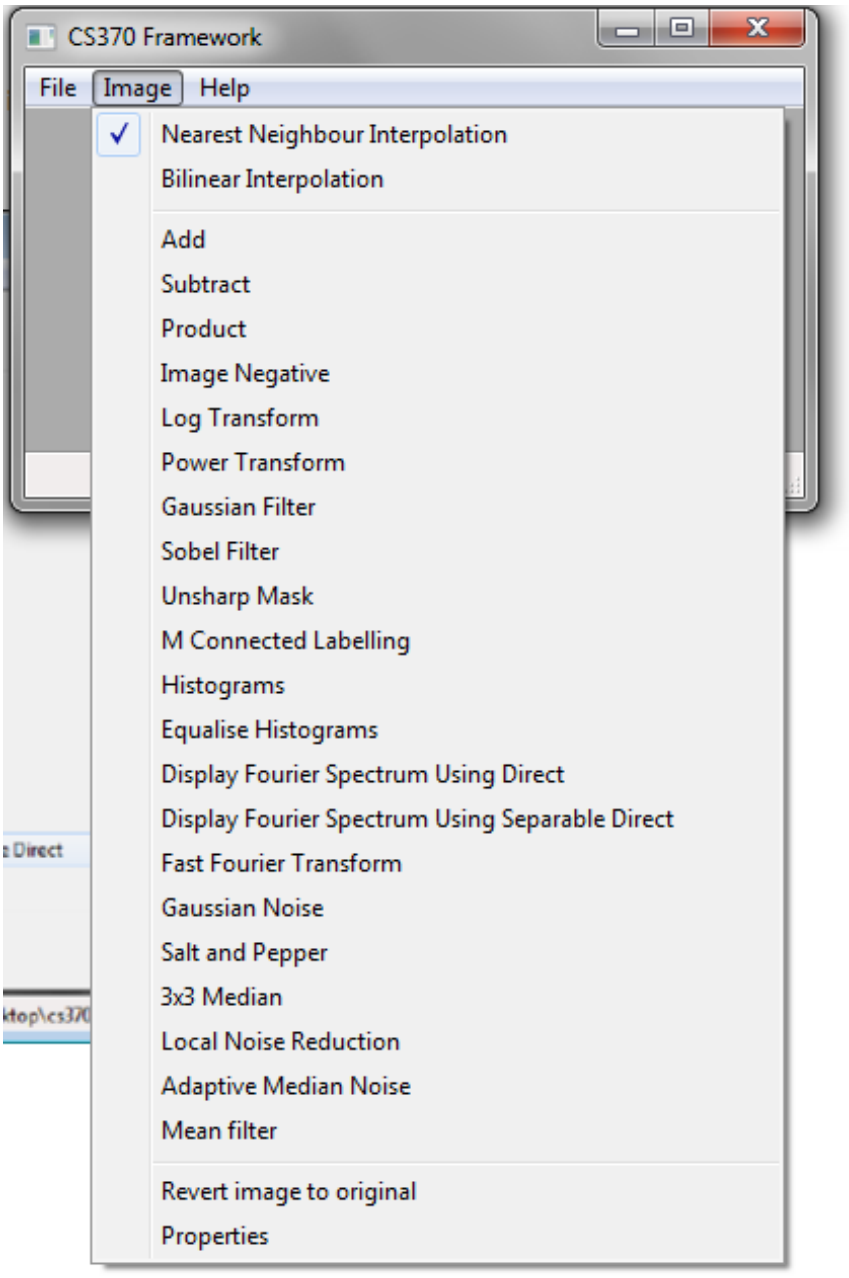
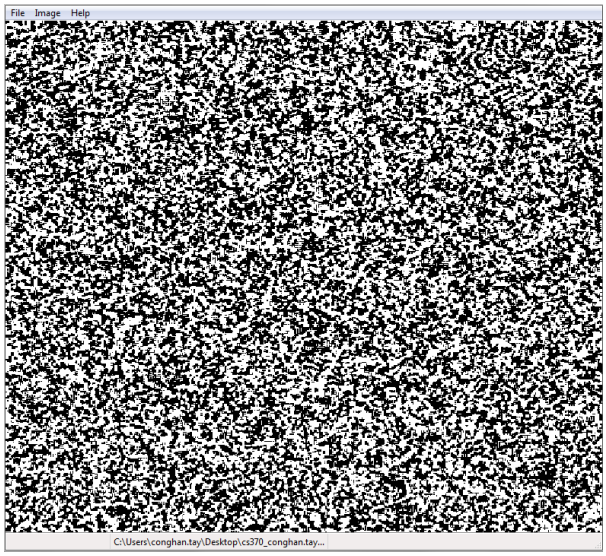
Intro

