**Octave**

Octave truly threw me for a loop. I was extremely confused on how to start and work the GUI, but luckily there were some extremely good sources. I started off by reading through an Octave tutorial from MyGreatLearning and tried some of their examples. It didn’t seem too terrible, but I had no clue how to actually get started on making a salter and smoother. Like the other assignments, I broke it down into different small steps:

1. Read from a csv file
2. Loop through data to manipulate it
3. Output to a new csv file

Luckily for me, there was an almost perfect video from Mr. Stem Edu TV that I followed along with. He went over exactly how to read a csv files, plot the data, and export it to a csv. If you look past the hours of debugging typos and syntax errors - which were made especially difficult since I couldn’t figure out how to view error messages in the console for a while - it was a decently simple process.

One of the weirdest things to me was the fact that arrays started at 1 rather than 0. It’s a foreign concept to me since every programming language I’ve ever used has always started at 0, but I don’t think it was too difficult to adjust to.

For the salter, it was just a matter of figuring out how to loop through an array and add a random value to it. I found randi([ x1, x2]) to be extremely useful for that purpose, and so I created a for loop that would add the randomly generated value to each index. The salter script then writes the outputs to salteddata.csv for the smoother to use.

The salter was more convenient, but also a tad bit more complicated. There exists an extremely convenient smoother method called movmean() that does the rolling average calculations for you. I wrote a for loop to call the function as many times as the user would like, and then printed its outputs to smootheddata.csv.

Despite the fact that MatLab seemed to have more resources online than Octave, they really were similar and I didn’t have much trouble converting MatLab information into Octave. Additionally, this cemented how much I hate loosely typed languages. I always prefer to know exactly what data types are being used when and where, and the fact that Octave doesn’t require them to be named made things more confusing to me.

Reference Links:

<https://www.mygreatlearning.com/blog/octave-tutorial/>

<https://en.wikibooks.org/wiki/Octave_Programming_Tutorial/Getting_started>

<https://www.youtube.com/watch?v=cLo2UOBU5yY>

<https://www.mathworks.com/help/matlab/ref/movmean.html>