JFree

I had to use third-party libraries like JFreeChart and Apache Commons Math to implement statistical analysis and data visualization for this assignment. At first, I had trouble installing the required libraries and dependencies, particularly JFreeChart and Apache Commons Math. The graphing method I was used stopped working a few months after the initial setup in VS Code, so I went back and re-downloaded the dependencies. Although it took a lot of time, this reconfiguration procedure was essential to the project's success. At first, I had just used the salting method, which added random noise to a data set of sine waves. I added charting and smoothing to the project after fixing the dependency problems. Gaussian noise with a standard deviation of 0.3 was added to the initial sine wave data in order to use the salting approach. I employed a moving average function with a window size of 5 to smooth the salted data, which lessened the effect of the noise and improved the data's clarity. I plotted the original, salted, and smoothed data on the same graph using JFreeChart for display. The resulting graphic made it evident how the datasets differed from one another, with the smoothed data showing a more distinct trend. Despite the setup and code breakdown issues at first, I was able to successfully implement the methods and generate meaningful visualizations, demonstrating how data can be transformed through salting and smoothing techniques.

A screen shot of a graph

AI-generated content may be incorrect.