All noise and noise reduction features are under Image>>

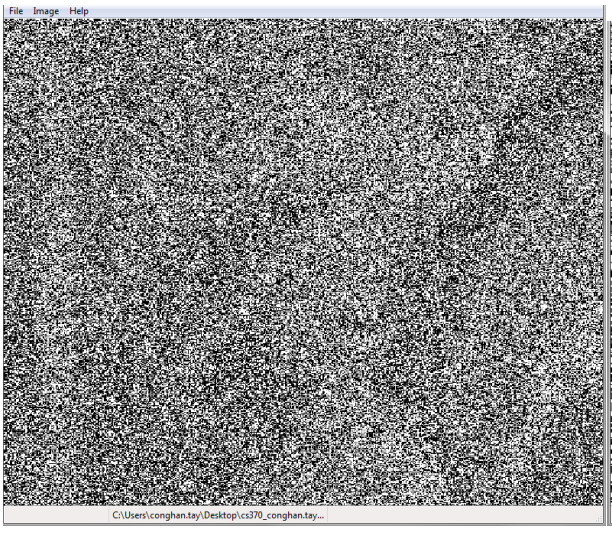


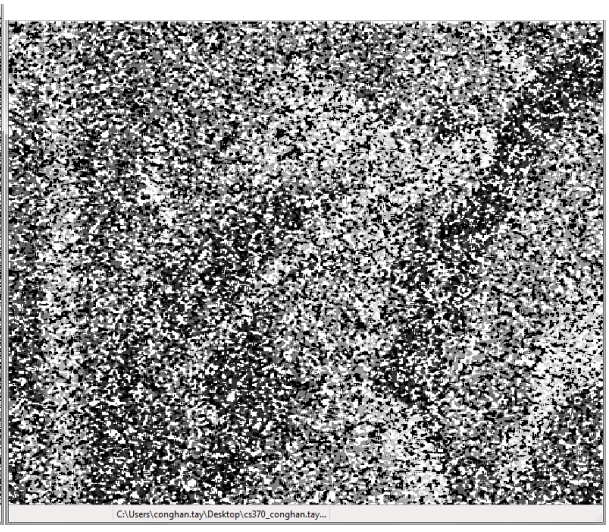
Part B Noise Reduction

Salt and Pepper, P(a) = P(b) = 0.5

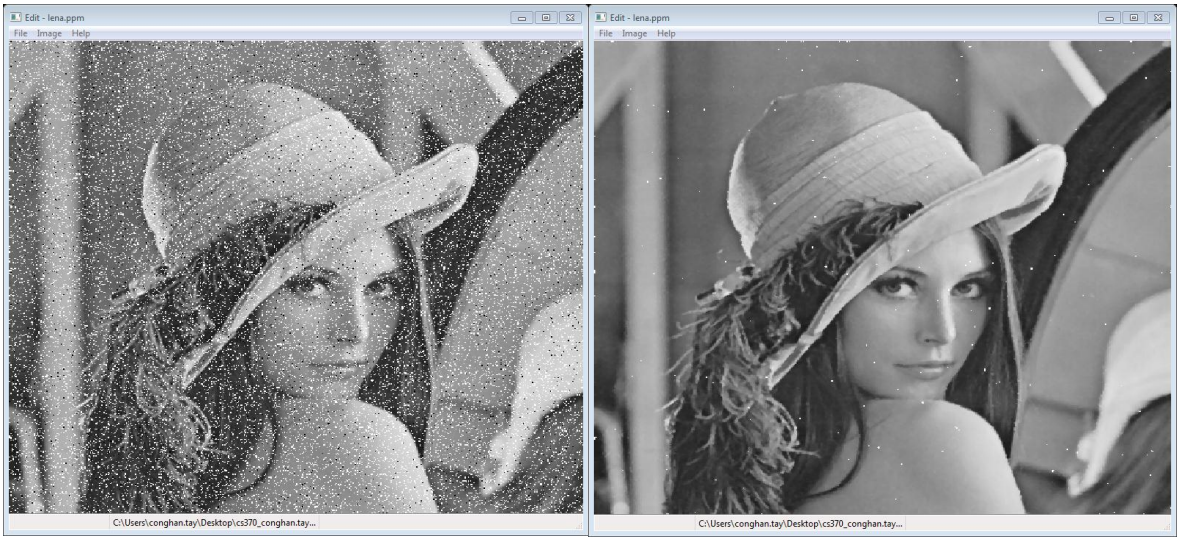


Salt and Pepper, P(a) = 0.4, P(b) = 0.6





Salt and Pepper, P(a) = 0.01, P(b) = 0.9



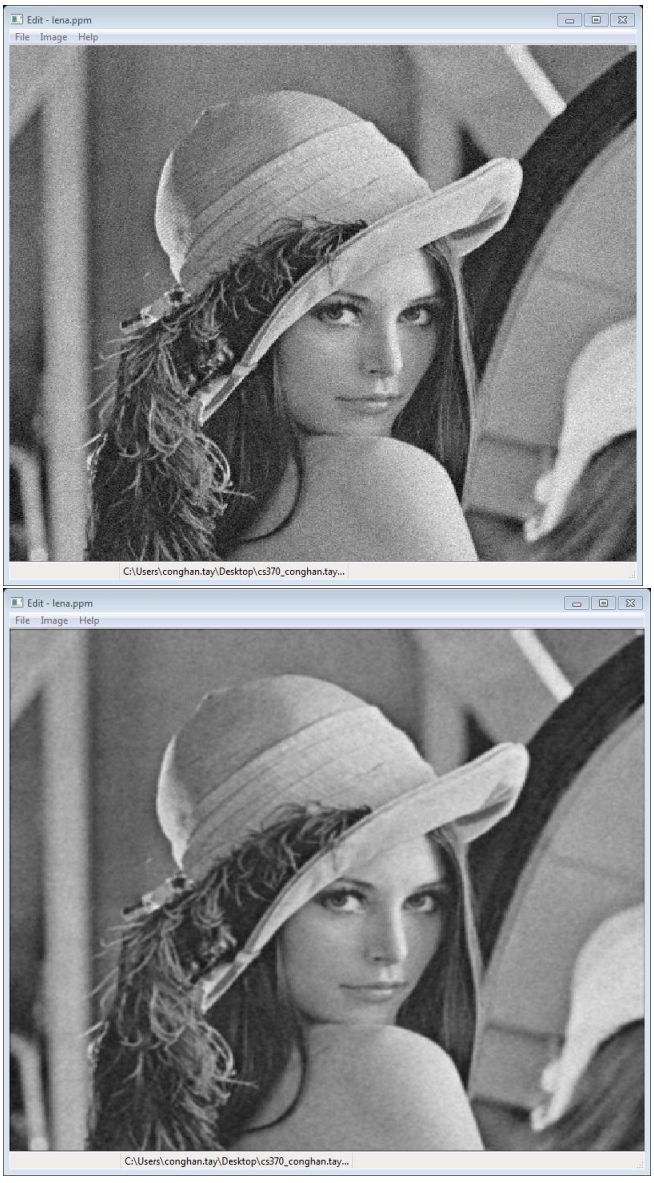
