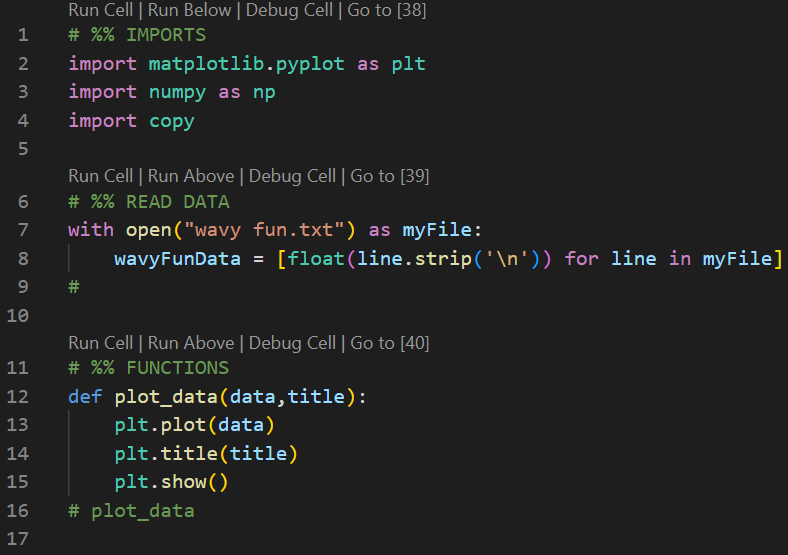
**Imports, Reading Data, and Plotting Function for Set-Up**



1. **Plot the Data & Output**

Text

Description automatically generated

Graphical user interface

Description automatically generated

1. **Finding Outliers via Observation**

There is a lot of noise over the span of the graph but particularly large outliers in the 25-75 and 225 – 275 ranges.

1. **Smoothing via Standard Deviation**

Text

Description automatically generated

Graphical user interface

Description automatically generated

1. **Smoothing via Sliding Windows – Simple & Weighted Averages**

Text

Description automatically generated

Text

Description automatically generated

Graphical user interface, histogram

Description automatically generatedGraphical user interface

Description automatically generated

1. **Error for Sliding Windows & Original Function**

A screenshot of a computer

Description automatically generated with medium confidence

A picture containing graphical user interface

Description automatically generatedAccording to the error calculations, using more neighboring points allows for not only a smoother function but also less error. However, using more neighboring points does have its limitations. The simple average seems to have less error on average when the window size remains around 7 points versus 9 points. Using weighted average, the opposite seems to be true where using 9 neighboring points lessens the error on average while still smoothing the function. **The best technique for this data set in terms of error and overall smoothness would be the sliding window with window size 7 using simple average.**