

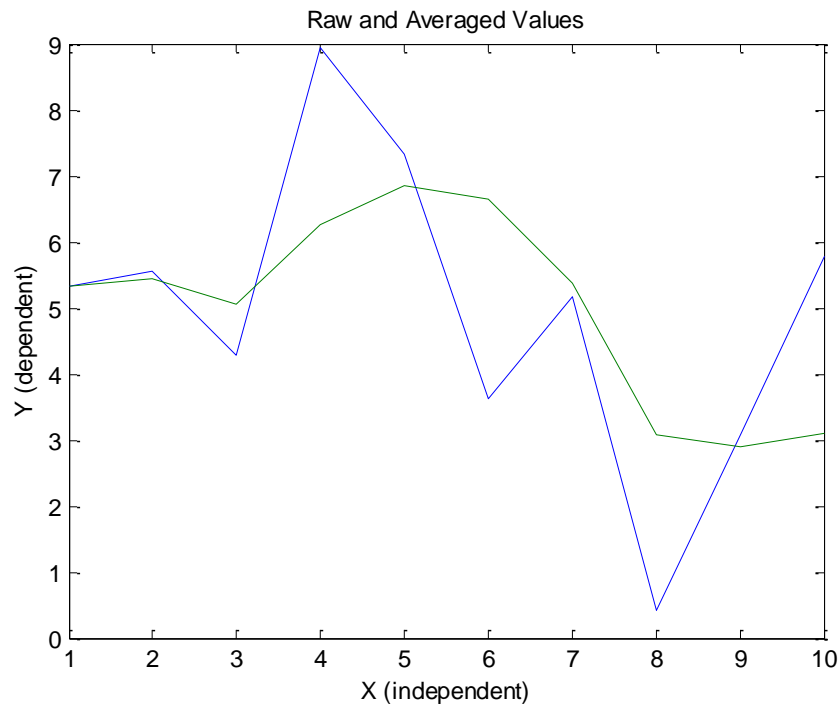
Assignment 3.0 – Persistent Variables and Random Number Generation and Use (v. 1.1)

GE-4200, Dr. C. S. Tritt, Winter 2011-12

Due Thursday, January 12 by start of lecture

Design, code and test a function, called `runAve`, which calculates and returns the running average of the past three values with which it was called. Note that special cases such as resetting the average and the first two calls after such a reset must be handled correctly. Test your function with a test script that "feeds" it "random" y values and plots both the original values and those returned by the function. Running averages provide a way to smooth noisy data (there are better ways). Imagine this is being done as the data is acquired so vectorization is not appropriate. Plot your "raw" and smoothed y data verses x (or time or sample) with appropriate labels, grid and a legend.

Please submit your source files and standard documentation. Your test script should prompt the user (using an `inputdlg` dialog) to enter the desired test data mean and standard deviation and the number of test values to be used. Good test values can be generated using 20 normally distributed random values with a mean of 5, standard deviation of 2. The test script also must collect returned values and generate the plot. A sample plot, not including the required grid and legend, is shown below.



The design of the test script and function will be done interactively in class and provided to students. A grading rubric will be provided.