As shown above, for images with high amounts of salt and pepper noise, median filter is not able to efficiently remove the noises. Only when P(a) = 0.01 and P(b) = 0.9, are there noticeable differences.

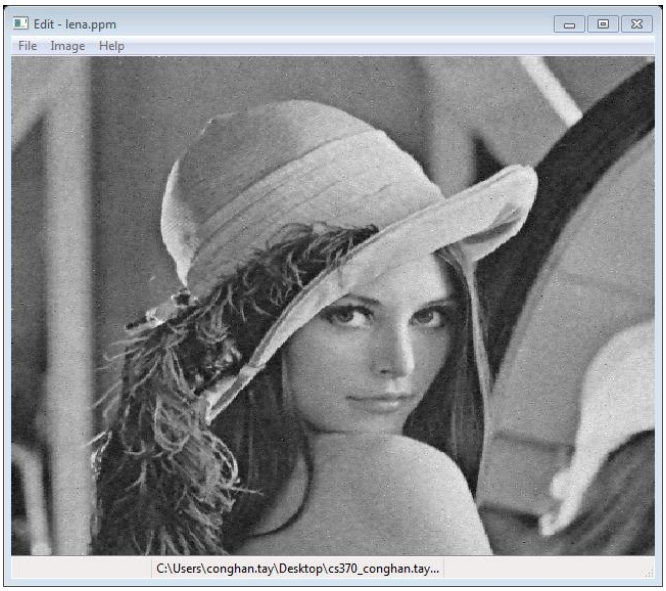
Part C Local Noise Reduction method

Following are images of a noisy image followed by a image applied with mean filter followed by a image with local adaptive filter.

