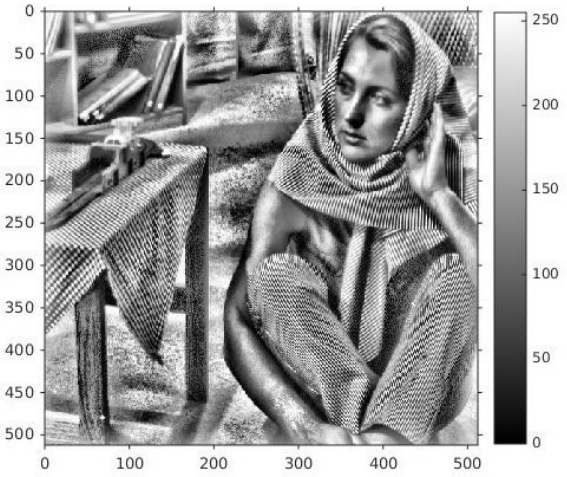
Output on TEM.png



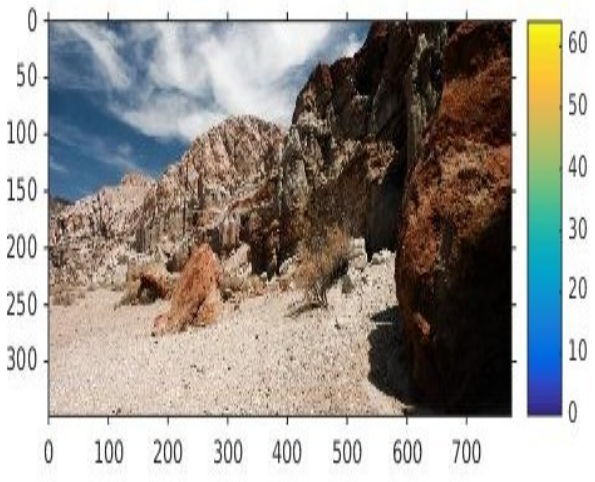


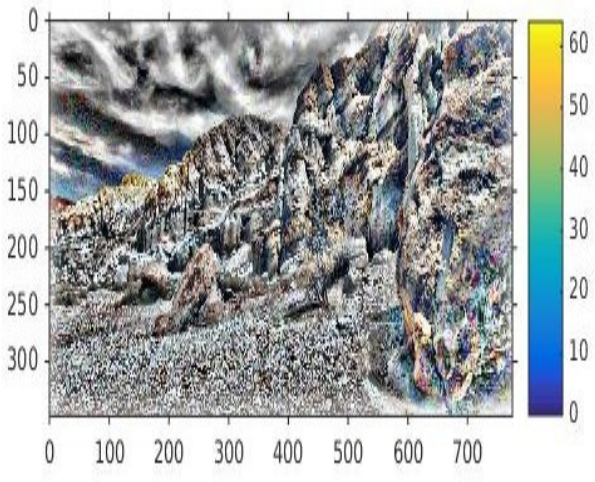
Output on barbara.png





Output on canyon.png



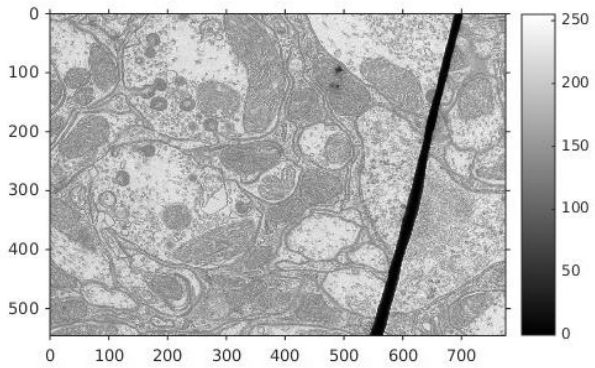


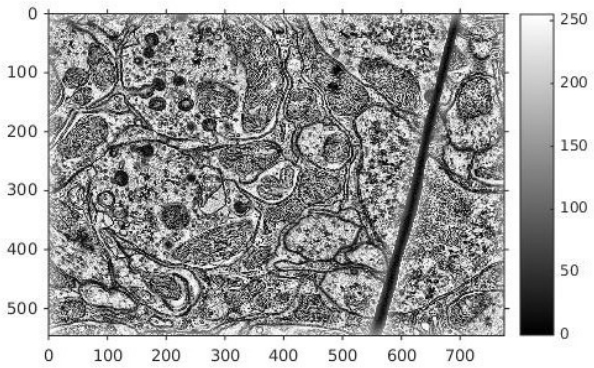
D. myCLAHE()

The output of CLAHE on the given set of input has been given below:

