Discrete-time Signals Processing

Assignment No.02

Assignment Date: __xx-10-2023_____

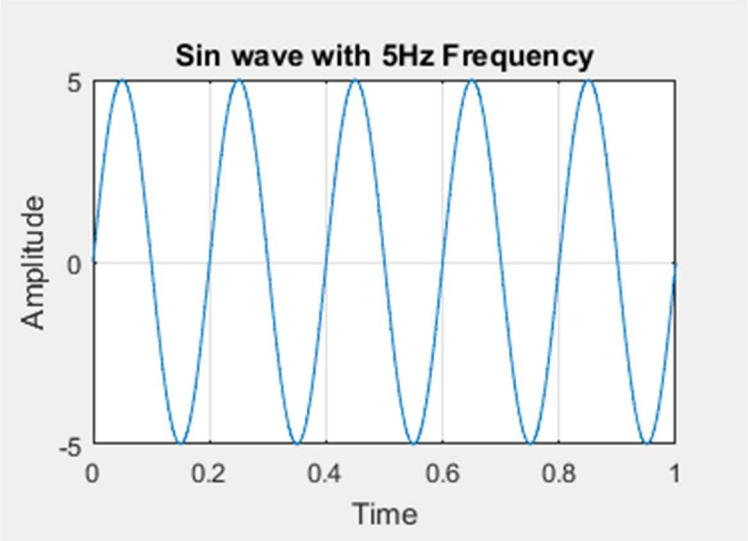
Firm Deadline till __07-11-2023_____ (During Class ____)

Title: Smoothing(implementing Moving Average) Out NoisY Signal Using Matlab

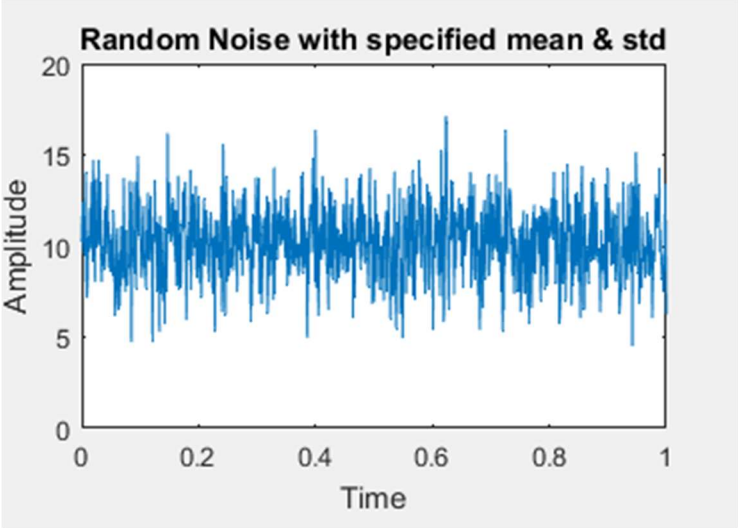
Provide a .m file with detailed comments and detailed analysis

Procedure:

1. Generate a sin wave of any desired frequency & amplitude and plot it in MATLAB as shown in Figure 1

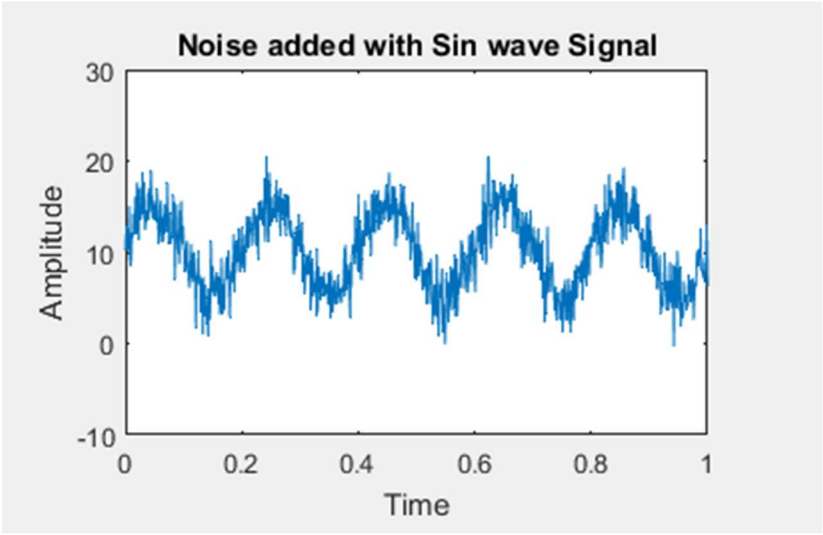


2. Generate a white Gaussian noisy signal with a three different mean and std, using MATLAB random function.

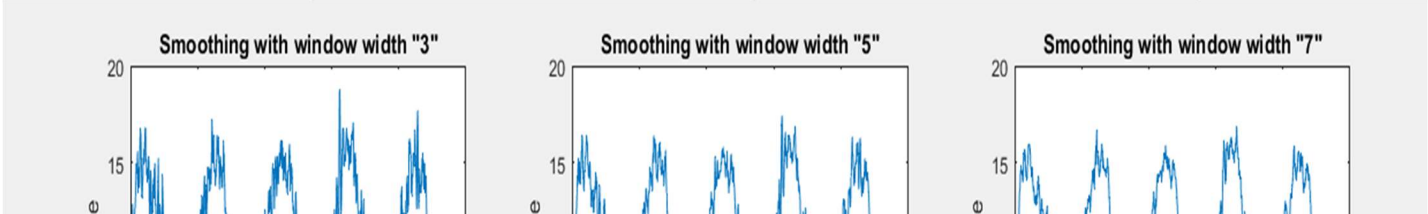


If you experience any problem using this function, type **helpwin** *function* in the command window.

3. The next step is to add up your sin waveform with the noise generated in the above step with a specific mean and std and generate & plot the three noisy signals.



4. Next step is to smooth your noisy signals and for that, you will be using the movmean function from MATLAB. Make sure you plot the signal with three different window sizes, take 3,5 and 7.
5. If you experience any problem using this function, type **helpwin** *function* in the command window.



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6. Analyze your results considering the Mean, Standards Deviation and Window size.

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