Variance = 128,

Noisy, Mean and Local Adaptive:




Edit - lena.ppm
File Image Help
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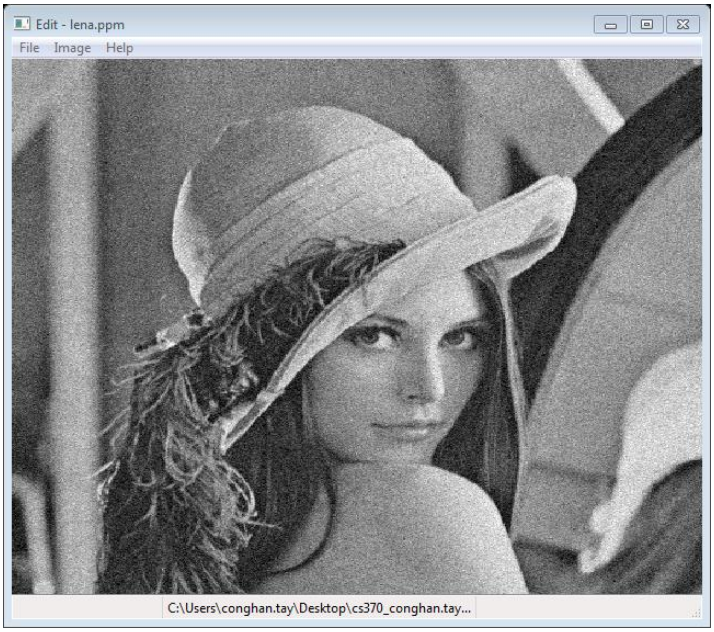
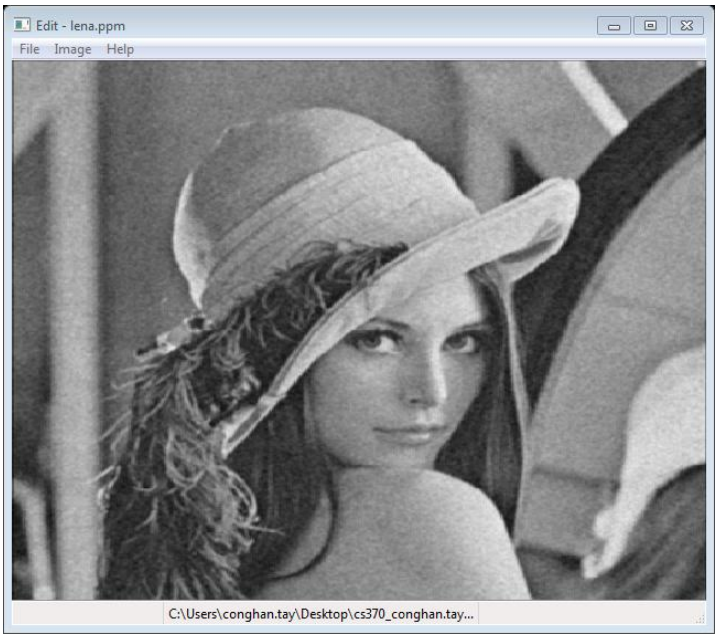
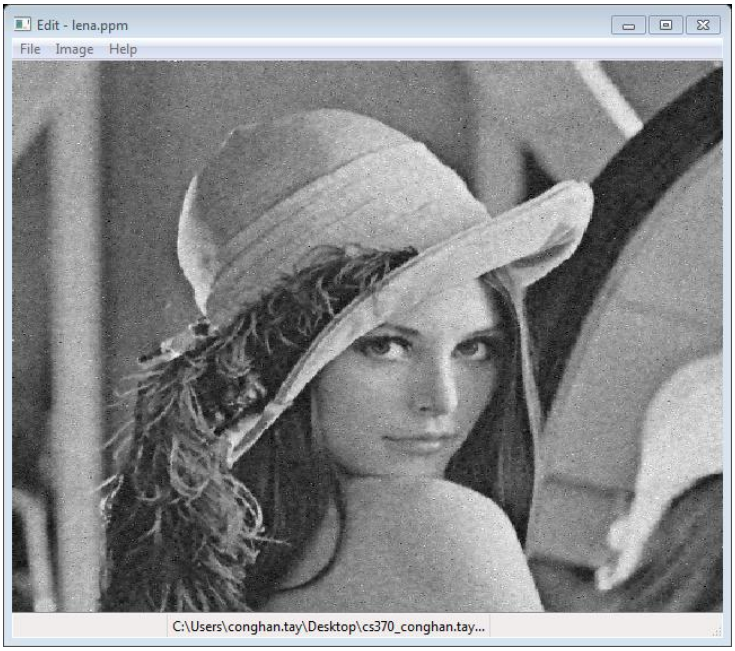
Variance = 256,