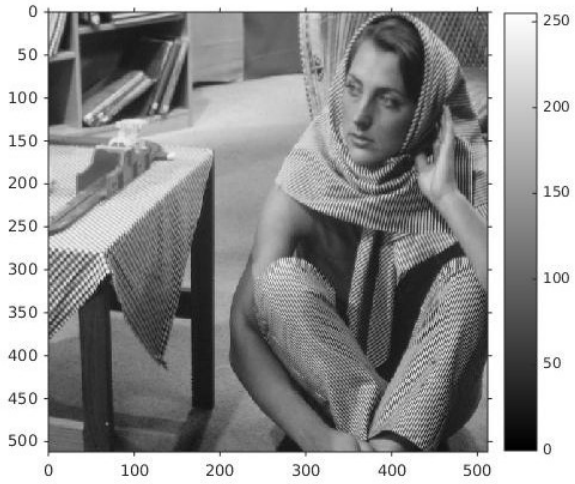
Window Size 55
Threshold parameter: 0.4

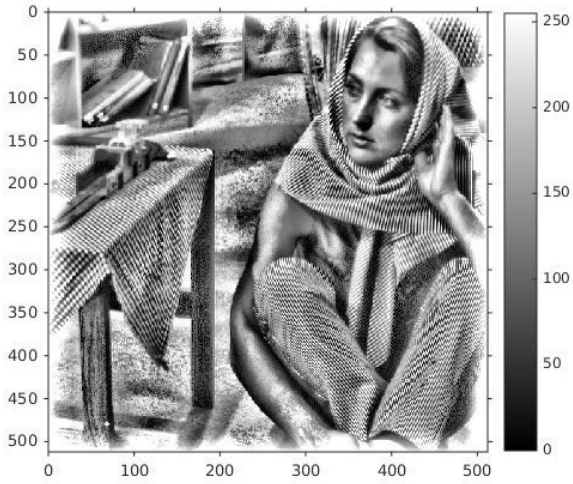
output on image TEM.png



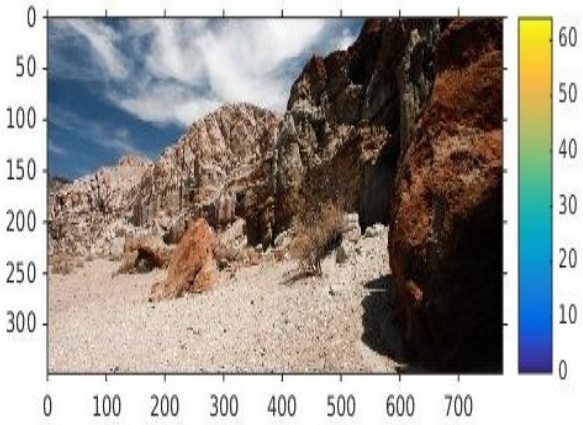


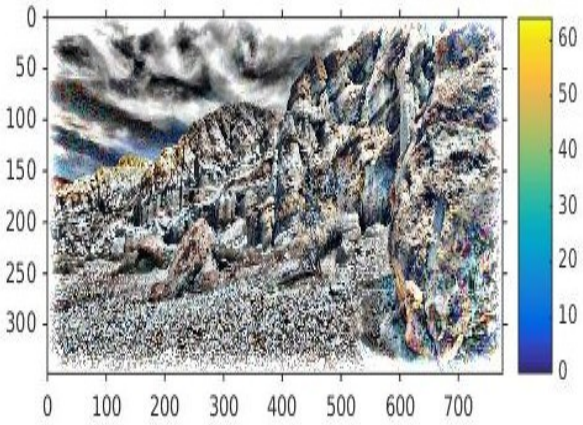
output on image barbara.png





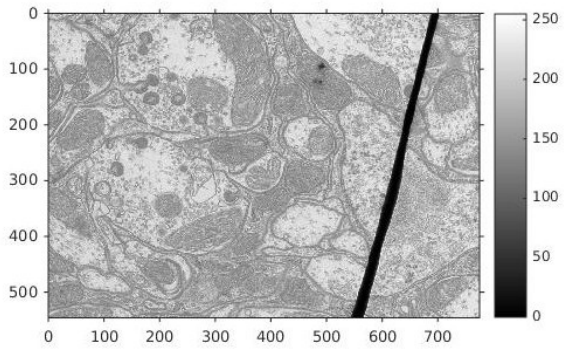
output on image canyon.png

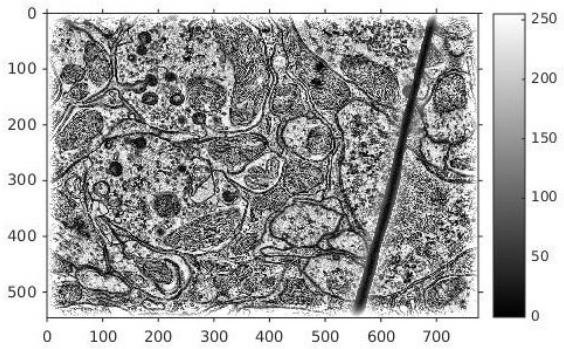




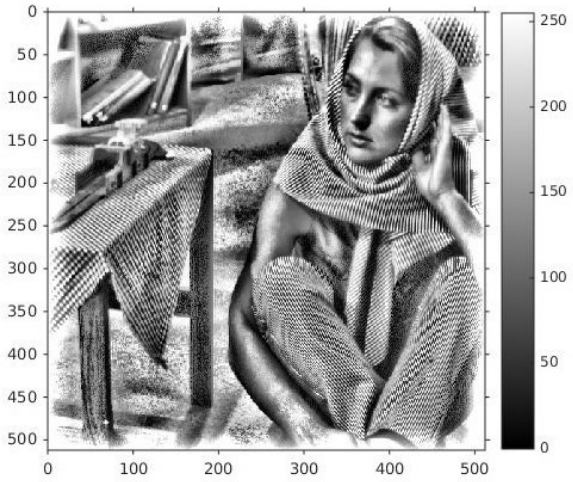
Window Size 55
Threshold parameter half of previous one: 0.2

output on image TEM.png





output on image barbara.png



output on image canyon.png