Noisy, Mean and Local Adaptive:



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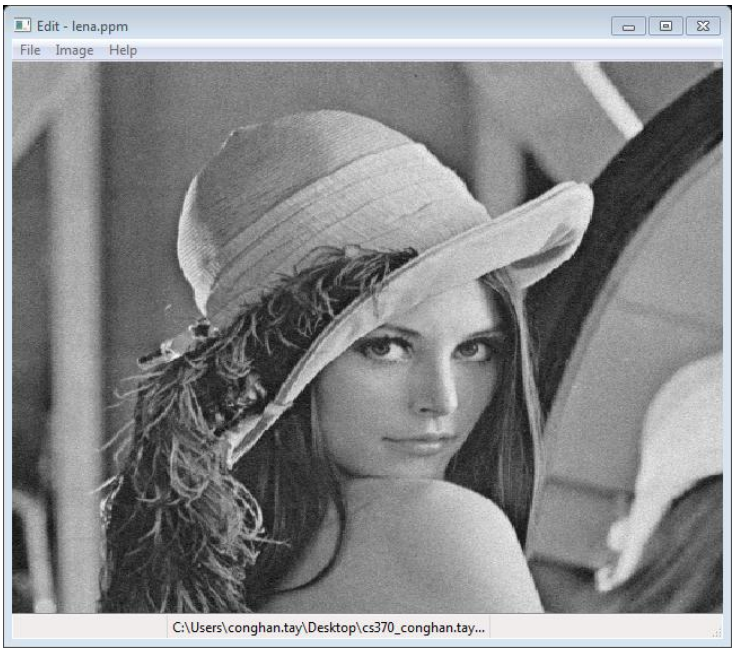
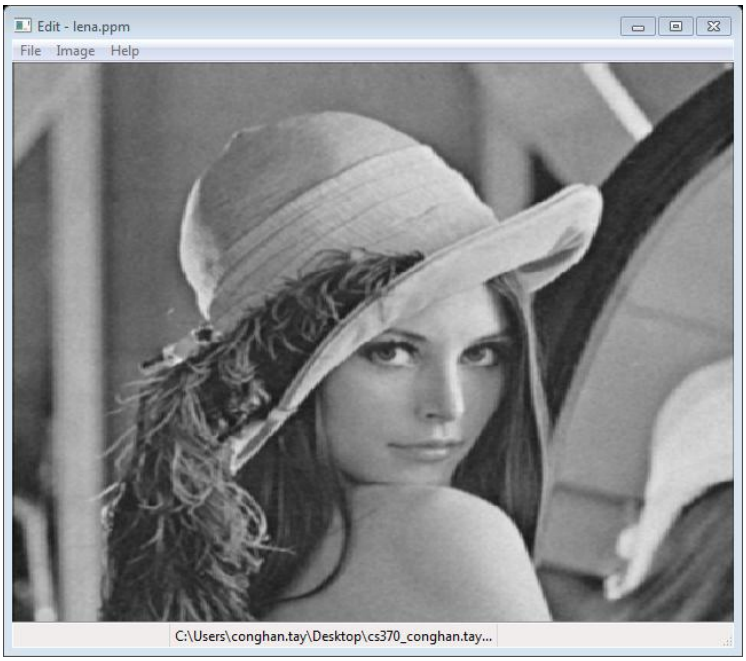
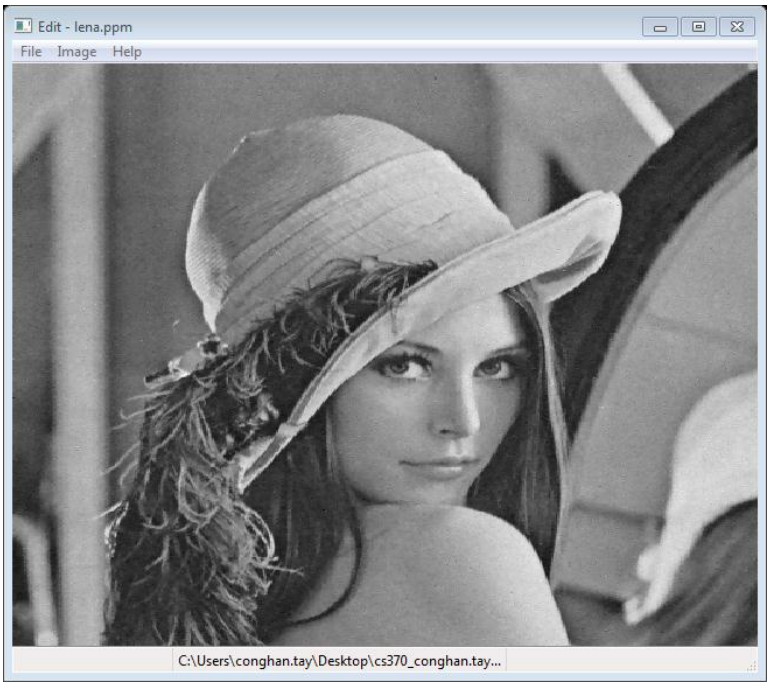
Variance = 50,

Noisy, Mean and Local Adaptive:



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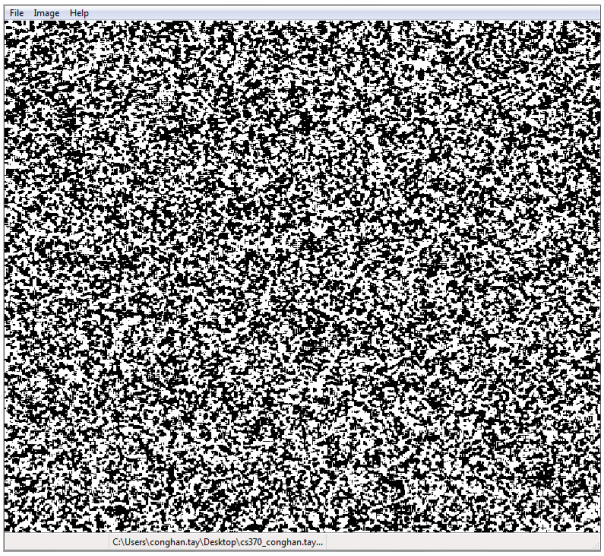
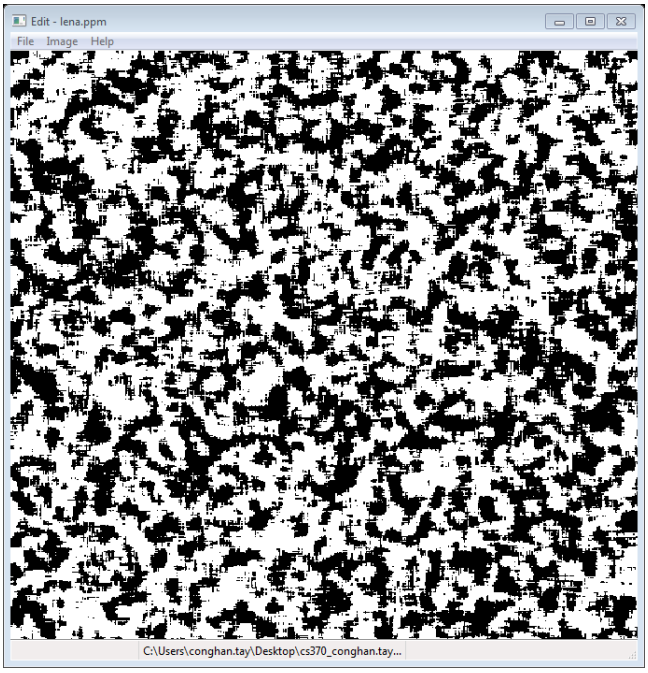
Part D Adaptive Median Noise Reduction

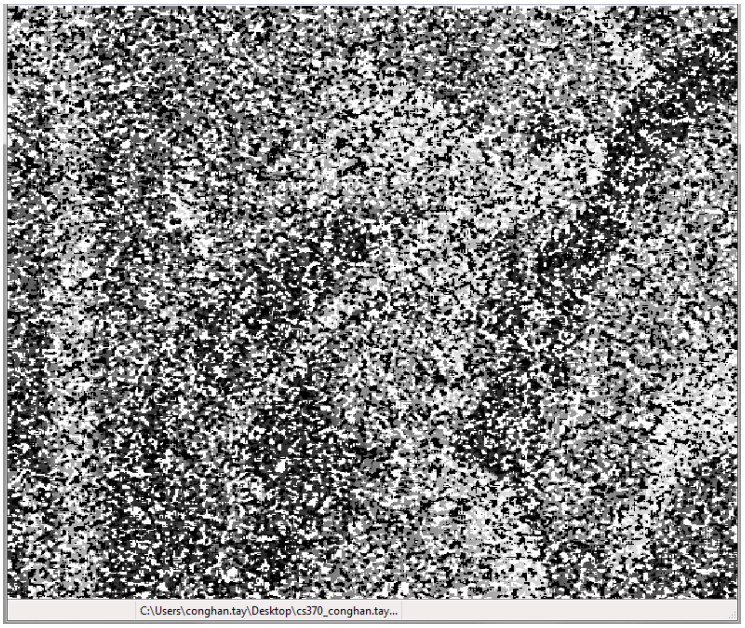
Following are images of a noisy image followed by a image applied with median filter followed by a image with AMF.

Salt and Pepper, P(a) = P(b) = 0.5, AMF = 10

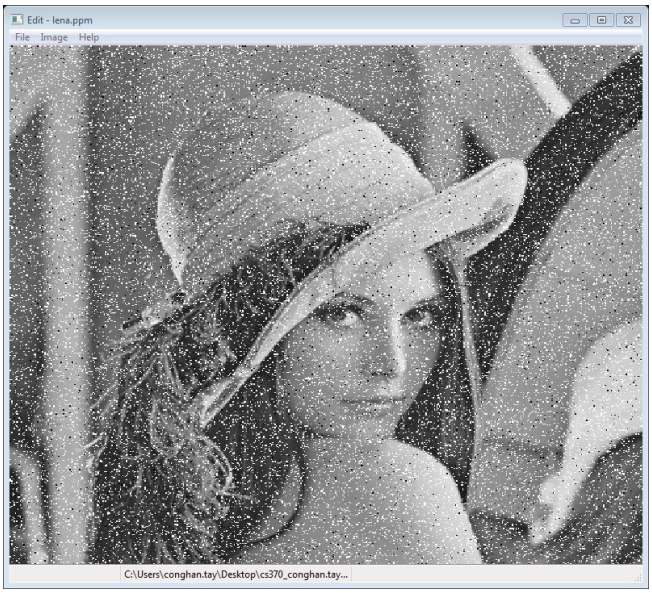




Salt and Pepper, P(a) = 0.4, P(b) = 0.6, AMF = 10



Salt and Pepper, P(a) = 0.01, P(b) = 0.9, AMF = 10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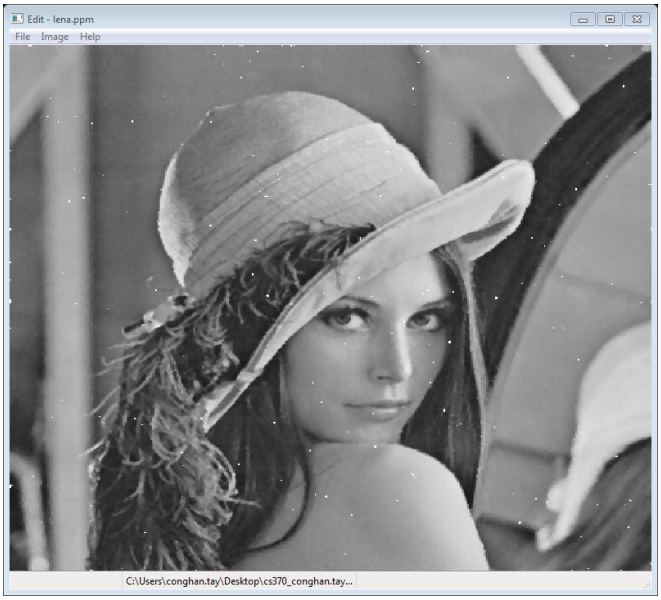
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